DIRECTORATE GENERAL BORDER ROADS

GENERAL MAINTENANCE INSTRUCTION NO. 69

ON

MOTOR GRADER GALION NO. 118 (USA)

Introduction

1. This instruction enumerates the periodic, preventive maintenance and lubrication of Motor Grader Galion No. 118 (USA).

Summary

2. Maintenance is essential to prolong the life of the equipment, keep it working efficiently at all times, minimize the breakdown and downtime. This is achieved by regular periodic and preventive maintenance.

Action by

3. (a) User units: To carry out periodic Inspection/Maintenance and preventive maintenance, at regular intervals as per details given in succeeding paragraphs. Arrange for timely repairs by field workshops to improve on road worthiness of the equipment and arrest development of major defects.

   (b) Field Workshop: To check the record of maintenance and lubrication in the log-book of the equipment during its inspection and repairs and to ensure that the maintenance is carried out regularly as per the schedule given in this instruction. Advise user unit and mobile maintenance team accordingly.

Details

4. Periodic and preventive maintenance and details of Greasing points are given in Appx 'A' & 'B' to this instruction.

GMI No. 69 dated 31 May 1972

Appx'A' (GMI No.69)

MAINTENANCE INSTRUCTION FOR MOTOR GRADER GALION No-118

Sl/No	Nomenclature	Every 8 working Hrs	Every 60 working hrs	Every 100 working hrs	Every 250 working hrs	Every 500 working hrs	1000 working hrs	Seasonal (spring &fall)
1	Air cleaner	Remove dirty oil and sludge from reservoir. Wash reservoir in clean fuel oil and refill with engine oil to the level indicated on reservoir. Do not add oil above oil level ring. Clean metal elements by washing in clean fuel oil, blow dry before assembly.	Completely disassemble the air clener. Wash the parts thoroughly in kerosene. (ii) Be sure to clean out intake pipe. (iii) Assembled the air cleaner and refit. Fill up oil upto the level.	-	-	-	-	-
2	Crank case	Check oil level with engine stopped oil level should be at 'Full',mark on dipstick(oil gauge). Never let oil level fall below 'low' mark. Top up if necessary,and replenish if oil is dirty.	-	(i) Drain crank cse oil only when engine is thoroughly warm.	-	-		

3	Oil filter	-	-	Change oil filter element. Do not try to clean filter elements.	-	-	-	-
4	Fuel tank	Do not let fuel tank become empty. Fuel pump will lose its prime and may be seriously damaged. (ii) Select the proper grade of fuel oil.	-	-	-	-	-	-
5	Fuel strainer	Open drain lock at bottom of tank and drain off about one fourth pint of fuel and sediment.	-	-	-	-	-	-
6	Fuel filter	Open drain lock at bottom of filter and drain off about one fourth pint of fuel and sediment. Loosen vent at toop of filter	-	-	-	-	Change fuel filter element.	-

		to improve drainage close drain. Check and tighten vent.						
7	Fuel injection pump	Check oil level and for leaks.	-	Change oil with every engine oil changed.	Clean primary pump filter screen.			
8	Remove radiator filler cap and if necessary add soft water to within two(2) inches of overflow pipe. (ii) Always use soft water with good grade commercial inhibitor or permanent type anti freeze.	Check fan belt adjustment.	-	-	-	-	-	-
9	Engine clutch control	Check to see that clutch is disengaged. (ii) Always disengage clutch before starting or stopping engine. (iii) Clutch pedal free travel 2". (iv) Maintain 3/16" clearance between fingers and throw-out bearing.	-	-	-	-	-	-
10	Transmission	-	-	Check oil level and maintain oil level to level plug.	-	-	-	Drain flush and refill with fresh oil.

11	Battery	-	-	Check electrolyte level.Clean terminal and vent holes.	-	-	-	-
12	Starter	-	-	Oil sparingly at oil cups(8-10 drops) every 100 hrs. Do not over lubricate.	-	-	-	-
13	Generator	-	Oil sparingly, both cups (8-10 drops).Do not over lubricate.	-	-	-	-	-
14	Tandem Drive case.	-	-	Check oil level and top up if necessary.	-	-	-	Drain flush and refill with fresh oil.
15	Hydraulic brake	Check brake pedal free travel"It should be 1"	-	Check fluid level in master cylinder and top up if necessary.	-	-	-	-
16	Hydraulic system oil supply tank	-	-	Check and maintain level to test cock.	-	-	-	Drain,flush and refill with fresh oil.
17	Small side shift worn case	-	-	-	Fill to level of filler plug	-	-	-
18	Circle reverse gear case	-	-	-	-do-	-	-	-
19	Front wheel hub	-	-	Add wheel beariong grease.	-	-	-	Clean. Inspect and refill with fresh grease.
20	Manual steering gear case	-	-	-	Keep filled with grease.	-	-	-do-
21	Scarifier draw bar support rod	-	Oil can lubrication every 60 hrs	-	-	-	-	-

22	Side shift gear cases	-	-	-	-	-	-	Remove cover. shift worn reduction gear.Clean replace worn &dmged parts repack fresh lubricant./Refit cover.
23	Circle supports	-	Clean and apply oil can lubrication evey 60 hrs. Daily if working in gritty or excessive dust. Use engine oil. Do not lubricate top surface of the circle.	-	-	-	-	

Appx 'B' to HQ DGBR GMI No. 69

DETAILS OF GREASING POINTS OF MOTOR GRADER GALION NO. 118 USA

Srl No.	Location	10 Hrs
1.	Front axle pivot pin	1
2.	Steering gear extended shaft, lower bearing on left side	1
3.	Front leaning wheel cylinder hing pin	1
4.	Front leaning wheel cylinder piston rod ball socket front	1
5.	Front Wheel spindle RH and LH front	4
6.	Upper and lower RH and LH front wheel spendle yoke grease fittings	4
7.	Steering gear drag link, spring cup and ball stud RH	1
8.	Steering gear tie rod yoke end RH	2
9.	Manual steering gear, overhead shaft	1
10.	Scarifier hang rod RH and LH socket upper and lower ball sockets	4
11.	Scarifier lift shaft bearing RH and LH	2
12.	Scarifier lift cylinder piston rod bearing	1
13.	Side shift telescope drag link ball sockets	2
14.	Mold board hang rod RH and LH upper and lower ball sockets	4
15.	Mold board lift shaft, RH and LH front bearing	2
16.	Side Shift shaft bearing, front (split) and rear (gear case bearing)	2
17.	Side shift worm shaft bearing for large work RH and LH	2
18.	Mold board lift cylinder support pivot shaft bearings, front and rear	4
19	Mold board lift shaft RH and LH rear (dash) bearing	2
20	Mold board lift cylinder, RH and LH piston rod ball socket	2
21.	Service brake pedal	1
22.	Rear axle housing to tandem drive case coupling RH and LH inner and outer	4
23.	Water Pump	1
24.	Clutch pedal	1
25.	Manual steering gear overhead shaft rear universal joint center	1
26.	Side shift reduction work shaft rear and front	2
27.	Side shift hydraulic motor drive shaft universal joint	2
28.	Draw bar draft connection, ball and socket. Fittings at right and left hand	2
29.	Steering gear drag link, LH spring cum and steering arm ball	1
30.	Steering gear tie rod yoke LH	2
31.	Upper and Lower LH front wheel spindle yoke	2
32.	Steering system: Hydraulic booster cylinder piston rod ball socket	1