

A Quick Guide to Road Maintenance

1 WHERE is the complete guide?

There are many - recommended are the 'Overseas Road Notes' produced by TRL Ltd of the UK. A full set on CD is left with Jimmy Johnson at PWD Malampa and with PWD Vila. Hard bound copy of *Overseas Road Note 20 - 'Management of rural road networks'* is also with Jimmy.

2 WHAT??

2.1 What is road maintenance?

Road maintenance is doing lots of small cheap things to keep everything working without having to do big expensive things very often.

2.2 What kinds of maintenance are there?

The main kinds of maintenance are '*routine*', '*preventive*', and '*periodic*'. I like the term '*preventive*' because you are trying to prevent disruption to the road and to prevent more costly repairs. 90% of maintenance of rural networks should be grass cutting, bush clearance, drain clearance and pothole filling. Light grading is the most that should be considered to be 'maintenance'. You need labour, small equipment and very good organisation (see later).

2.3 What about rehabilitation?

Rehabilitation and construction are not maintenance. Rehabilitation and construction are major works needed when maintenance has failed or improvements have to be made. You need machines, fuel and spare parts. It is expensive and should be avoided unless no alternative exists.

3 WHY??

3.1 Why is maintenance preferred to rehabilitation?

- It is cheaper and saves on foreign exchange (less imported fuel and spare parts)
- It is more efficient - it accurately targets the problem and limits the work.
- It prevents early deterioration requiring more expensive work
- It is labour based providing employment and vatu for the community
- It generates a sense of 'ownership' and pride by the community in 'their' road
- It is less affected by bad weather and can carry on in all but the worse conditions

- it delivers a better service to user, the cost of transport is reduced, the comfort is increased.

3.2 Why is clearing the drains the most important maintenance work?

Water is the number one ENEMY of the road. If it can't escape :

- It floods the road
- It washes away the road and important structures
- It makes soft mud and leaves behind dust and potholes when it dries

3.3 Why are grass cutting and bush clearance almost as important as drains?

- Clearing grass and bush lets you see the road and the drains and their problems - existing ones and potential ones.
- Clearing grass and bush allows the wind and the sun to dry the road more quickly and minimise damage due to lying water and wet surfaces.
- Clearing grass and bush adds to road safety (longer sightlines) and adds to travelling comfort (less wet grass brushing the passengers in the back of the truck).

4 HOW??

You know how! There is nothing very technical here. If you are unsure refer to your training notes, Check the Overseas Road Notes (see above) or ASK! The most important things are '**organisation**' and '**repetition**'. You need a reminder list of the steps and you have to keep repeating them. Maintenance is never finished!! The grass is always growing, the rain is always falling, the drains are always blocking - 365 days a year. Your reminder list is:

- Inventory - *what have we got?*
- Inspection and Survey - *what does it need?*
- Specification and Bill of Quantities (BoQ) - *how much will we do?*
- Pricing and Budget - *can we afford it?*
- Resources (Labour, Equipment, Materials, Support) - *have we the resources?*
- Small Works Agreement - *what must the contractor do?*
- Supervision - *is the work being done properly?*

- Inspection, Approval and Payment - *has the work been done?*
- Re-inspection and Re-survey and REPEAT the above - *OK let's start again!*

5 What about the pavement? (Surely this is the most important?)

The pavement and a good running surface is the whole purpose of the road. However, in maintenance terms, it is important, but not the most important. Remember:

- Trying to solve pavement problems without first solving drainage, grass and bush problems is a waste of time.
- Dumping gravel into soft wet muddy areas without solving the drainage problem that caused them is a complete waste of time and money. The soft mud will be back - often within days.
- Light grading does not solve pothole problems - it disguises them for a few days.
- Every time that you grade you lose gravel and strength in the road. The best compaction comes from long term road traffic - when you grade it you lose it. Better to fill potholes by hand. Do not disturb a compact running surface until you have to and you are able to bring in new gravel to replace what will be lost.
- Light grading does help corrugation problems but think also of less harmful alternatives such as tyre dragging.

And soof course the pavement needs maintenance - but only after clearing drains, grass and bush. Be very very selective about methods and limit rehabilitation strictly to the minimum lengths where it can't be avoided.

6 Summary

Increase maintenance and you will be able to reduce costly rehabilitation, re-builds and emergency works. Of course, PWD have a large backlog of rehabilitation to complete - emergency works will be a major feature of work for some years to come. Think about contracting out rehabilitation and save on big machines. Increase emphasis on regular maintenance so that the problems forcing early rehabilitation do not re-occur. Tip the balance back to maintenance.

7 Some words that are used

- **Corporate Plan** - *A summary of the purpose of the organisation and its long term direction.*
- **Strategic Plan** - *A long term plan setting out how to achieve the Corporate Plan.*
- **Implementation Plan** - *Long term resource planning and implementation methods.*

- ***Annual ; Monthly ; Weekly ; Daily - Plans - Detailed resourced and timed plans to do work.***