

# CHAPTER 2. HARNESSING AND TRAINING

## 2.1 HARNESSING OF DRAUGHT CATTLE

### 2.1.1 MAKING THE SHOULDER YOKE (GENERAL)

#### INTRODUCTION

The shoulder or withers yoke is commonly used with draught cattle derived from breeds such as Brahmin or Zebu and which have pronounced humps. It is also occasionally referred to as a neck yoke although this term is not preferred as it can be confused with yokes which are attached to the horns of the animal.

Many different designs of shoulder yoke are used throughout the world and tradition plays a major role in methods of construction. Two distinct designs are described below, the first being made entirely from wood and which is commonly used in Eastern and Southern Africa. The detailed construction of this yoke is described in **Module 2.1.2**. The other has metal rods fitting over either side of the shoulders, which are usually made by the local blacksmith. This yoke is used in parts of West Africa, particularly in Niger, Mali and Burkina Faso.

#### ESSENTIAL FEATURES OF THE SHOULDER YOKE

Although shoulder yoke designs may vary, two features should be carefully checked when inspecting a yoke used by the farmer:

- the surfaces of the yoke and the vertical pegs or rods ("skeis") should be smooth, so as not to cause unnecessary rubbing and skin damage to the animal. Check particularly that the cords attaching the yoke (the strops) are not too tight and that loose ends are tucked away neatly, giving maximum comfort to the animal;
- observe the yoke when in use and inspect the point of attachment of the trek chain to the beam. Make sure that when the animals are pulling, the yoke does not tend to rotate across the shoulders. The load should be seen to be evenly carried over the shoulders of the animals and the strops should merely hold the yoke in position, never tending to choke them.

**CHOOSING THE LENGTH OF YOKE REQUIRED**

The yoke length is the distance maintained between the animals once it is attached and is thus the distance between the centres of the vertical pegs. Choice of yoke length depends both on the nature of the operation to be performed and on the size of the draught cattle. When primary and secondary tillage, planting, weeding and transport will all employ the use of draught animals, it is wise to plan row spacing and yoke size so as to reduce the total number of different yokes which will be needed.

A total of three yokes measuring 90 cm, 135 cm and 180 cm will enable all these operations to be carried out in row spacings of 30 cm, 45 cm, 60 cm, 75 cm and 90 cm. Their specific use is described in the Modules which follow (Chapter 4).

Although these three different yokes are recommended during this training course, other sizes may be of greater use where normal row spacing or the size of animals differ considerably. As a general rule, yoke lengths should closely correspond as is suggested in the following table:

| OPERATION         | YOKE LENGTH SUGGESTED   | COMMENT   |
|-------------------|---|---|
| Ploughing         | 90 cm   | 75 cm is commonly used in West Africa   |
| Planting          | <u>EITHER</u> : 3 times the row width<br><u>OR</u> : equal to the row width | eg. 135 cm for 45 cm rows;<br>90 cm for 90 cm rows, etc.  |
| Inter-row weeding | Double the row width  | <u>NOTE</u> : the 135 cm yoke can weed rows of either 60 cm or 75 cm without trampling the plants                   |
| Ridging           | Double the row width  | <u>NOTE</u> : the 135 cm yoke can also work with the ridger in rows of either 60 cm or 75 cm                        |
| Transport         | 135 cm  | <u>NOTE</u> : shorter yokes of 110 cm or 120 cm are sometimes used, but these do not match the row spacing of 75 cm |

**Table 1. Choice of yoke length**

### MAKING A WOODEN SHOULDER YOKE

Having considered the size of the yoke which is required, a stout pole at least 8 cm in diameter should be cut to a length between 50 cm and 60 cm longer than the yoke length which has been selected.

The village carpenter will then cut the holes for locating vertical wooden pegs which should be made to fit either side of the animals' shoulders and at the nominal width. Normally the pegs should be spaced about 22 cm apart, but this depends upon the shape of the particular breed. Notches can be cut in the pegs to locate the restraining loops ("strops") which will pass under the necks of the animals (Fig.1).



*Fig. 1 A wooden yoke with traditional rounded pegs fitted and the trek chain looped over. Although these pegs are easy to make, they do not fit over the shoulders as well as the skeis shown below in Fig.2*

*Photo: J.E. Ashburner*

Two metal clamps may be burnt through the beam by the blacksmith, inclined downwards at about 35 degrees, to attach the trek chain (Fig.2). If clamps are used, make sure that the yoke does not rotate over the shoulders of the animals when they are working.

An alternative way to attach the chain is to simply tie it to, or loop it over, the yoke each time work is commenced. Although taking a bit longer in the field, this provides the simplest adjustment and is normally adopted by the farmer. If one animal is weaker than the other, it is very easy to slide the attachment towards the side of the stronger animal but make sure it is securely located (In Fig.1, the chain appears unrestrained and able to slip sideways).

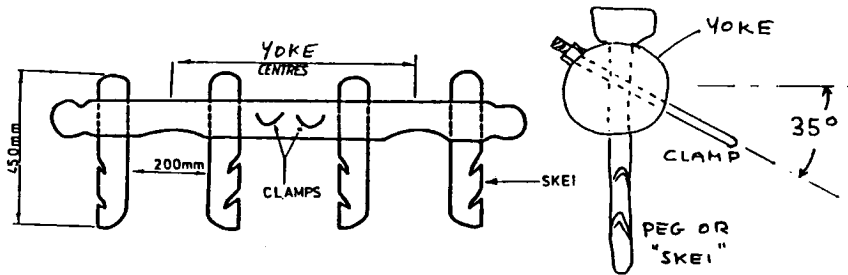


Fig. 2 Sketch of the design for a wooden yoke with metal clamps burnt through the beam at a downwards angle of about 35 degrees.

Adapted from: Chimganda, 1984

**MAKING A YOKE WITH METAL PEGS**

In Niger and some other West African countries, the vertical pegs are forged by the blacksmith. A typical design is shown below (Fig.3).

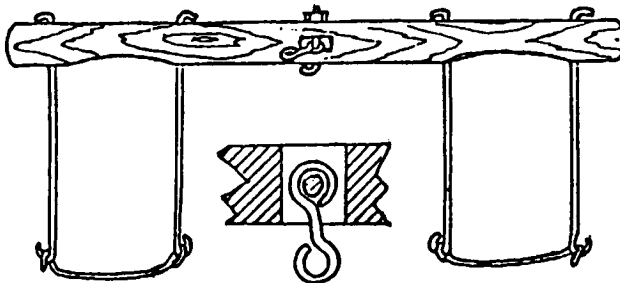


Fig. 3 One example of the design of a shoulder yoke with metal pegs as used in parts of Niger. Source: CEEMAT/FAO, 1972