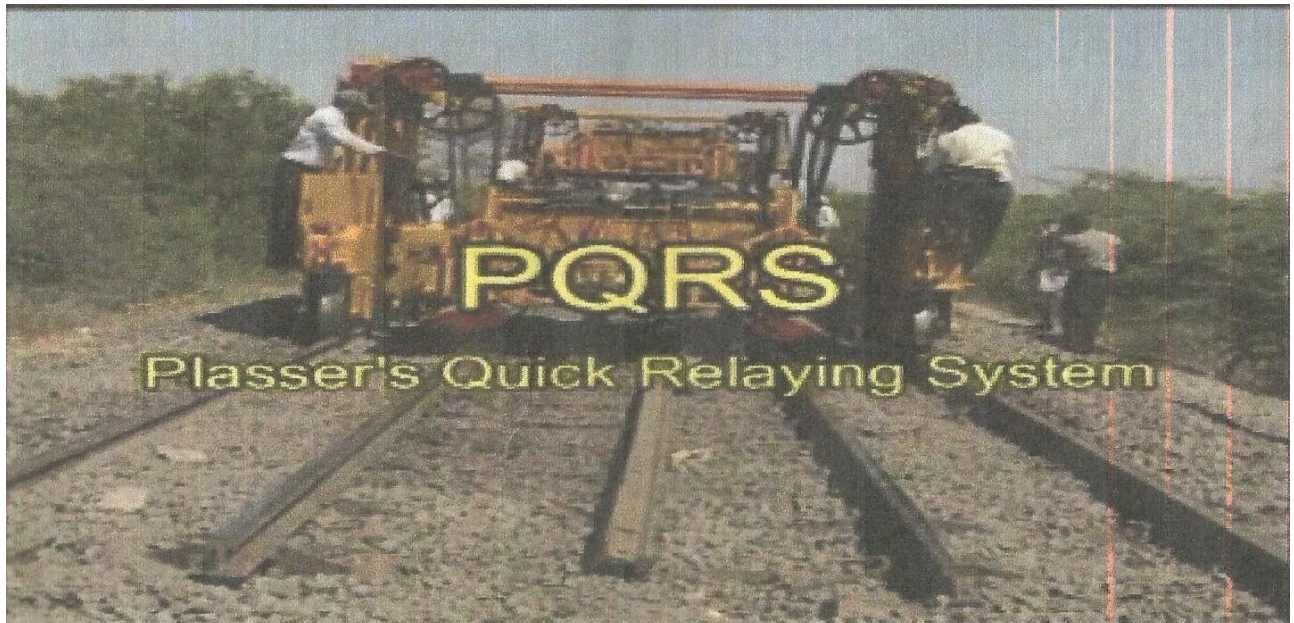




**GOVERNMENT OF INDIA  
MINISTRY OF RAILWAYS**

**MAINTENANCE SCHEDULES  
FOR  
PLASSER'S QUICK RELAYING SYSTEM  
(PQRS)**



**REPORT NO.TM - 101**

**Revision -1**

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**RESEARCH DESIGNS & STANDARDS ORGANISATION  
MANAK NAGAR, LUCKNOW-226011.**

## PREFACE

Maintenance of On-Track Machines is a challenging task. Maintenance of these machines is being done by Zonal Railways with the assistance of local trade available, zonal track machine workshops, CPOH / Allahabad and RDSO / Lucknow. With experience over the years, the railway engineers have developed adequate expertise in the maintenance of these machines. However, in absence of approved maintenance instructions, different maintenance practices have come into vogue. Therefore, it has become imperative to have a uniform maintenance standard throughout the Indian Railways.

Revision-1 of Maintenance Schedule for **PQRS** have been prepared on the basis of correction made in provisional maintenance schedule and suggestions received from railways.. The suggestion and feedback from field has been taken and incorporated in this these maintenance schedules.

While every care has been taken to make the maintenance schedules quite exhaustive, there is always scope for further improvement. Suggestions from the railways in this regard will be welcome and may be sent to the undersigned for future improvement.

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## EXPLANATORY NOTES

While preparing the text of maintenance schedule manual of PQRS, the terms used and their meanings are explained below:

- CHECK - Ensure a specific condition does (or does not) exist.
- INSPECT - Look for damage and defects including breakage, distortion cracks, corrosion and wear, check for leaks, security and that all items are completed.
- CHANGE - Remove old parts by substituting a new or overhauled or reconditioned part. Fit new or overhauled or reconditioned part in place of missing part.
- OVERHAUL - Dismantle, examine, recondition or renew parts as necessary against given specifications, reassemble, inspect and test.

## INDEX

<b>S.NO.</b>	<b>DESCRIPTION</b>	<b>PAGE NO.</b>
1.	Schedule I	1
2.	Schedule II	2
3.	Schedule III& IV	3
4.	Schedule V	4
5.	Schedule VI	5
6.	Schedule VII	6
7.	Acknowledgement	7



## **SCHEDULE-II**

**( TO BE DONE AFTER 50 HOURS OF ENGINE RUNNING)  
DURATION- TWO HOURS**

### **1. ENGINE-**

- i) Check the gravity of batteries
- ii) Check the oil bath air cleaner and change the oil if required.
- iii) Check battery terminals.

### **2. MACHINE GENERAL-**

- i) Check the condition of duplex chain
- ii) Check the condition of Simplex chain
- iii) Check the tension of duplex chain
- iv) Check the tension of Simplex chain
- v) Check lubrication of duplex chain
- vi) Check the condition of eye bolts
- vii) Check the tightness of bolts of synchronizing shaft
- viii) Check the brake system
  - a) Brake pressure should be 30 bar.
  - b) Clearance between brake blocks and running wheel  
Should be within 3 to 5mm

### **SCHEDULE-III**

**(TO BE DONE AFTER 100 HOURS OF ENGINE RUNNING)  
DURATION- ONE DAY**

#### **1. ENGINE-**

- i) Check the engine and surroundings
- ii) Check the condition of smoke

#### **2. MACHINE GENERAL-**

- I) Inspect the rollers for side frames
- II) Inspect the synchronizing shaft for any bend or crack
- III) Check the leakage from bridge lifting cylinders and change the seal on condition basis.
- IV) Check the hydraulic return filter

## **SCHEDULE-IV**

**( TO BE DONE AFTER 200 HRS. OF ENGINE RUNNING)  
DURATION-TWO DAYS**

### **1. ENGINE-**

- i) Clean the oil bath air cleaner and change the oil.
- ii) Change the engine oil

### **2. MACHINE GENERAL-**

- I) Lubricate the wheel bearing with soft grease.
- II) Change the return line filter
- III) Change the seal of bridge lifting cylinders on condition basis
- IV) Check the teeth of adopter plate shaft.
- V) Change the suction line filter.
- VI) Check all the limit switch.
- VII) Clean the complete machine.
- VIII) Lubricate the turn table with grease



## **SCHEDULE-V**

**(TO BE DONE AFTER 1000, 3000 and 5000 Hrs. OF ENGINE RUNNING)  
DURATION- 7 DAYS**

### **1. ENGINE-**

- I) Overhaul the engine on condition basis
- II) Check the alternator for proper working,
- III) Check the self starter for proper working,
- IV) Calibrate the fuel Injectors or replace
- V) Calibrate the fuel injection pump. or replace
- VI) Clean the fuel tank.
- VII) Clean diesel tank.
- VIII) Adjust the tappet clearance

### **2. MACHINE GENERAL-**

- I) Clean the hydraulic. oil with portal. filter of 10  $\mu$ .
- II) Change the side rollers with bearings.
- III) Replace the duplex chain
- IV) Replace the Simplex chain
- V) Clean the complete machine.
- VI) All driving wheels to be re-profile on condition basis or replace
- VII) Clean the hydraulic tank.
- VIII) Inspect the complete crane for any damage.

## **SCHEDULE- VI**

**(TO BE DONE AFTER 2000 and 4000 Hrs. OF ENGINE RUNNING)  
DURATION-45 DAYS**

### **1. ENGINE-**

- I) Engine is to be overhauled if there is a lack of compression otherwise not.

### **2. MACHINE GENERAL-**

- I) All the roller guide to be taken out and built up by welding the profile.
- II) All hydraulic hoses to be replaced if required
- III) Pumps to be checked and replace if required.
- IV) Motors to be checked and replace if required

## **SCHEDULE-VII**

**(TO BE DONE AFTER 6000 Hrs. OF ENGINE RUNNING)  
DURATION - 60 DAYS**

### **1. ENGINE-**

- I) Overhaul or replace the engine.
- II) Overhaul the self starter.
- III) Overhaul the alternator
- IV) Change the engine mounting pads.
- V) Change oil bath air cleaner element
- VI) Change all V-belts.
- VII) Replace the batteries.

### **2. MACHINE GENERAL-**

- I) Replace seals of all hydraulic cylinders.
- II) Change all hydraulic pumps.
- III) Change all hydraulic motors
- IV) Replace all hydraulic hoses.
- V) Clean the hydraulic tank.
- VI) Replace the hydraulic oil.
- VII) Replace all hydraulic filters
- VIII) Clean hydraulic oil cooler along with required repairs.
- IX) Change all D.C. valves.
- X) Change all pilot operated valves.
- XI) Duplex chain to be replaced
- XII) Simplex chain to be replaced.
- XIII) Bearings of all wheels to be replaced.
- XIV) All rollers to be replaced.
- XV) Contact surface of side frame with rollers should be checked. For any dips and wear, welding should be done.
- XVI) Side frame should be attended for any cracks.
- XVII) Replace all defective lights.
- XVIII) Replace the brake blocks.
- XIX) Check the condition of sleeper gripper and strengthen it if required.
- XX) Change the cables and wires of electrical circuit on condition basis.
- XXI) Paint the complete crane.
- XXII) Check the proper functioning of portal in all respect.

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