

AMENDMENT RECORD

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Category/Sub-category			Information Level			
			1 User/ Operator	2 Unit Maintenance	3 Field Maintenance	4 Base Maintenance
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	*
	2	General Instructions, Special Technical Instructions and Servicing Instructions	*	821	821	*
	3	Service Engineered Modification Instructions (RAF only)	*	831	831	*

\*Category/Sub-category not published

#### Associated publications

4	Reference	Title
	JSP 341	Road Transport Regulations
	AP 3260 Book 1	Mechanical Transport Maintenance Regulations for the Royal Air Force
	AP 3260 Book 3	Mechanical Transport - General Orders
	AP 5061	Truck, Airfield Crash Rescue, Mk 2 and Mk 2A (Top Hamper)
	AP 5073A (UH)	Truck, Airfield Crash Rescue, Mk 2 (Chassis)
	AP 5073A Vol 1 & 6	Truck, Airfield Crash Rescue, Mk 2 (Chassis)
	AGAI Vol 4	Equipment and Stores - Periodic REME Examination
	AESP 2310-H-100-201	Car Utility, 4 x 4, Range Rover User Handbook (Chassis)
	AESP 2310-H-100-302	Car Utility, 4 x 4, Range Rover (Chassis All Variants)
	AESP 2310-H-100-721	Car Utility, 4 x 4, Range Rover (All Variants)
	AESP 2320-A-310-201	B Vehicle Corrosion Prevention

10/1/10

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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.

## RELATED AND ASSOCIATED PUBLICATIONS

### Related publications

3 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).

## MAINTENANCE SCHEDULE

### INTRODUCTION

- 1 This Maintenance Schedule is the authority for carrying out all scheduled maintenance tasks on the subject equipment and takes precedence over any other conflicting publication.
- 2 The person on a unit or formation with delegated responsibility for the specified equipment, who is also competent and experienced in that role, is responsible for ensuring that the operations detailed in this Maintenance Schedule are properly carried out. The operations are to be carried out by personnel who, through either professional trade training or an equipment specific formal training course, are appropriately qualified. The aforementioned responsible person may also order any operation to be carried out more frequently than specified, if conditions under which the equipment operated render it necessary.
- 3 Scheduled Maintenance is to be recorded in the appropriate equipment document in accordance with single service regulations.
- 4 Serial numbers left blank in the tables may be taken up by amendment action at a later date.

### DEFINITIONS

- 5 As far as this document is concerned, the following definitions apply:

5.1 **Examine.** Carry out a survey of the condition of an item without dismantling, **unless** specifically instructed to do so in the relevant task requirement. The condition of an item may be impaired by the following:

- 5.1.1 Insecurity of attachment.
- 5.1.2 Cracks or fractures.
- 5.1.3 Corrosion, contamination or deterioration.
- 5.1.4 Distortion.
- 5.1.5 Loose or missing fasteners.
- 5.1.6 Chafing, fraying, scoring or wear.
- 5.1.7 Faulty or broken locking devices.
- 5.1.8 Loose clips or packing, obstruction of, or leakage from pipelines.
- 5.1.9 Discoloration due to overheating or leakage of fluids.
- 5.1.10 Damage due to external sources.

5.2 **Check.** Make a comparison of measurement of time, pressure, temperature, resistance, dimension or other quantity, with a known figure.

5.3 **Operate.** As far as possible, ascertain that a component or system functions correctly without the use of test equipment or reference to measurement.

5.4 **Replenish.** Refill a container to a predetermined level, pressure or quantity. This includes any necessary cleaning of orifices, examination of caps, covers, gaskets and washers, renewal of locking devices and clearing of vents.

5.5 **Replace.** Remove an item and then fit a new or reconditioned item.

**WARNINGS, CAUTIONS AND MAINTENANCE NOTES**

6 Before any maintenance task is carried out, the WARNINGS, CAUTIONS and Maintenance Notes preceding the appropriate table must be read and understood.

**MAINTENANCE INTERVALS AND AREAS OF RESPONSIBILITY****NOTE**

The information contained in the tables is equipment specific and should reflect the manufacturer's recommendations and equipment usage.

7 Table 4 - Action on Receipt. The maintenance detailed in Table 4 covers the action taken when the equipment arrives on a unit. These operations will normally be of a once only nature, eg the recording of lifting equipment with the appropriate test authority, actions that are necessary to be undertaken before the equipment is put into service or actions that are only required during the running in period. The maintenance detailed in Table 4 maintenance must be carried out by appropriately trained personnel, as described in Para 2.

8 Table 5 - Out of Phase Maintenance. The maintenance tasks detailed in Table 5 covers tasks that do not fall into line with the time/usage interval requirements of Table 6 or 7. The maintenance detailed in Table 5 maintenance must be carried out by appropriately trained personnel, as described in Para 2.

9 Table 6 - Driver/Operator Maintenance. The maintenance tasks detailed in Table 6, Maintenance Intervals A, B, C and D are to be carried out by appropriately trained personnel, as described in Para 2, as follows:

- 9.1 A - Daily before use (only on days used).
- 9.2 B - Daily after use (after the equipment has been operated).
- 9.3 C - Weekly, whether the equipment is used or not.
- 9.4 D - Not applicable.

10 Table 7 - Time/Usage Maintenance. The maintenance detailed in Table 7, Maintenance Interval 1st, A, B, C and D must be carried out by appropriately trained personnel, as detailed in Para 2, at the following intervals:

- 10.1 1st - After the first 1,000 miles (1,500 km) on new vehicles or reconditioned major components.
- 10.2 A - Every 6000 miles (10,000 km) or 6 months, whichever occurs first.
- 10.3 B - Every 12,000 miles (20,000 km) or 12 months, whichever occurs first.
- 10.4 C - Not applicable.
- 10.5 D - Contains the Area Maintenance indicator which may be used, at the discretion of the responsible person identified at Para 2, to carry out Area Maintenance at the appropriate time/usage intervals.

11 Table 8 - Out of Use Maintenance. The Out of Use Maintenance in Table 8 is to be carried out in accordance with single service regulations.



**TABLE 1 EQUIPMENT APPLICABILITY**

<b>Serial (1)</b>	<b>Equipment Asset Code (2)</b>	<b>Designation (3)</b>	<b>Contract Numbers (4)</b>
1	1963-4100	Truck, Fire Fighting, Airfield Crash Rescue, 2 Tonne, 6 X 4, Mk 2 Range Rover.	22a/313
2	1963-4101	Truck, Fire Fighting, Airfield Crash Rescue, 2 Tonne, 6 X 4, 4 Door, Mk 2A, Range Rover.	22b/925
3	1964-4100	Truck, Fire Fighting, Airfield Crash Rescue (Winterised) 2 Tonne, 6 X 4, Range Rover Mk 2.	22a/313
4	1964-4101	Truck, Fire Fighting, Airfield Crash Rescue, (Winterised), 2 Tonne, 6 X 4, 4 Door, Range Rover Mk 2A.	

**TABLE 2 FUELS, LUBRICANTS AND ASSOCIATED PRODUCTS****NOTES**

(1) The products listed below are to be used on this equipment. Alternative products must not be used without the approval of an appropriate equipment support manager

(2) Oil changes at the -15 deg C point shall only be made on the advice of the responsible person identified at Para 2.

(3) The capacities listed are to be used as a guide only. A physical check is to be carried out to ensure that all fluid levels are correct. This check should be carried out with the equipment unladen and standing on level ground whenever possible.

Serial (1)	Assembly (2)	Product		Capacity	
		Above -15 deg C (3)	Below -15 deg C (4)	Litres (5)	Pints (6)
	<b>TACR Mk 2 VARIANTS</b>				
1	Engine (including filter).	OMD 90	OMD 30	5.68	10
2	Main gearbox.	OMD 90	OMD 90	2.6	4.5
3	Transfer gearbox.	OEP 220	OEP 38	3.1	5.5
4	Front axle differential.	OEP 220	OEP 38	1.7	3
5	Rear axle differential.	OEP 220	OEP 38	1.66	2.75
6	Swivel pin housings (each).	OEP 220	OEP 38	0.25	0.50
7	Steering box.	OEP 220	OEP 38	0.43	0.75
8	Power steering reservoir.	OMD 90	OMD 90	1.25	2.2
9	Brake/clutch reservoirs.	OX 8	OX 8	-	-
10	Cooling system (for RAF AP 3260, Book 3 Lft A9 refers).	AL 39/Water mix		-	-
12	Windscreen washers (for RAF AP 3260, Book 3, Lft A69 refers).	Windscreen washer fluid/AL 11/water mix		-	-
13	Specialist water pump.	OMD 90	OMD 90	1.14	2
14	Battery terminals.	PX 7	PX 7	-	-
15	General oilcan lubrication.	OMD 90	OMD 90	-	-
16	General greasing.	XG 279	XG 279	-	-
17	Tank outlet control valve.	ZX 38	ZX 38	-	-
18	Pump drive bearing housing (2 points).	XG 279	XG 279	-	-
19	PTO drive shaft (2 points).	XG 279	XG 279	-	-
20	Fuel tank.	Civgas	Civgas	86	19 gal
21					
22					
23					

(continued)

**TABLE 2 FUELS, LUBRICANTS AND ASSOCIATED PRODUCTS (continued)**

Serial (1)	Assembly (2)	Product		Capacity	
		Above -15 deg C (3)	Below -15 deg C (4)	Litres (5)	Pints (6)
	<b>TACR Mk 2A VARIANTS</b>				
24	Engine (including filter).	OMD 90	OMD 30	5.68	10
25	Main gearbox.	OMD 90	OMD 90	2.7	4.7
26	Transfer gearbox.	OEP 220	OEP 38	2.5	4.4
27	Front axle differential.	OEP 220	OEP 38	1.7	3.0
28	Rear axle differential.	OEP 220	OEP 38	1.7	3.0
29	Swivel pin housings (each).	OEP 220	OEP 38	0.35	0.6
30	Steering box and reservoir fluid.	OMD 90	OMD 90	2.9	5.0
31	Brake/clutch reservoirs.	OX 8	OX 8	-	-
32	Cooling system (for RAF AP 3260, Book 3, Lft A9 refers).	AL 39/water mix		-	-
33	Windscreen washers (for RAF AP 3260, Book 3, Lft A69 refers).	Windscreen washer fluid/AL 11/water mix		-	-
34	Fuel tank.	4 Star	4 Star	80	17.5 gal
35	Specialist water pump.	OEP 38	OEP 38	0.75	1.3
36	Battery terminals.	PX 7	PX 7	-	-
37	General oilcan lubrication.	OMD 90	OMD 90	-	-
38	General greasing.	XG 279	XG 279	-	-
39	Tank outlet control valve.	ZX 38	ZX 38	-	-
40	Pump drive bearing housing.	XG 279	XG 279	-	-
41	PTO drive shaft.	XG 279	XG 279	-	-

TABLE 3 EQUIPMENT DATA

Serial (1)	Item (2)	Detail (3)
	<b>TACR Mk 2 VARIANTS ADJUSTMENTS</b>	
1	Engine drive belts:	
	1.1 Power steering belt.	4 to 6 mm (0.19 to 0.25 in.) deflection. New belt: Tension to 380 to 420 Nm (85 to 95 lbf). Run engine at 1500 rpm for 3 to 5 minutes and recheck. If necessary readjust to 335 to 380 Nm (75 to 85 lbf).
	1.2 Alternator belt.	Run in belt: tension to 335 to 380 Nm (75 to 85 lbf).
	1.3 Fan belt.	New belt: Tension to 400 to 445 Nm (90 to 100 lbf). Run engine at 1500 rpm for 3 to 5 minutes and recheck. If necessary readjust to 355 to 400 Nm (80 to 90 lbf). Run in belt: Tension to 355 to 400 Nm (80 to 90 lbf).
2	Ignition timing.	3 degrees BTDC.
3	Spark plug gap.	0.65 mm (0.025 in.).
4	Distributor points gap.	0.35 to 0.40 mm (0.014 to 0.016 in.).
5	Dwell angle.	26 to 28 degrees.
6	Idling speed.	700 to 750 rev/min.
7	Exhaust CO at idle.	4.5% maximum.
8	Front wheel alignment.	1.2 to 2.4 mm (0.046 to 0.093 in.) Toe out.
9	Axle hub end float.	0.05 to 0.1 mm (0.002 to 0.004 in.).
10	Steering lock stops.	40.5 mm (1.59 in.).
11		
12		
13		
	<b>TYRES</b>	
14	Pressures:	
	14.1 Front axle.	2.1 bar (30 lbf/in <sup>2</sup> )
	14.2 Mid axle.	2.8 bar (40 lbf/in <sup>2</sup> )
	14.3 Rear axle.	2.8 bar (40 lbf/in <sup>2</sup> )
15		
	<b>TORQUE SETTINGS</b>	
16	Cylinder head.	90 Nm (66 lbf ft)
17	Wheel nuts.	116 Nm (85 lbf ft)
18		
19		

(continued)

TABLE 3 EQUIPMENT DATA (continued)

Serial (1)	Item (2)	Detail (3)
	<b>TACR Mk 2A VARIANTS ADJUSTMENTS</b>	
20	Engine drive belts:	
	20.1 Power steering belt.	4 to 6mm (0.19 to 0.25 in.) deflection. New belt: Tension to 380 to 420 Nm (85 to 95 lbf). Run engine at 1500 rpm for 3 to 5 minutes and recheck. If necessary readjust to 335 to 380 Nm (75 to 85 lbf). Run in belt: tension to 335 to 380 Nm (75 to 85 lbf).
	20.2 Alternator belt.	
	20.3 Fan belt.	New belt: Tension to 400 to 445 Nm (90 to 100 lbf). Run engine at 1500 rpm for 3 to 5 minutes and recheck. If necessary readjust to 355 to 400 Nm (80 to 90 lbf). Run in belt: Tension to 355 to 400 Nm (80 to 90 lbf).
21	Ignition timing.	6 degrees BTDC at 650 to 750 rev/min (vacuum pipe disconnected).
22	Ignition timing (dynamic/static) (fuel injection).	TDC $\pm$ 1 degree.
23	Spark plug gap (N9YC).	0.70 to 0.80 mm (0.030 to 0.032 in.)
24	Distributor air gap.	0.20 to 0.35 mm (0.008 to 0.014 in.)
25	Idling speed.	650 to 750 rev/min (engine hot)
26	Idling speed (fuel injection).	70 to 800 rev/min
27	Exhaust CO at idle (Pulsair connected).	0.5 to 2.5%
28	Exhaust CO at idle (fuel injection).	0.5 to 1.0% max
29	Front wheel alignment.	1.2 to 2.44 mm (0.046 to 0.093 in.)
30	Axle hub end float.	0.05 to 0.1 mm (0.002 to 0.004 in.)
31	Steering lock stops.	40.5 mm (1.59 in.)
32		
33		
	<b>TYRES</b>	
34	Size.	Michelin M + S 205 R 16
35	Pressures:	
	35.1 Front axle.	2.1 bar (30 lbf/in <sup>2</sup> )
	35.2 Mid axle.	2.8 bar (40 lbf/in <sup>2</sup> )
	35.3 Rear axle.	2.8 bar (40 lbf/in <sup>2</sup> )
36		
37		
38		

(continued)

TABLE 3 EQUIPMENT DATA (continued)

Serial (1)	Item (2)	Detail (3)
	<b>TORQUE SETTINGS</b>	
39	Cylinder head:	
	39.1 Outer row.	54 to 61 Nm (40 to 45 lbf ft)
	39.2 Centre row.	88 to 95 Nm (65 to 70 lbf ft)
	39.3 Inner row.	88 to 95 Nm (65 to 70 lbf ft)
40	Wheel nuts.	102 to 116 Nm (75 to 85 lbf ft)

**TABLE 4 ACTION ON RECEIPT**

Serial (1)	Action (2)
	NOT TAKEN UP

**TABLE 5 OUT OF PHASE MAINTENANCE**

The following WARNINGS, CAUTIONS and Maintenance Notes must be read and understood before commencing these maintenance tasks.

**WARNING**

**PERSONAL INJURY. ALL PERSONNEL ARE TO CONSULT THEIR CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH (COSHH) REGULATIONS BEFORE CARRYING OUT ANY MAINTENANCE OR REPLENISHMENT ACTIVITY ON THIS VEHICLE AND WEAR THE APPROPRIATE PROTECTIVE CLOTHING/BARRIER CREAM.**

Serial (1)	Action (2)	Interval (3)
1	Drain and replenish oil in the following components:  1.1 Main gearbox (clean extension case filter). 1.2 Transfer box. 1.3 Front axle. 1.4 Rear axle (middle). 1.5 Swivel pin housings. 1.6 Clutch and brake fluid systems.	Every 24 000 miles or 2 years, whichever occurs first.
2	Plenum chamber: Clean butterfly housing.	Every 24 000 miles or 2 years, whichever occurs first.
3	Rear axle (3rd axle) hub bearings: Remove, clean, examine, lubricate, refit and adjust.	Every 24 000 miles or 2 years, whichever occurs first.





**TABLE 6 DRIVER/OPERATOR MAINTENANCE**

The following WARNINGS, CAUTIONS and Maintenance Notes must be read and understood before commencing these maintenance tasks.

**WARNINGS**

- (1) **PERSONAL INJURY. ALL PERSONNEL ARE TO CONSULT THEIR CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH (COSH) REGULATIONS BEFORE CARRYING OUT ANY MAINTENANCE OR REPLENISHMENT ACTIVITY ON THIS VEHICLE AND WEAR THE APPROPRIATE PROTECTIVE CLOTHING/BARRIER CREAM.**
- (2) **PERSONAL INJURY. THE VOLTAGES USED IN THIS EQUIPMENT CAN ENDANGER LIFE.**
- (3) **PERSONAL INJURY. WHEN FILLING WITH FLUORINATED FOAM LIQUID ENSURE THAT ALL PERSONNEL ARE STANDING UPWIND.**
- (4) **PERSONAL INJURY. FLUORINATED FOAM LIQUID SPLASHING ON UNPROTECTED PARTS OF THE BODY SHOULD BE IMMEDIATELY WASHED OFF WITH CLEAN WATER.**
- (5) **PERSONAL INJURY. SPACE HEATERS MUST NOT BE USED IN ENCLOSED SPACES, SUCH AS BAYS OR GARAGES, SO AS TO AVOID PERSONNEL BEING OVERCOME BY TOXIC FUMES.**

**CAUTIONS**

- (1) **EQUIPMENT DAMAGE. The handbrake acts on the transmission, not on the rear wheels. When jacking the vehicle, apply the handbrake, engage first gear and ensure the wheels are chocked.**
- (2) **EQUIPMENT DAMAGE. Do not bottom-load the extinguishant tank.**
- (3) **EQUIPMENT DAMAGE. Full frost precautions must be observed when the vehicle is not connected to the mains.**

**MAINTENANCE NOTE**

After dispensing extinguishant, flush system with clean water, ensuring that all valves and drain points function correctly. When flushing is complete, drain system, close tank valve and all drain points then replenish tank.

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval			
				A (5)	B (6)	C (7)	D (8)
1	Examine the vehicle for signs of damage.			X	X		
2	Ensure that the vehicle has sufficient fuel, oil and coolant for the journey or task.		See Table 2	X			
3	Windscreen and windows: Examine.			X			
4	Windscreen washer reservoir: Check level and top up as necessary.		See Table 2	X			
5	Seats and seat belts: Examine and operate.			X			
6	Rear view mirrors: Examine.			X			

(continued)

TABLE 6 DRIVER/OPERATOR MAINTENANCE (continued)

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval			
				A (5)	B (6)	C (7)	D (8)
7	Door locks, window controls, safety and bonnet catches: Examine.			X			
8	Tyres: Examine and check tread depth and pressures. (See Table 3).			X			
9	Wheel nuts: Visually examine for security.			X			
10	Wheel nuts: Check torque loading. (See Table 3).					X	
11	Fire extinguishers: Examine.			X			
12	Registration plates and other markings: Examine.			X			
13	Towing hitches: Examine, ensure that locking pins are in place, attached by securing chains and the locking latch is free.			X			
14	Brakes and steering: Examine and ensure correct operation.			X			
15	Differential lock: Operate.			X			
16	Gear selector: Operate.			X			
17	High/low ratio selector: Operate.			X			
18	Alternator, water pump and power steering belts: Examine.					X	
19	Loose equipment: Examine and ensure correct stowage.			X			
20	Brake/clutch fluid reservoirs: Check level and top up as necessary.		OX 8	X			
21	Power steering fluid reservoir: Check level and top up as necessary.		OMD 90	X			
22	Fuel cap, seal and locating lugs: Examine for damage and security of attachment. If the seal, cap or lugs are damaged, report the vehicle unserviceable.					X	
23							
24							
	<b>CHASSIS ELECTRICAL EQUIPMENT</b>						
25	Lamps, horn, windscreen washers and wipers, direction indicators and hazard flashers, rear fogs, reversing lamps, heaters and demisters, instruments and gauges: Ensure correct operation.			X			
26	Battery: Examine, check electrolyte level and top up as necessary.		De-min water			X	
27	Reflectors: Examine.			X			

(continued)

**TABLE 6 DRIVER/OPERATOR MAINTENANCE (continued)**

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval			
				A (5)	B (6)	C (7)	D (8)
28	Front searchlights, two-tone horns, blue occulting beacon, grille mounted repeater lamps, Francis searchlight, site lamps, PTO/Engine speed controllers, stowage/compartments/crew lamps: Operate and ensure correct operation.			X			
29	Fuel burning heater: Operate.			X		X	
30							
31							
	<b>MAINS ELECTRICAL EQUIPMENT</b>						
32	Electrical supply: Ensure that the mains electrical power is switched OFF and the supply lead disconnected.			X			
33	Visually examine all exposed cables, fittings, plugs and sockets for damage and security of attachment.			X			
34	Examine the plug and socket, ensuring that the contact surfaces are clean, free from oxidization and are not burnt. Pay particular attention to the insulation between the pins on the snatch plug and the contacts on the snatch socket. Items found to be cracked, burnt, distorted or defective in any way are to be replaced by a competent tradesman.			X			
35	Connect mains electrical cable to vehicle.				X		
36	Earth Leakage Circuit Breaker (ELCB) where fitted: Examine and operate as follows:  36.1 Mains electrical power: Switch ON.  36.2 ELCB: Switch ON. If the ELCB cannot be switched ON a fault exists so place the vehicle unserviceable.  36.3 ELCB: Push test button/bar ensuring that the ELCB trips. If ELCB fails to trip a fault exists so place the vehicle unserviceable.  36.4 ELCB: Reset.			X			
	<b>NOTE</b>  Additional check for vehicles supplied by DOE/PSA monitored earth plinth: Withdraw input socket ensuring that the supply plinth drops out and its power ON lamp extinguishes. If plinth fails to trip, inform DOE/PSA. Reconnect socket to vehicle and switch ON.						

(continued)

TABLE 6 DRIVER/OPERATOR MAINTENANCE (continued)

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval			
				A (5)	B (6)	C (7)	D (8)
37	36.5 Mains electrical apparatus: Operate. If ELCB trips, disconnect mains input lead and place vehicle unserviceable.						
38	36.6 Mains electrical apparatus: Operate. If ELCB trips, disconnect mains input lead and place vehicle unserviceable.						
	<b>SPECIALIST EQUIPMENT</b>						
39	Body: Examine, particularly for security of fittings, attachments and damage.			X	X		
40	Shutter doors: Examine and operate.			X	X		
41	Extinguishant tank: Examine for leaks and check fluid level.			X	X		
42	Valves and blanking caps: Examine.			X	X		
43	Ancillary and rescue equipment: Examine and ensure equipment is complete and serviceable.			X	X		
44	Pump controls and gauges: Examine and operate.			X			
45	Delivery hoses: Examine.			X	X		
46	Foam producing nozzles and stowage: Examine.			X	X		
47	Foam producing system: Flush. (See Maintenance Note 1)				X		
48	PTO: Examine and operate.			X			
49	Tank pump valve: Lubricate.		ZX 38		X	X	
50	Hand throttle: Examine and operate.			X			
51							
52							
53							
	<b>WINTERIZATION EQUIPMENT</b>						
54	Window blinds: Examine and operate.			X			
55	Warm air ducts and pipework: Examine.			X			
56	Fuel burning heater: Operate for at least 5 minutes.					X	
57	Fuel burning heater fuel tank: Check fuel level and top up as necessary.			X		X	
58	Start pilot: Examine.			X			

(continued)

**TABLE 6 DRIVER/OPERATOR MAINTENANCE (continued)**

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval			
				A (5)	B (6)	C (7)	D (8)
59							
60							
61							
62							
63	ADP658/FMT658A/FMT1001/FMT1001A (Duty Movement Authorisation/Driver Tasking) as appropriate: Sign.			X			
64	CES equipment: Examine for serviceability and correct stowage.					X	
65	Vehicle: Visually examine for road worthiness and in particular wheels, tyres and external accessories.					X	
66	Static functional test: Carry out to confirm the serviceability of all functions and particularly door-locks, window winders, seat adjusters, seat belts, tow hitches and accessories.					X	
67	Mobile functional test: Carry out a short mobile test to confirm the serviceability of all functions of starting, driving through the gears and stopping the vehicle.					X	
68	Specialist equipment test: Carry out to ensure serviceability of all fire fighting and rescue equipment.					X	
69							
70							
71	AF G1084A (Worksheet): Sign.					X	



**TABLE 7. TIME/USAGE MAINTENANCE**

The following WARNINGS, CAUTIONS and Maintenance Notes must be read and understood before commencing these maintenance tasks.

**WARNINGS**

- (1) **PE PERSONAL INJURY. ALL PERSONNEL ARE TO CONSULT THEIR CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH (COSHH) REGULATIONS BEFORE CARRYING OUT ANY MAINTENANCE OR REPLENISHMENT ACTIVITY ON THIS VEHICLE AND WEAR THE APPROPRIATE PROTECTIVE CLOTHING/BARRIER CREAM.**
- (2) **PERSONAL INJURY. THE VOLTAGES ON THIS EQUIPMENT CAN ENDANGER HUMAN LIFE.**
- (3) **PERSONAL INJURY. DO NOT USE AN AIRLINE TO CLEAR BRAKE DUST. BRAKE LININGS MAY CONTAIN ASBESTOS.**
- (4) **PERSONAL INJURY. WHEN FILLING WITH FLUORINATED FOAM LIQUID ENSURE THAT ALL PERSONNEL ARE STANDING UPWIND.**
- (5) **PERSONAL INJURY. FLUORINATED FOAM LIQUID SPLASHING ON UNPROTECTED PARTS OF THE BODY SHOULD BE WASHED OFF WITH CLEAN WATER.**
- (6) **PERSONAL INJURY. THE REAR SUSPENSION LEVELLING UNITS ARE PRESSURISED AND MUST NOT BE DISMANTLED. REPAIR IS BY REPLACEMENT ONLY.**
- (7) **PERSONAL INJURY. DO NOT USE COMPRESSED AIR TO CLEAN FLAME TRAPS OR FUEL FILTERS.**
- (8) **PERSONAL INJURY. DO NOT SHOCK LOAD THE STEERING COLUMN.**
- (9) **TOXIC FUMES. SPACE HEATERS MUST NOT BE USED IN ENCLOSED SPACES, SUCH AS BAYS OR GARAGES, SO AS TO AVOID PERSONNEL BEING OVERCOME BY TOXIC FUMES.**

**CAUTIONS**

- (1) **EQUIPMENT DAMAGE. The handbrake acts on the transmission, not on the rear wheels. When jacking the vehicle, apply the handbrake, engage first gear and ensure the wheels are chocked**
- (2) **EQUIPMENT DAMAGE. Do not bottom-load the extinguishant tank.**
- (3) **EQUIPMENT DAMAGE. Full frost precautions must be observed when the vehicle is not connected to the mains.**
- (4) **EQUIPMENT DAMAGE. When two wheel roller brake tests are carried out, the centre differential must be disengaged and the transfer box must be in neutral. With one axle stationary, the axle being tested must not be revolved in excess of 5 km/h (3 mph).**
- (5) **EQUIPMENT DAMAGE. When checking reluctor air gap non-ferrous feeler gauges must be used.**

(continued)

TABLE 7 TIME/USAGE MAINTENANCE (continued)

## MAINTENANCE NOTES

- (1) When assembling propeller shafts, ensure alignment marks coincide.
- (2) Electric door locks are fitted to this vehicle. These locks have been rendered INOPERATIVE. DO NOT REPLACE THE FUSE. (Mk 2A only).
- (3) Conductor securing screws (in mains plug) are to be secured using Loctite 932 (33H 8030 99 224 9389).
- (4) Insulation testing of 240V equipment is to be carried out at 500V. The insulation resistance is not to be less than 1 Megohm.

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval				
				1st (5)	A (6)	B (7)	C (8)	D (9)
	<b>ENGINE</b>							
1	Engine sump: Drain oil, replace filter element and replenish.		OMD 90	X	X	X		1
2	Spark plugs: Remove, clean, examine and check adjustment. Replace as necessary.				X	X		1
3	Distributor CB points: Examine and check adjustment. Replace as required. (Mk 2 only)			X	X	X		1
4	Distributor air gap: Check. (Mk 2A only)			X		X		1
5	Distributor cap, ignition wiring and HT leads: Examine.			X		X		1
6	Distributor: Lubricate (not cam wipe pad).		OMD 90	X	X	X		1
7	Ignition module: Examine.			X		X		1
8	Coil: Examine. (Mk 2 only)			X		X		1
9	Coil and amplifier: Examine. (Mk 2A only)			X		X		1
10	Air cleaner: Examine and renew filter elements.					X		1
11	Air cleaner dump valve: Clean or renew as necessary.			X		X		1
12	Fuel system: Examine.			X		X		1
13	Carburettors (if fitted): Examine and clean.			X		X		1
14	Carburettor piston dampers (if fitted): Check oil level and top up as necessary.		OMD 90	X	X	X		1
15	Fuel injection system (if fitted): Examine.			X		X		1
16	Fuel pump: Examine.			X		X		1
17	Fuel line filter (if fitted): Replace.					X		1
18	Fuel filter: Examine and renew element.					X		1
19	Fuel pump filter: Clean.					X		1
20	Engine flame traps: Clean or renew as required.					X		1

(continued)



**TABLE 7 TIME/USAGE MAINTENANCE (continued)**

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval				
				1st (5)	A (6)	B (7)	C (8)	D (9)
21	Crankcase air intake filter (if fitted): Examine and replace if required.					X		1
22	Crankcase breather system: Examine.					X		1
23	Pulsair system: Examine and ensure check valves are serviceable (Mk 2A only)					X		1
24	Exhaust system: Examine.			X		X		1
25	Water pump, power steering and alternator belts: Examine.			X	X	X		1
26	Cooling system: Examine.			X		X		1
27	Engine controls: Examine, operate and lubricate.		OMD 90	X	X	X		1
28	External nuts, setscrews and mountings: Check for security of attachment.			X		X		1
29	Flywheel housing: Drain (only if wading plug fitted).			X	X	X		1
30	Dwell angle: Check (Mk 2 only).			X	X	X		1
31	Ignition timing: Check.			X		X		1
32	Engine idle speed: Check.			X		X		1
33	CO emission: Check.			X		X		1
34								
35								
36								
	<b>STEERING AND SUSPENSION</b>							
37	Power steering system: Examine for leaks and check hydraulic pipes and unions for chafing and corrosion.			X		X		2
38	Power steering pump assembly: Examine.			X		X		2
39	Power steering box and attachments: Examine.			X		X		2
40	Power steering reservoir: Drain and replenish.		OMD 90	X				2
41	Power steering reservoir: Check oil level and top up as necessary.		OMD 90		X	X		2
42	Steering box (manual): Examine and check oil level.		OEP 220	X	X	X		2
43	Steering wheel, column and drive coupling: Examine.			X		X		2
44	Steering linkage and ball joints: Examine for security of steering joints and gaiters.			X	X	X		2

(continued)

TABLE 7 TIME/USAGE MAINTENANCE (continued)

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval				
				1st (5)	A (6)	B (7)	C (8)	D (9)
45	Steering swivel pin housings: Examine, check oil levels and top up as necessary.		OEP 220	X	X	X		2
46	Steering lock stops: Check alignment.			X		X		2
47	Road springs, mountings and attachments: Examine.			X		X		2
48	Radius arms, panhard rod, radius arm suspension links, bushes and mountings: Examine.			X		X		2
49	Shock absorbers: Examine.			X		X		2
50	Suspension levelling units: Examine.			X		X		2
51								
52								
53								
54	Front wheel alignment: Check and adjust as necessary. (See Table 3)			X		X		2
	<b>TRANSMISSION</b>							
55	Clutch pedal and linkage: Examine.			X		X		3
56	Clutch master and slave cylinders: Examine.			X		X		3
57	Clutch hydraulic reservoir: Check oil level and top up as necessary.		OX 8	X	X	X		3
58	Gearbox: Examine.			X		X		3
59	Gearbox: Drain and replenish.		OMD 90	X				3
60	Gearbox: Check oil level and top up as necessary.		OMD 90		X	X		3
61	Transfer gearbox: Examine.			X		X		3
62	Transfer gearbox: Drain and replenish.		OEP 220	X				3
63	Transfer gearbox: Check oil level and top up as necessary.		OEP 220		X	X		3
64	Main and transfer gearbox controls: Examine and operate.			X		X		3
65	Differential lock: Examine and operate.			X		X		3
66	Propeller shafts: Examine and lubricate. (See Maintenance Note 1)		XG 279	X	X	X		3
67	Axles: Examine.			X		X		3
68	Drive axles: Drain and replenish.		OEP 220	X				3
69	Drive axles: Check oil level and replenish as necessary.		OEP 220		X	X		3

(continued)

TABLE 7 TIME/USAGE MAINTENANCE (continued)

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval				
				1st (5)	A (6)	B (7)	C (8)	D (9)
70	Axle breathers: Examine.			X		X		3
71	Axle hubs: Check for excessive end float and freedom of rotation with no perceptible roughness, adjust as required. (VM)			X		X		3
72	Road wheels: Examine, particularly around stud holes for cracking.			X		X		3
73	Wheel nuts: Check torque loading.			X	X	X		3
74	Tyres: Examine, particularly for correct type. Check tyre pressures.			X	X	X		3
75								
76								
77								
	<b>BRAKES</b>							
78	Brake callipers, pads, discs and mountings: Examine.			X	X	X		4
79	Brake pipes, hose, connections and attachments: Examine for chafing, leaks and corrosion.			X	X	X		4
80	Brake master cylinder: Examine.			X		X		4
81	Brake fluid reservoir: Check fluid level and top up as necessary.		OX 8	X	X	X		4
82	Brake servo and hose: Examine.			X		X		4
83	Handbrake: Examine and adjust as necessary. Lubricate linkage.		OMD 90	X	X	X		4
84	Brake pressure reducing valve: Examine.			X		X		4
85	Mechanical components including linkages, rods and attachments: Examine.			X		X		4
86	Brake system: Operate.			X	X	X		4
87								
88								
89								
90	Brake test (NCO MT Technician only): Carry out in accordance with AP 3260, Book 3, Lft A64). (VM)			X		X		4
	<b>CHASSIS ELECTRICAL EQUIPMENT</b>							
91	Batteries: Clean terminals and smear with protective grease. Check electrolyte level and top up as necessary.		PX7/De-min water	X	X	X		5
92	Battery stowage areas: Examine and restore surface finish.			X		X		5

(continued)

TABLE 7 TIME/USAGE MAINTENANCE (continued)

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval				
				1st (5)	A (6)	B (7)	C (8)	D (9)
93	Starter motor: Examine especially for security of attachment.			X		X		5
94	Alternator: Examine for security of attachment and check output voltage. (VM/VE)			X		X		5
95	Electronic control unit: Examine (fuel injection variant)			X		X		5
96	Electrical wiring: Examine for signs of chafing, burning or other damage and security of attachment.			X		X		5
97	Lamps, horn, windscreen washers and wipers, direction indicators and hazard flashers: Examine for damage, security of attachment and ensure correct operation.			X		X		5
98	Instruments and gauges: Examine and operate.			X		X		5
99	Heaters and demisters: Examine and operate.			X		X		5
100	Reflectors: Examine.			X		X		5
101	Switches and warning devices: Examine and operate.			X		X		5
102	Relays and electrical accessories: Examine and operate.			X		X		5
103	Fuses and fuse holders: Examine and check for correct rating.			X		X		5
104	Door locks: Ensure they are INOPERATIVE. (See Maintenance Note 2)			X	X	X		5
105	Engine/pump RPM limiters: Examine.			X		X		5
106								
107								
108	Headlight alignment: Check and adjust (for RAF AP 3260, Book 3, Lft A13 refers).			X		X		5
	<b>MAINS ELECTRICAL EQUIPMENT</b>							
109	Mains electrical supply: Ensure current is switched OFF and the supply lead disconnected.			X	X	X		5
110	Cab heater, battery charger, coolant heater, tank heater and valve heating blanket: Examine. (On winterised vehicles include pump blankets front and rear and foam tank outlet tape).			X	X	X		5

(continued)

TABLE 7 TIME/USAGE MAINTENANCE (continued)

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval				
				1st (5)	A (6)	B (7)	C (8)	D (9)
111	Mains plug: Examine and ensure security of conductor securing screws. (See Maintenance Note 3)			X	X	X		5
112	Mains equipment: Carry out continuity and insulation checks of wiring and individual mains supplied apparatus. (See Maintenance Note 4)			X	X	X		5
113	Fuses and fuse holders: Examine and ensure correct rating.			X	X	X		5
114	Earth Leakage Circuit Breaker (ELCB) where fitted: Examine and operate as follows: 114.1 Mains electrical lead: Reconnect. 114.2 ELCB: Switch ON. If ELCB cannot be switched ON, a fault exists which must be rectified. 114.3 ELCB: Push test button/bar ensuring that the ELCB trips. If the ELCB fails to trip switch OFF mains supply and correct defect. 114.4 ELCB: Reset. NOTE Additional check for vehicles supplied by PSA/DOE monitored earth plinth: Withdraw socket ensuring plinth trips and power ON lamp extinguishes. If PSA/DOE plinth fails to trip, inform PSA/DOE.			X	X	X		5
115	Mains equipment: Carry out a functional check. If ELCB trips, rectify defect.			X	X	X		5
116								
117	<b>TOP HAMPER ELECTRICAL</b>							
118	Front searchlights: Examine and operate.			X		X		5
119	Two tone horns: Examine and operate.			X		X		5
120	Blue occulting beacon: Examine and operate.			X		X		5
121	Blue repeater lamps (grille mounted): Examine and operate.			X		X		5
122	Francis searchlight and extension leads: Examine and operate.			X		X		5
123	Site lamp (extendable): Examine and operate.			X		X		5
124	PTO/Engine speed control units: Examine and operate.			X		X		5

(continued)

TABLE 7 TIME/USAGE MAINTENANCE (continued)

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval				
				1st (5)	A (6)	B (7)	C (8)	D (9)
125	Stowage, compartment and crew lights: Examine and operate.			X		X		5
126	Fuel burning heater: Examine and operate.			X		X		5
127								
128								
	<b>BODY AND CHASSIS</b>							
129	Chassis and body: Thoroughly clean exterior, examine for any damaged paintwork or corrosion, rectifying as necessary. In accordance with AESP 2320-A-310-201.					X		6
130	Cab, interior and exterior: Examine.			X		X		6
131	Doors, locks, hinges and catches: Examine and lubricate.		OMD 90	X	X	X		6
132	Bonnet, lock, hinges and stays: Examine and lubricate.		OMD 90	X	X	X		6
133	Seats and seat-belts: Examine.			X		X		6
134	Gaiters and protective covers: Examine.			X		X		6
135	Windscreen and windows: Examine.			X		X		6
136	Wiper arms and blades: Examine.			X		X		6
137	Rear view mirrors: Examine.			X		X		6
138	Rear towing attachment: Examine. Ensure locking latch is free, locking pins are in place and attached by securing chains. Lubricate.		OMD 90 XG 279	X	X	X		6
139	Legal/warning plates: Examine.			X		X		6
140	Air horns: Examine and check oil level.		OMD 90	X	X	X		6
141								
142								
	<b>SPECIALIST EQUIPMENT</b>							
143	Extinguishant tank: Examine.			X		X		1
144	Sight glass: Examine.			X		X		1
145	Shutter door: Examine.			X		X		1
146	Rear locker and stowage: Examine.			X		X		1
147								
148	Hose lockers and doors: Examine.			X		X		2
149	Hoses and foam delivery nozzles: Examine.			X		X		2
150	Rescue and fire fighting equipment: Examine.			X		X		2
151	Ladder mountings: Examine.			X		X		2
152								

(continued)

**TABLE 7 TIME/USAGE MAINTENANCE (continued)**

Serial (1)	Task (2)	Fig/ Item No. (3)	Product (4)	Maintenance Interval				
				1st (5)	A (6)	B (7)	C (8)	D (9)
153	Water pump: Examine and check oil level, top up as necessary.		See Table 2		X			3
154	Water pump: Drain and replenish.		See Table 2	X		X		3
155	Water pump drive shaft and mountings: Examine and lubricate.		XG 279	X	X	X		3
156	Water pump drive belt: Examine and adjust as required.			X	X	X		3
157								
158	Power take-off: Examine.			X		X		4
159	Power take-off controls: Examine and operate.			X		X		4
160	Gauges: Examine.			X		X		4
161	Hand throttle: Examine and lubricate.		OMD 90	X	X	X		4
162	Flushing, drain and delivery valves: Examine.			X		X		4
163	Main tank valve: Examine and lubricate.			X	X	X		4
164								
165								
	<b>WINTERISATION EQUIPMENT</b>							
166	Fuel burning heater: Examine and operate.			X		X		6
167	Fuel burning heater tank and fittings: Examine.			X		X		6
168	Heater ducting, boxes, connections, deflectors and attachments: Examine.			X		X		6
169	Water connections: Examine.			X		X		6
170	Demister nozzles, pipes and connectors: Examine.			X		X		6
171	Screen covers: Examine.			X		X		6
172	Start pilot: Examine.			X		X		6
173								
174								
175								
176	AF G1084A (Worksheet) Tradesman and Countersigning NCO: Sign.			X	X	X		All
177	Road test (NCO MT Technician only): Carry out. (VM)			X	X	X		All
178	AF G1084A (Worksheet): Insert co-ordinating signature.			X	X	X		All





**TABLE 8 OUT OF USE MAINTENANCE**

WARNINGS, CAUTIONS and Maintenance Notes preceding Tables 5, 6 and 7 must be read and understood before commencing these maintenance tasks.

Serial (1)	Operation (2)	Fig/ Item No. (3)	Product (4)
	NOT TAKEN UP		



**COMMENT(S) ON AESP**

To: ATSA DTS 3.2  
Ha-Ha Road  
Woolwich  
LONDON SE18 4QF

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

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

Signed: ..... Telephone No: .....

Name (Capitals): ..... Rank/Grade: ..... Date: .....

X .....  
.....

**ATSA DTS 3.2 USE ONLY**

To: .....  
.....  
.....  
.....

From: ATSA DTS 3.2  
Ha-Ha Road  
Woolwich  
LONDON SE18 4QF

Thank you for commenting on AESP .....

Your reference ..... Dated: .....

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

Signed: .....

Telephone No: .....

Name (Capitals): .....

Rank/Grade: ..... Date: .....

AESP Form 10 (Issue 4.1 dated Aug 99)

