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FV 430 SERIES, VEHICLES ALL MARKS

MAINTENANCE SCHEDULE

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BY COMMAND OF THE DEFENCE COUNCIL

Kevin Trewin

Ministry of Defence
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DEFENCE EQUIPMENT & SUPPORT

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Amdt No.	Incorporated By (Signature)	Date
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PREFACE

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INTRODUCTION

1 Service users should forward any comments on this publication through the channels prescribed in AESP 0100-P-011-013. An AESP Form 10 is provided at the end of this publication; it should be photocopied and used for forwarding comments on this AESP.

2 AESPs are issued under Defence Council authority and where AESPs specify action to be taken, the AESP will of itself be sufficient authority for such action and also for the demanding of the necessary stores.

3 This AESP covers the maintenance required for the common aspects of the FV 430 Series vehicles. Maintenance must be conducted in conjunction with the AESP for the variant concerned. If no additional publication is issued then the maintenance information is contained within this publication.

Authority

4 This maintenance schedule is authoritative. If instructions contained in this publication differ from those in other publications, the instructions in this schedule are to be followed.

Responsibilities

5 The unit commander is responsible for the correct application of instructions in this schedule. The unit commander may order any operations to be carried out more frequently than specified, if conditions under which his vehicle are operating render it necessary. The commander should seek the advice of his REME adviser before making such changes. Where any maintenance task is specifically nominated (REME task), it is the responsibility of the vehicle commander to ensure that the task is carried out.

6 Days on which distance/time maintenance is carried out may be adjusted to suit activities of the unit. As a guide variations of 10 per cent, plus or minus, are acceptable.

7 Vehicle Commander and crew maintenance responsibilities are detailed in All Arms Training Standing Orders for the Safety of crews of AFVs (Army Code No. 71276).

Records

8 Maintenance (except running checks) is to be recorded in the Vehicle Record Book AB 413.

RELATED AND ASSOCIATED PUBLICATIONS

Related publications

9 The Octad for the subject equipment consists of the publications shown opposite. All references are prefixed with the first eight digits of this publication. The availability of the publications can be checked by reference to the relevant Group Index (see AESP 0100-A-001-013).

Category/Sub-category			Information Level			
			1 User/ Operator	2 Unit Maintenanc e	3 Field Maintenanc e	4 Base Maintenanc e
1	0	Purpose and Planning Information	*	*	*	*
	1	Equipment Support Policy Directives	*	*	*	*
2	0	Operating Information	*	*	*	*
	1	Aide-Memoire	*	*	*	*
	2	Training Aids	*	*	*	*
3		Technical Description	*	*	*	*
4	1	Installation Instructions	*	*	*	*
	2	Preparation for Special Environments	*	*	*	*
5	1	Failure Diagnosis	*	*	*	*
	2	Repair Instructions	*	*	*	*
	3	Inspection Standards	*	*	*	*
	4	Calibration Procedures	*	*	*	*
6		Maintenance Schedules	601	601	*	*
7	1	Illustrated Parts Catalogues	*	*	*	*
	2	Commercial Parts Lists	*	*	*	*
	3	Complete Equipment Schedule, Production	*	*	*	*
	4	Complete Equipment Schedule, Service Edition (Simple Equipment)	*	*	*	*
	5	Complete Equipment Schedule, Service Edition (Complex Equipment)	*	*	*	*
8	1	Modification Instructions	811	811	811	811
	2	General Instructions, Special Technical Instructions and Servicing Instructions	821	821	821	821
	3	Service Engineered Modification Instructions (RAF only)	*	*	*	*

*Category/Sub-category not published

Associated publications

10 <u>Reference</u>	<u>Title</u>
JSP 341	Road Transport Regulations
Army Code 14693	User Handbook FV 432 Mk 2 and 2/1
Army Code 63723	Health and Safety in Mgmt in ESO/REME
Army Code 71276	All Arms Standing Orders for the Safety of Crews of AFVs
Army Code 71576	Unit Equipment Care Guide

WARNINGS

- (1) **STATIC ELECTRICITY. VEHICLES FITTED WITH RUBBER PADDED TRACKS MAY BE CHARGED WITH STATIC ELECTRICITY AND THEREFORE MUST BE EARTHED BEFORE RE-FUELLING.**
- (2) **REFUELLING MUST NOT TAKE PLACE NEAR RADAR EQUIPMENT. SAFE DISTANCE WILL VARY BETWEEN 2 AND 275 METRES DEPENDING ON RADAR EQUIPMENT. VEHICLE CREWS ARE TO CHECK WITH RADAR OPERATORS BEFORE REFUELLING (ARMY CODE 63723).**
- (3) **FLUID AL 11 IS HIGHLY FLAMMABLE. THE PREPARATION OF THE FLUID FOR WINDSCREEN WASHERS IS TO BE CARRIED OUT IN THE OPEN AND AWAY FROM NAKED FLAME. MINIMUM PRECAUTIONS AFTER USE IS TO WASH THE AFFECTED SKIN AREAS WITH SOAP AND WATER.**
- (4) **FLUID AL 39 IS BOTH TOXIC AND HAZARDOUS. REFER TO LOCAL UNIT PRECAUTIONS OR CURRENT DCIs FOR FULL SAFETY PROCEDURES. MINIMUM PRECAUTIONS AFTER USE IS TO WASH THE AFFECTED SKIN AREAS WITH SOAP AND WATER.**
- (5) **ELECTROLYTE IS BOTH TOXIC AND HAZARDOUS. BATTERIES PRODUCE HIGHLY FLAMMABLE/EXPLOSIVE HYDROGEN GAS WHILST BEING CHARGED. DO NOT DISCONNECT BATTERY TERMINALS IMMEDIATELY AFTER THE ENGINE HAS BEEN RUNNING, OR IMMEDIATELY AFTER THE BATTERIES HAVE BEEN CHARGED FROM AN EXTERNAL SOURCE, WAIT A MINIMUM OF HALF AN HOUR FOR THE BATTERY GASSES TO DISPERSE.**
- (6) **DANGER OF SCALDING. DO NOT REMOVE COOLANT FILLER CAP BEFORE THE ENGINE TEMPERATURE HAS FALLEN BELOW 93 DEG C (200 DEG F). THE COOLANT HEADER TANK MUST NOT BE MORE THAN HAND HOT BEFORE REMOVING THE FILLER CAP.**
- (7) **PERSONAL INJURY. PERSONNEL ARE TO WEAR GOGGLES AND GLOVES WHEN WORKING WITH TOOLS THAT USE METAL TO METAL IMPACT e.g. CHISELS, TO PROTECT EYES AND HANDS AGAINST METAL FRAGMENTS.**
- (8) **SMOKE DISCHARGERS. ENSURE ALL SMOKE DISCHARGER BARRELS ARE UNLOADED BEFORE CARRYING OUT MAINTENANCE.**
- (9) **DEAFNESS. RUNNING ENGINES CAN DAMAGE HEARING. EAR DEFENDERS ARE TO BE WORN BY ALL PERSONNEL WORKING ON OR NEAR THE VEHICLE WHILST THE ENGINE IS RUNNING.**
- (10) **ASPHYXIATION HAZARD. IF A BCF FIRE EXTINGUISHER IS USED INSIDE THE VEHICLE, PERSONNEL MUST EVACUATE THE VEHICLE AND NOT RE-ENTER UNTIL THE FUMES HAVE DISPERSED.**
- (11) **TOXIC FUMES. DO NOT RUN THE NBC SYSTEM WHEN PAINTING OR CLEANING SOLVENTS ARE BEING USED IN THE VICINITY, OR WHEN ANY OTHER TOXIC SOURCES ARE KNOWN OR SUSPECTED TO BE PRESENT IN THE AIR (e.g. OTHER VEHICLES EXHAUST GASSES) THAT MIGHT PRESENT A HAZARD.**

CAUTION

TRACK CHECK. Before removing/renewing track links check the AB 413 to ensure track condemnation limit will not be exceeded.

TABLE 1 – FUELS, LUBRICANTS AND ASSOCIATED PRODUCTS

NOTES

(1) Only products listed below are to be used on this equipment unless special authority is obtained from the Ministry of Defence or Theatre HQ.

(2) Oil changes at the –15 deg C (5 deg F) point are only to be made on the advice of the local REME adviser. Changes of oil grade will normally be recommended when the ambient temperature is expected to be below –15 deg C (5 deg F) for more than five hours per day. Special instructions regarding oil grades will apply if the engine has been 'winterized'.


Serial (1)	Above –15 deg C (5 deg F)		Below –15 deg C (5 deg F)		NATO Stock Number (6)
	Joint Services Designation (2)	NATO Code No. (3)	Joint Services Designation (4)	NATO Code No. (5)	
	OILS				
1	OEP 220	0.226	OEP 38	0.186	9150-99-910-0542 OMD 220 9150-99-910-0538 OEP 38
2	OMD 90	0.1176	OMD 55	0.1178	9150-99-991-1124 OMD 90 9150-99-477-3153 OMD 55
3	OM 18	H.520	No change	-	9150-99-225-1567 OM 18
	GREASES				
4	XG 279	G.403	No change	-	9150-99-220-2418 3 kg
	PROTECTIVES				
5	PX 7	S.743	No lubricant – surfaces clean and dry	-	9150-99-943-2033 3 kg
6	PX 24	C.634	-	-	6850-99-224-5311 1 litre 6850-99-224-4966 5 litre
7	Wax wrap	-	-	-	8135-99-943-2410
8	Tape	-	-	-	7510-99-220-1784
	DETERGENTS				
9	Detergent/ pressure wash	-	-	-	7930-99-016-1401
10	GP Detergent	-	-	-	7930-99-224-1922
11	AL 11	-	-	-	6850-99-224-5628
12	AL 39	-	-	-	6850-99-225-0424

TABLE 2 CAPACITIES

NOTES

(1) 1 gallon = 4.546 litres.

(2) 1 pint = 0.570 litre.

Serial (1)	System (2)	Capacity (Refill)		Product (5)
		Litres (3)	Pints (4)	
	ENGINE			
1	Lubrication	33	58	OMD 90
2	Cooling	44.3	78	Diluted AL 39
3	Hydraulic fan-drive system	22.2	39	OMD 90
4	Governor	1.15	2	OM 18
	TRANSMISSION			
5	Gearbox	16.5	29	OMD 90
6	Steering unit	26.7	47	OMD 90
7	Final drives (each)	4.3	7.5	OEP 220
	SUSPENSION			
8	Road wheel hubs (each)	1.7	3	OMD 90
9	Idler wheel hubs (each)	1.7	3	OMD 90
	PERISCOPE/SCREEN WASHER			
10	Reservoir	As reqd	-	Diluted AL 11
	FUEL SYSTEM			
11				

NOTE

THESE ARE DRY CAPACITIES. When refilling after draining, care must be taken to fill to the correct level.

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CHAPTER 1
AUTOMOTIVE MAINTENANCE SCHEDULE
CONTENTS

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- 2 Mission maintenance – Table 4
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AUTOMOTIVE MAINTENANCE TERMS

Running checks – Tables 1, 2 and 3

1 These checks are to be carried out:

1.1 Table 1 – Before use. Before vehicle is used or started up.

NOTE

When an 'after use check' has been carried out within the previous four hours, it is acceptable to use the vehicle without carrying out 'before use check'.

1.2 Table 2 – During halts. During halts on the march.

1.3 Table 3 – After use.

1.3.1 After vehicle has been used.

1.3.2 At least once every 24 hours when vehicle is in continuous use.

Mission maintenance – Table 4

2 A mission is defined as any vehicle movements totalling from 100-1000 miles. This maintenance is to be carried out:

- 2.1 Between one mission and the next (preferably at the end of a mission).
- 2.2 On the orders of the local commander.

Monthly maintenance – Table 5

3 This maintenance is to be carried out at the specified frequency.

2500 miles/12 monthly – Table 6

4 This maintenance is to be carried out at the specified mileage/frequency.

Fording and deep wading - Tables 7 and 8

5 This maintenance is to be carried out on orders of the local commander before and after a water crossing.

Receipt maintenance - Table 9

6 This maintenance is to be carried out on receipt of a new or overhauled vehicle.

Initial maintenance - Table 10

7 This maintenance is to be carried out when the vehicle (or new/overhauled assembly) has completed 'running in' period.

Out of use maintenance – Tables 11, 12 and 13

8 This maintenance is to be carried out when an equipment is to be placed OOU in Unit lines for a period up to 12 months and authorised by formation HQ.

- 8.1 Table 11 – OOU preparation. To be completed prior to storing the equipment.
- 8.2 Table 12 – OOU during. To be completed weekly or monthly as specified in Table 12.
- 8.3 Table 13 – OOU reactivation. To be completed prior to bringing the equipment back into use.

TABLE 1 RUNNING CHECKS – BEFORE USE

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	<p>External: Check security, condition and top up levels as required:</p> <p>1.1 Track and track tension (adjust if necessary).</p> <p>1.2 External stowage and extinguishers.</p> <p>1.3 Hull drain and access plates are fitted.</p> <p>1.4 Clevis and split pins on steering unit control rods.</p> <p>1.5 Drain power pack compartment (if necessary).</p> <p>1.6 Signs of coolant leaks.</p> <p>1.7 Steering unit oil.</p> <p>1.8 Coolant.</p> <p>1.9 Fan drive hydraulic oil.</p> <p>1.10 Air restriction indicator.</p> <p>1.11 Generator hoist (FV 436 only).</p> <p>Internal:</p>	<p>XG 279</p> <p>OMD 90</p> <p>Diluted AL 39</p> <p>OMD 90</p> <p>OMD 90</p>	<p>See Warnings</p>
2	<p>Check security, condition and top up levels as required:</p> <p>2.1 Internal stowage and vision equipment.</p> <p>2.2 Fixed and portable fire extinguishers.</p> <p>2.3 Steering lever travel.</p> <p>2.4 Engine oil level.</p> <p>2.5 Gearbox oil level.</p> <p>2.6 Fuel injection pump governor oil.</p> <p>2.7 Driver's periscope/screen washer reservoir.</p> <p>2.8 Operation of both audible and visual fire warning system.</p>	<p>OMD 90</p> <p>OMD 90</p> <p>OM 18</p> <p>Diluted AL 11</p>	<p>See Chap 3 Para 17</p> <p>See Warnings</p>
3	<p>Check operation of:</p> <p>3.1 Horn and external lights.</p> <p>3.2 Fuel gauge.</p> <p>3.3 Warning lights and gauges.</p>		

(continued)

TABLE 1 RUNNING CHECKS – BEFORE USE (continued)

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
4	Start engine.		
5	Check operation of: 5.1 Warning lights and gauges. 5.2 Intercom (IC). 5.3 Ventilation system. Fuel cut off pedal.		See Warnings
6	On moving off, check operation of steering and brakes.		

TABLE 2 RUNNING CHECKS – DURING HALTS

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Check: 1.1 Engine oil level (engine idling). 1.2 Gearbox oil level (hot check). 1.3 Security and condition of final drive, nut and locking bar. (Replace if necessary – REME). 1.4 Condition of track and track tension. (Adjust if necessary). 1.5 Suspension components for damage, overheating and leaks. 1.6 Check steering unit for signs of overheating. 1.7 Security of internal and external stowed items.	OMD 90 OMD 90 XG 279	
2	Report faults.		

TABLE 3 RUNNING CHECKS – AFTER USE

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Check: 1.1 Engine oil level (engine idling). 1.2 Gearbox oil level (hot check).	OMD 90 OMD 90	
2	Stop engine.		
3	Check: 3.1 Operation of wipers and washer. 3.2 Operation of horn and external lights. 3.3 Check level Fuel injection pump governor oil.	OM 18	
4	Check: 4.1 Cleanliness of radiator and fan louvres. 4.2 Air restriction indicator. 4.3 Security of shock absorbers, track tensioners, track idler wheels, road wheels, bump stops, top rollers, sprocket rings and pad deflectors. 4.4 Security and condition (cracking) of final drive, nut and locking bar. (Replace if necessary – REME). 4.5 Security and condition of track pads, track pins and nuts. 4.6 Track tension (adjust if necessary).	XG 279	
5	Check following levels and top up as necessary. 5.1 Steering unit oil. 5.2 Fan drive hydraulic oil. 5.3 Fuel. NOTE It is recommended that fuel tanks be filled to 50 mm (2 in.) from maximum to reduce contamination by condensation.	OMD 90 OMD 90	
	5.4 Coolant.	Diluted AL 39	See Warnings
6	Check power pack compartment for any sign of leaks and security of components. (Drain if necessary).		
7	Check steering unit for signs of overheating.		

(continued)

TABLE 3 RUNNING CHECKS – AFTER USE (continued)

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
8	Check and top up batteries: 8.1 Daily if vehicle is in constant use. 8.2 Weekly if vehicle is used for driver or individual training.	Distilled water	See Warnings
9	Report faults. NOTE If vehicle is parked in the open in inclement weather, ensure hatches are closed and cover vehicle with a tarpaulin.		

TABLE 4 MISSION MAINTENANCE

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Carry out Before Use Check (Table 1).		
2	Service ALL batteries, recharge as necessary.	Distilled water/ PX 7	See Warnings
3	Check coolant SG.		See Warnings
4	Clean radiator matrix.		
5	Drain fuel collector tank.		
	POWER PACK COMPARTMENT		
6	Check power pack compartment for leaks and security of components.		
7	Lubricate: 7.1 Gearbox coupling universal joints. 7.2 Steering unit control linkage. 7.3 Accelerator linkage.	XG 279 XG 279 XG 279	
	TRACKS, SUSPENSION AND FINAL DRIVES		
8	Lubricate: 8.1 Final drive labyrinths. 8.2 Track guide support roller bearings. 8.3 Axle arm bearings. 8.4 Track tensioner arm bearings.	XG 279 XG 279 XG 279 XG 279	

(continued)

TABLE 4 MISSION MAINTENANCE (continued)

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
9	Check: 9.1 Condition of road and idler wheels, sprocket rings and track pads. 9.2 Security and condition of final drive, nut and locking bar (cracking). (Replace if necessary - REME).		
10	Check oil levels and top up as necessary: 10.1 Idler wheel hubs. 10.2 Road wheel hubs. 10.3 Final drives.	OMD 90 OMD 90 OEP 220	
11	Check and tighten as necessary: 11.1 Road wheel nuts. 11.2 Track idler wheel nuts. 11.3 Sprocket ring nuts. 11.4 Track pin nuts.		
SMOKE GRENADE DISCHARGERS			
12	Check/test: 12.1 Dry clean. 12.2 Test firing circuit.		See Chap 3 Ser 14
VENTILATION SYSTEM			
13	Carry out test sequence procedure.		See Chap 3 Ser 21
GENERAL			
14	Enter maintenance details in AB 413 and report faults. NOTE Details of mission maintenance are not to be recorded when carried out as part of any other maintenance.		

TABLE 5 MONTHLY MAINTENANCE

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	<p>Power pack</p> <p>Check security of all eight sets of muff coupling retaining bolts. If the bolts have become loose it is necessary to renew tab washers and screws before fitting the retaining plates and bolts. Tighten the ¼in. and ¾in. 'T' steel set screws to 11Nm (8lb/ft), and secure with tab washers. Note: This examination is to be recorded in section 4 of the AB413 (Vehicle Documents).</p>		REME

TABLE 6 2500 MILES/12 MONTHLY MAINTENANCE

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
	POWER PACK		
1	Remove Power Pack and inspect power pack compartment sealing strips for serviceability.		REME
2	Renew:		
	2.1 Engine oil filter elements and seals.		
	2.2 Engine fuel filter element and clean case.		
3	Drain and refill:		
	3.1 Engine.	OMD 90	
	3.2 Gearbox and renew filter element and seal.	OMD 90	
	3.3 Hydraulic fan system.	OMD 90	
	3.4 Steering unit oil tank, sump and weir.	OMD 90	
	3.5 Final drives.	OEP 220	
4	Clean:		
	4.1 Engine oil tank filter gauze.		REME
	4.2 Hydraulic fan system magnetic filters.		
	4.3 Fuel collector tank and filter.		REME
	4.4 Power pack compartment.		
5	Lubricate crankshaft forging seals.	XG 279	
6	Run up power pack and check for leaks and faults.		REME
7	Check security of all eight sets of muff coupling retaining bolts.		REME
8	Refit power pack.		REME
	GENERAL		
9	Dismantle and clean battery vent flame traps.	Detergent	
10	Carry out Mission Maintenance (Table 4).		
11	Enter maintenance details in AB 413 and report faults.		

TABLE 7 FORDING AND DEEP WADING MAINTENANCE - BEFORE

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Grease final drive labyrinths.	XG 279	
2	Check hull access plates and seals are correctly fitted.		
3	Check rear door is correctly sealed.		

TABLE 8 FORDING AND DEEP WADING MAINTENANCE - AFTER

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Check road wheel hubs, idler wheel hubs and final drive oils for contamination (drain, flush twice with PX24 and refill as necessary).	OEP 220/OMD 90	
2	Lubricate axle arm bearings.	XG 279	
3	Lubricate track support roller bearings.	XG 279	
4	Grease final drive labyrinth.	XG 279	
5	Check hull for contamination (drain if necessary).		
NOTE Where a vehicle has been in contact with salt water it is to be washed as soon as possible with fresh water.			

TABLE 9 RECEIPT MAINTENANCE

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Carry out Mission Maintenance (Table 4).		
2	Enter maintenance details (Receipt) in AB 413 and report faults.		

TABLE 10 INITIAL MAINTENANCE

At 200 Miles

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Carry out Mission Maintenance (Table 4) (Only applicable if a Mission Maintenance has not been carried out since Receipt Maintenance).		
2	Enter maintenance details (Initial) in AB 413 and report faults.		

TABLE 11 OUT OF USE MAINTENANCE - PREPARATION

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Thoroughly clean the equipment inside and out.		
2	Check the vehicle AB413. Ensure that all details are correct and that the vehicle maintenance is current.		Should the vehicle be due a 2500 mile/12 monthly maintenance service during the OOU period, then this must be carried out before the vehicle is stored.
3	Carry out a Commanders Functional Test (CFT).		
4	An AF G857A examination should be carried out by REME. All spares are to be demanded and outstanding jobs completed.		This may be an opportunity for the equipment to receive the Mandatory Equipment Inspection (MEI). Equipments awaiting cosmetic spares can be placed into out of use storage and spares fitted by the maintenance team, as and when time permits.
5	Remove all signs of rust, prime and finish paint all treated areas. All grease/oil points are to be lubricated and any unprotected surfaces liable to corrode smeared with a coating of oil or grease.		
6	Reverse vehicle into storage area on completion of all relevant services/ inspections. CES		
7	Remove CES from vehicle, check items and carry out the following: 7.1 Clean, service and paint items as required. 7.2 Boiling vessel and cooking pot lids are to be left open. 7.3 Cookers are to be drained of fuel. 7.4 Water/POL jerrycans are to be drained and stored with their lids open. 7.5 Items found to be deficient/ unserviceable from CES are to be demanded/exchanged. 7.6 CES is to be stored off the vehicle.		

(continued)

TABLE 11 OUT OF USE MAINTENANCE - PREPARATION (continued)

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
8	<p>AUTOMOTIVE</p> <p>Check the following:</p> <p>8.1 Fuel level: Ensure that fuel tanks are fully topped up.</p> <p>8.2 Ensure the vehicle is dry, (inside and out).</p> <p>8.3 The vehicle is to be chocked against movement and the steering levers left in the off position.</p> <p>8.4 Remove all access plates. Place clean and dry drip trays beneath vehicle.</p> <p>8.5 Remove service and fully charge all batteries. Replace batteries in trays but leave disconnected with cables insulated.</p> <p>8.6 Access doors, hatches and engine decks are to be left open to allow air circulation.</p> <p>8.7 Track tensioners are to be relieved.</p>	<p>Distilled water/PX 7</p>	<p>Access doors and hatches may need to be closed whenever local security state changes or if unit is subjected to CFE inspection.</p>
9	<p>SMOKE DISCHARGERS</p> <p>Grease the interior of the smoke dischargers, cover with mouldable wax wrap and seal with adhesive tape.</p>		

TABLE 12 OUT OF USE MAINTENANCE - DURING

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Weekly: 1.1 Check contents of drip trays. Any signs of fluid must be reported to REME for further investigation.		
2	Monthly: 2.1 Carry out a visual check of suspension and running gear for signs of leaks. 2.2 Carry out a general, visual inspection of the vehicle, checking for signs of corrosion or fungal growth both internally and externally. Remove all traces if found. 2.3 Check the serviceability of the fixed fire extinguishers. 2.4 Report all faults found.		

TABLE 13 OUT OF USE MAINTENANCE – REACTIVATION

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
1	Adjust tracks.	XG 279	
2	Apply steering levers fully, and remove chocks.		
3	Check and reconnect all batteries.	Distilled water/PX 7	
4	Check all oil levels and top up as necessary.		See preliminary pages Table 2.
5	Check coolant level and SG. Adjust as necessary.	AL 39	
6	Refit all access plates.		
7	Carry out a Commanders Functional Test (CFT).		
9	Report all faults.		The vehicle must be given a full AF857 inspection early in the units inspection programme.
	CES		
9	Remove preservation, check condition and re-stow CES on vehicle.		Items of lifting and towing equipment subject to testing are to be inspected and tested by the appropriate authority.

CHAPTER 2
ARMAMENT MAINTENANCE SCHEDULE

This Chapter has not been issued

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CHAPTER 3
AUTOMOTIVE MAINTENANCE INSTRUCTION BOOKLET

CONTENTS

Para

- 1 Introduction
- 2 Frost precautions
- 4 Batteries
- 6 Air cleaner
- 7 Track examination
- 14 Smoke grenade discharger - maintenance
- 15 Power pack compartment - sealing
- 16 Braking and steering test
- 17 Steering lever travel
- 18 Steering test
- 19 Braking test
- 20 Fuel cut-off test
- 21 Ventilation system - test sequence

INTRODUCTION

1 Complete servicing instructions and details of crew tasks can be found in the relevant section of the User Handbook, Army Code No 14693 (AESP 2350-T-251-201 when produced).

FROST PRECAUTIONS

2 When frost precautions are ordered drain driver's periscope/windscreen washer container, refill with a mixture of two parts water one part AL 11.

3 The specific gravity of the engine coolant must be checked at least monthly.

BATTERIES

4 If the vehicle is operating in high temperatures, batteries may require topping-up more frequently than specified. **Low maintenance batteries do not require topping-up and are not to be fitted with 6TN batteries.** If in doubt REME advice should be sought.

5 To clean battery vent system. Remove the vent/flame trap cover. Wash the vent/flame trap filter in detergent (Table 1, page ix, Fuels, Lubricants and Associated Products). Ensure the flexible pipe and hull vent drilling are clear from obstruction. Replace vent/flame trap and cover.

AIR CLEANER

6 The air restriction indicator indicates the flow of air through the air intake. Air filters are not changed on time/mileage but when they no longer allow sufficient air flow. In dusty conditions, cleaning of the air filters may be required more frequently than specified. If in doubt REME advice should be sought.

TRACK EXAMINATION

7 Track **ON** vehicle and correctly tensioned. Check as laid down in User Handbook, Army Code No 14693 (AESP 2350-T-251-201 when issued).

- 8 Track **OFF** vehicle check (renew as necessary).
 - 8.1 Condition and security of shock absorbers, track tensioners and bump stops.
 - 8.2 Condition of idler wheels, road wheels, sprocket wheels, sprocket rings and top rollers.
- 9 Track links and pins, check for:
 - 9.1 Bent track pins.
 - 9.2 Bush walking and bush failure - track pin not to protrude outside protective cowl.
 - 9.3 Cracked castings.
- 10 Rubber pads, check for:
 - 10.1 Excessive wear or damage.

NOTES

(1) Pads must have a minimum of 75 per cent of road contact remaining and must have a minimum height of 3 mm (1/8 in.) above metal spud of track link. 'Chunking' will be limited to 25 per cent of pad surfaces and must be evenly distributed on pad.

(2) When new rubber pads or new tracks are fitted, securing nuts need to be retorqued to 95 Nm (70 lbf ft) after a run of 8 to 16 Km (5 to 10 miles) repeating the process at 80 Km (50 miles).

- 11 Check sprocket drive faces for wear.
- 12 Torque tighten track pin nuts to 136 Nm (100 lbf t) ensuring equal numbers of threads protrude both ends of the pin. **DO NOT LUBRICATE THREADS.**
- 13 Check and tighten if necessary.
 - 13.1 Sprocket ring nuts.
 13. Track idler wheel nuts and locating pins.
 - 13.3 Road wheel nuts.

NOTE

If for any reason the road wheel nuts have been slackened and re-tightened, they must be checked for tightness daily for the **next three days that the vehicle is operated**. The nuts must be tightened by one man using the spanner supplied for this purpose. Pipes, bars etc must not be used to increase the leverage as the torque must not exceed 163 Nm (120 lbf ft).

SMOKE GRENADE DISCHARGER - MAINTENANCE

14 Smoke dischargers are to be checked as follows:

- 14.1 Ensure that the bore of each discharger cup is clear, clean and dry.
- 14.2 Check that all electrical harnesses and connectors are secure and undamaged.
- 14.3 Set master switch to ON.
 - 14.3.1 Hold a suitable screwdriver on the upper part of the jack connection inside the discharger cup.
 - 14.3.2 Contact the screwdriver to the metal body of a suitable 24 volt single element bulb.
 - 14.3.3 Press the bulb central contact to the side of the discharger.
 - 14.3.4 Depress the appropriate firing button.
 - 14.3.5 The bulb should illuminate.

NOTE

It is permissible for a suitable locally manufactured tester to be used for testing circuits.

- 14.4 If the bulb fails to illuminate check the circuit fuse.
- 14.5 Repeat the test for each discharger cup.
- 14.6 Report any test failure to the REME.

POWER PACK COMPARTMENT - SEALING

15 To ensure the correct cooling airflow through the radiator, the power pack compartment must be correctly sealed. The seals must be checked each time the engine decks or bulkhead panels are removed. Drain plugs and access covers must be refitted after any servicing task.

BRAKING AND STEERING TEST

16 As part of the CFT it is essential that a Braking and Steering test is carried out. This test must be carried out before the vehicle leaves camp for the Road Test.

Steering lever travel

17 Steering lever travel is to be between 150 to 200 mm (6 to 8 in.) from the OFF to the ON position. Both steering levers must have the same amount of travel and must be level when released.

- 17.1 Measure from the hull to the steering lever in the OFF position.
- 17.2 Measure from the same position on the hull, to the steering lever in the fully ON position.

17.3 Subtract the small measurement from the large, the result is the steering lever travel.

17.4 If the steering lever travel is outside the limits the vehicle should not be driven and the fault reported immediately to the REME.

Steering test

18 The vehicle Commander/Inspector orders the driver to advance to reach 5 mile/h. He then orders the driver to operate his steering levers alternately to ensure that the steering brakes are operating.

Braking test

NOTES

- (1) This test must be carried out over a distance of 200 m plus.
- (2) This is a controlled halt not an emergency halt.

19 The vehicle Commander/Inspector selects a suitable area (normally the braking test area). The driver is then ordered to select gear range 3 to 6 and advance. When the vehicle has reached 15 mile/h the driver is ordered to 'Halt'.

FUEL CUT OFF TEST

20 Fuel cut off pedal operation to be checked with engine revs at 2000 rev/min or more and the gearbox in neutral, when operated engine should stop.

VENTILATION SYSTEM - TEST SEQUENCE

21 The ventilation system is to be tested using the test sequence procedure detailed in EMER Tkd Veh E 103/2 Chap 9, Page 93, Para 139.

CHAPTER 4
ARMAMENT MAINTENANCE INSTRUCTION BOOKLET

This Chapter has not been issued

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CHAPTER 5
COMMANDER'S FUNCTIONAL TEST (CFT)
CONTENTS

Para

- 1 Aim
- 2 Points concerning test
- 6 Recording

Table	Page
1 Commander's Functional Test (CFT)	2

Annex

- A Commander's Functional Test (CFT) completion certificate

AIM

1 The aim of the test is to enable commanders at all levels to know the general state of the vehicle, with particular attention to the following aspects:

1.1 Safety. Correct functioning and condition of those systems and devices which, if defective, could constitute a danger to crew and others, eg:

- 1.1.1 Brakes and steering.
- 1.1.2 Tracks and track pins/wheels and tyres.
- 1.1.3 Fire fighting equipment.
- 1.1.4 Fuel and lubrication system (leaks).

1.2 Performance. Vehicle and equipment to be fit for combat. This will include testing of the engine and radio equipment.

1.3 Condition of components. General condition such that normal performance may be expected in the future or that observation or repair is necessary.

1.4 Appearance. The appearance is of a standard that reflects the role, age and cost necessary for rectification.

POINTS CONCERNING TEST

NOTE

The only persons qualified to carry out this test are those that have qualified as a FV430 vehicle commander.

2 The test detailed in Table 1 will be carried out by qualified personnel nominated by the Sub-Unit Commander in those months when no REME inspection on AF G857 is due. Technical advice should be obtained from REME if required.

- 3 The testing time for a vehicle in average condition will be approximately two hours.
- 4 The test should be completed in the numerical sequence given in the procedure in order to prevent any unnecessary movement of the vehicle and crew.
- 5 The crew of the vehicle should be available throughout the test.

RECORDING

- 6 When the test is completed the date and details will be recorded in Section 4 of the AB 413. Faults requiring REME action will be reported using the form at Annex A, and rectified as soon as possible.

TABLE 1 COMMANDER'S FUNCTIONAL TEST (CFT)**NOTES**

- (1) Before Use items (Chap 1 - Table 1) are included in this table.
- (2) All Serials. Check for security, condition, operation. Clean, lubricate and top up, where applicable.

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
	FRONT AND UNDERSIDE		
1	Access plugs and plates.		
2	Steering unit access hatch and sealing strip.		
3	Steering unit oil level.	OMD 90	
4	All hoses and pipes inside front hatch.		
5	Engine compartment for any fluid leaks, drain if necessary.		
6	Clevis and split pins on steering linkages.		
7	Fire extinguisher and bracket.		
8	Track guards and securing studs.		
9	Lights and indicators.		
10	Smoke dischargers, test circuit.		See Chap 3, Para 14
11	Towing eyes		
	RIGHT HAND SIDE AND SUSPENSION		
12	Ventilation system filter unit and seals.		
13	All stowage brackets.		
14	External fire extinguisher handle.		
15	Final drive.		
	15.1 Sprocket ring securing nuts.		
	15.2 Hub nut and locking bar.		
	15.3 Oil level.	OEP 220	
	15.4 Labyrinth.	XG 279	

(continued)

TABLE 1 COMMANDER'S FUNCTIONAL TEST (CFT) (continued)

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
16	Rear idler and oil level.	OMD 90	
17	Track guide support rollers.	XG 279	
18	Axle arm bearings.	XG 279	
19	Road wheels.		
	19.1 Nut security.		
	19.2 Hub oil levels.	OMD 90	
20	Shock absorbers.		
21	Track.		See Chap 3, Para 7.
	21.1 Tension.		
	21.2 Tensioner arm bearings.	XG 279	
	21.3 Track pins.		
	21.4 Number of links.		Record in AB 413
	21.5 Track pads for wear and condition.		
	REAR		
22	Lights and indicators.		
23	External light socket.		
24	Stowage brackets and bins.		
25	Fire extinguisher and bracket.		
26	Trackguards and pad deflectors.		
27	Power tool and trailer sockets.		
28	Towing eyes.		
29	Rear door including clamps and sealing strip.		
	LEFT HAND SIDE AND SUSPENSION		
30	All stowage brackets.		
31	Final drive.		
	31.1 Sprocket ring securing nuts.		
	31.2 Hub nut and locking bar.		
	31.3 Oil level.	OEP 220	
	31.4 Labyrinth.	XG 279	
32	Rear idler oil level.	OMD 90	
33	Track guide support rollers.	XG 279	
34	Axle arm bearings.	XG 279	
35	Road wheels.		
	35.1 Nut security.		
	35.2 Hub oil levels.	OMD 90	

(continued)

TABLE 1 COMMANDER'S FUNCTIONAL TEST (CFT) (continued)

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
36	Shock absorbers.		
37	Track.		See Chap 3 Para 7.
	37.1 Track tension.		
	37.2 Track tensioner arm bearings.	XG 279	
	37.3 Track pins.		
	37.4 Number of links.		Record in AB 413.
	37.5 Track pads for wear and condition.		
38	Exhaust system.		
39	External fire extinguisher handle.		
	TOP OF VEHICLE		
40	Aerial bases.		
41	Batten box.		
42	Driver and commanders hatch.		
	42.1 Hinges and catches.	OMD 90	
	42.2 Seals.		
43	Fuel caps, filler filter and chains.		
44	Radiator matrix and cap.		
45	Coolant Specific Gravity (SG) and level.		See Warnings.
46	Air cleaners and restriction indicator.		
47	Fan hydraulic oil level.	OMD 90	
48	Generator hoist (FV 436 only).	OMD 90	
	CREW COMPARTMENT AND POWER PACK		
49	Driver, commander and operators.		
	49.1 Harness and seat.		
	49.2 Seat mechanisms.	OMD 90	
50	Security and cleanliness of vision equipment.		
51	Wiper units and screen wash level.	Diluted AL 11	See Warnings and Chap 3 Para 2.
52	Drivers and commanders, switches, gauges and warning lights.		
53	Horn.		
54	Fire extinguishers and brackets.		Check gauge on new type cylinders.

(continued)

TABLE 1 COMMANDER'S FUNCTIONAL TEST (CFT) (continued)

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
55	Throttle linkage and operation.		
56	Hand throttle.		
57	Gearbox and engine oil levels.	OMD 90	
58	Fuel Injection Pump (FIP) governor oil level.	OM 18	
59	Check gear range selector lever operation.		
60	Gearbox coupling (propshaft) universal joints.	XG 279	
61	Interior lights.		
62	Batteries.		See Warnings and Chap 3, Para 4 and 5.
	62.1 Condition and fluid levels.	Distilled water	
	62.2 Terminal posts.	PX 7	
	62.3 Breathers.		
	62.4 Security.		
63	Fire warning system.		
64	Distribution Link Box (DLB) warning light.		
65	Radio installation.		
66	Intercom.		
67	Mortar hatch handles and sealing.		
68	Internal stowage.		
	START ENGINE		
69	Drivers warning lights and gauges.		
70	Boiling vessel operation.		
71	Carry out air ventilation system test.		See Warnings and Chap 3 Para 21.
72	Emergency cut off pedal.		See Chap 3 Para 20.
	ROAD TEST		
73	Braking and steering.		See Chap 3, Para 16-19.
	NOTE		Inspection to be completed by REME.
	Check AB413 to see if the steering drum inspection is due in accordance with EMER Tkd Veh E109 Inst 42.		

(continued)

TABLE 1 COMMANDER'S FUNCTIONAL TEST (CFT) (continued)

Serial (1)	Maintenance task (2)	Product (3)	Remarks (4)
74	Check operation of radios whilst vehicle is moving.		
75	Listen to engine and running gear for unusual noises, knocks and vibrations.		
	RUNNING CHECKS - AFTER USE		
76	Carry out checks as Table 3.		
	GENERAL		
77	Tools and spares, clean lubricate and stow.		
78	Enter details in AB413 and report faults to REME using form at Annex A.		

COMMANDER'S FUNCTIONAL TEST (CFT) COMPLETION CERTIFICATE (continued)

Serial	Job description/fault	Responsibility	Remarks

CFT COMPLETION CERTIFICATE DISTRIBUTION

Coy Comd Signature and date stamp	Fitter Section Artificer Signature and date stamp
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Once all signatures are complete certificate to be retained in AB 413 until next AFG 857.

COMMENT(S) ON AESP*

To: DCCS
BFPO 794

From:
.....
.....
.....

Senders Reference	BIN Number	Date
AESP* Title:		
Chapter(s)/Instruction	Page(s)/Paragraph(s)	
If you require more space please use the reverse of this form or a separate piece of paper. Comment(s):		

Signed: Telephone No.:

Name(Capitals): Rank/Grade: Date:

✕

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To: From:
.....
.....
.....

Thank you for commenting on AESP*:

Your reference: Dated:

Action is being taken to :	Tick	Tick
Issue a revised/amended AESP*		Under investigation
Incorporate comment(s) in future amendments		No action required
Remarks		

Signed: Telephone No.:

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