

CHAPTER 3. SEEDBED PREPARATION

3.6 MAINTENANCE AND REPAIR

3.6.1. MAINTENANCE, REPAIR AND MAKING SPARE PARTS

INTRODUCTION

The importance of routine maintenance is generally well known but unfortunately it is rarely practised as required. The objective of this Section is to encourage the adoption of regular maintenance schedules for tillage equipment.

Indications will also be given in the following Modules, of the repairs and the spare parts which may be made by the local blacksmith (Fig.1). They do not constitute a Blacksmith's Training Course, but should allow the Agricultural Field Officer to better judge the quality of work being achieved by the artisan and to enable him/her to identify a possible need for their future training.



Fig. 1 A selection of spare parts for the Arara plough which may be manufactured by the trained local blacksmith from locally purchased material, much of it being scrap metal

NOTE: All photographs used in this Module are reproduced from the FAO Filmstrip "Training for Rural Blacksmiths". Maintenance and repair of tillage and transport equipment. FAO, Rome, 1991. Authors: B.Mignolet and W. Spettel; Photos: M.Sinko and J.Van Acker

DAILY MAINTENANCE OF TILLAGE EQUIPMENT

Tillage equipment inevitably suffers minor damage during field use. Daily maintenance will prevent costly damage to non-wearing parts, assist in the ease with which field adjustments may be made and improve the performance of the implement in work. The 30 minutes or so spent in regular daily maintenance will be amply rewarded by the hour or more saved the following day during field work.

Daily maintenance should be carried out immediately after working in the field and never left until the morning. In this way, no valuable working time is lost during the cool morning period.

AT THE END OF THE DAY

- Scrape off the soil while still in the field and return home

- Thoroughly clean the implement, washing it if possible so that a detailed inspection can be made of all the parts (10 minutes)

- Check the tightness of all nuts and bolts with the correct spanner (never use a wrench or a pair of pliers) (5 minutes)

- Check the nuts and bolts used for field adjustments. Make sure the threads are not damaged and that the nuts may be loosened if necessary when back working in the field. Oil if too tight. (5 minutes)

- Check the condition of the wearing parts (the share, landside, mouldboard, heel, wheel axle of the plough; the points of the cultivator or ridger) and plan to replace them as necessary. (5 minutes)

- Check the implement for distortion. Redress any bent parts or send them for repair in the afternoon. (5 minutes)

- Store the equipment overnight safely and away from the animals.

This schedule shows that only 30 minutes each day is needed to thoroughly clean and check the implement. The afternoon may then be spent arranging for any repairs and ordering spare parts as needed.

WHILST AWAITING THE NEXT RAINS

Tillage may be halted for several days during or waiting for the next rains. This allows time to complete any repairs identified during the daily maintenance services. However it is now very important to maintain the working parts in a polished condition, so stopping the onset of rust and reducing unnecessarily high draught forces when the implement is returned to work:

- wipe all working surfaces with a rag soaked in oil (the share, mouldboard, landside, points, etc.)

DO NOT APPLY OIL TO THE AXLE OF THE PLOUGH SUPPORT WHEEL!

AT THE END OF THE SEASON

Follow the normal Daily Maintenance Schedule outlined above. This will allow identification of all worn parts and damaged nuts and bolts. Take advantage at the end of the season to carry out a general overhaul:

- Completely dismantle the main components of the implement
- Repair or replace the parts as required
- Clean the components thoroughly, remove any rust and if necessary, repaint them. Alternatively protect them by wiping them with an oil soaked rag.
- Do not paint however, the working surfaces of the share, mouldboard or landside. These should just be cleaned and wiped with oil.
- Replace all damaged nuts and bolts, again wiping them with oil on assembly
- Reassemble the implement and make sure it has all been wiped with oil
- Store it in a safe, dry place and away from the animals, sacks of grain and well clear of any stored fertilizer

REPAIR AND REPLACEMENT OF SPARE PARTS BY THE BLACKSMITH

A well trained blacksmith is able to repair or replace many of the wearing parts of tillage equipment. He should be equipped with a minimum set of forging tools, all of which may be made by himself from locally available material (Fig.2).

