

# INSPANNING HORSES AND MULES MORE THAN TWO ABREAST

By P. Fowlie

Mr. P. Fowlie read the following paper on the above subject:—

In South Africa it is very unusual to see horses and mules inspanned more than two abreast, but in certain other countries, particularly United States of America, Canada, Australia and New Zealand, it is the general practice to inspan any number up to six animals abreast in ploughs and other agricultural implements.

Such teams have a number of very definite advantages over teams strung out two abreast under conditions where they can be conveniently employed. It is not suggested, for instance, that wagons being used on the narrow roads common here should have animals pulling more than two abreast.

The chief advantages of using more than two animals abreast are:—

(1) They are nearer to their work, and less of their energy is used up to carry the connecting gear between them and the implement to be pulled. This in practice means that fewer animals will do the same work. For instance, eight animals arranged four and four will pull as much as ten or twelve working in pairs. I have made no definite tractive tests, but experience would seem to indicate that four animals abreast are about equal to six in pairs. Four mules have been used for ploughing with a reversible disc plough, and for ridging up,

at the Experiment Station, with results which go far to prove that contention.

(2) They are more easily controlled and driven. It is no unusual thing to see a team ploughing with a leader, a driver, and a plough boy. With the team all pulling abreast they can be readily controlled by reins, and one man can drive and attend to the implement as well.

(3) They can be turned in less time and space. This means that smaller headlands are necessary and that the implement can be expected to do a little more work per day.

Various types of swingle bars can be used for inspanning three, four and more animals abreast.

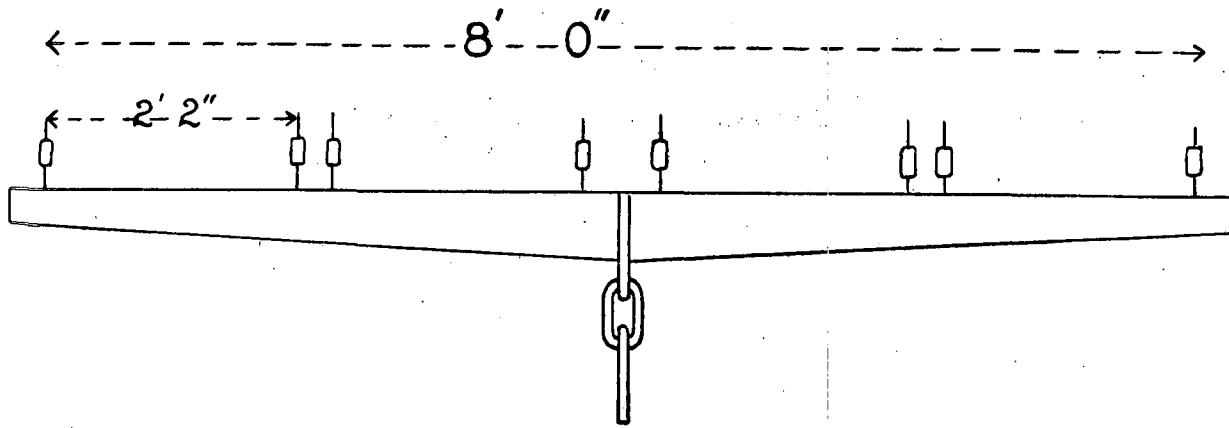
The most primitive way is to have one long bar and attach the chains from all the animals to it in such a way that the two sides of the team are as well balanced as possible.

A bar for three animals 6 feet long or one for four 8 feet long, will act all right provided care is taken that the two animals on one side pull equally with those on the other.

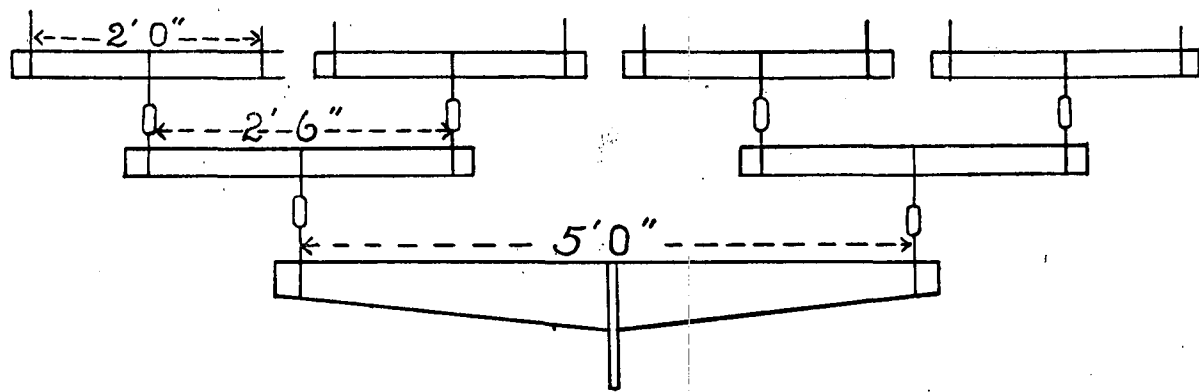
Draught gear for three or four animals, arranged so as to equalise the pull of each animal, is shown below.

By having the length of the back bars adjustable the draught can be arranged so as to give light loads to the weaker animals.

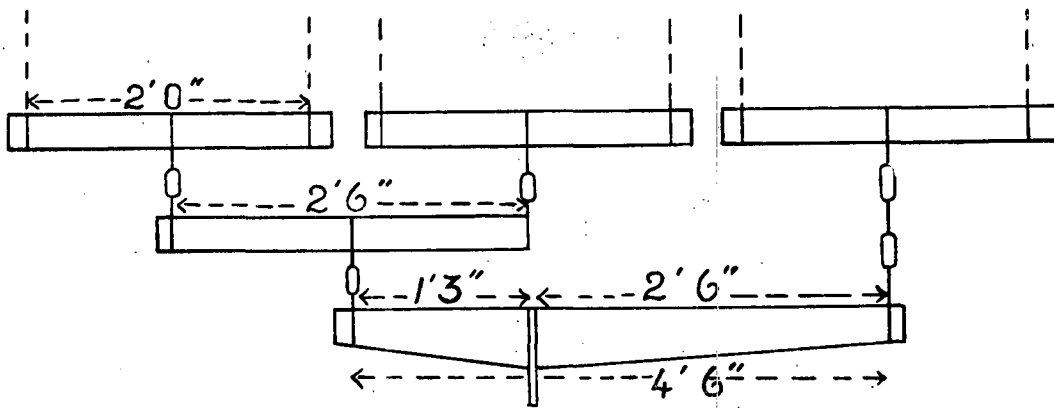
Experiment Station,  
South African Sugar Association,  
Mount Edgecombe,  
Natal.



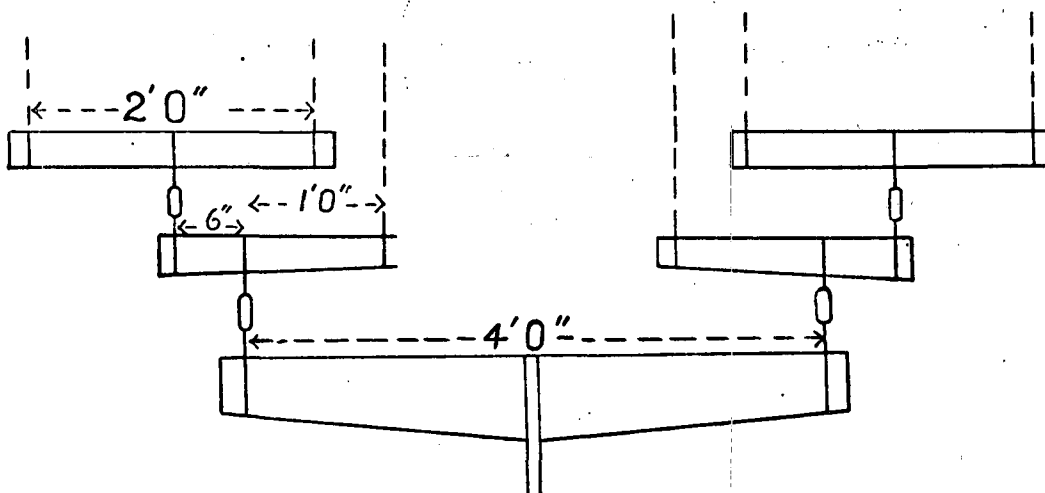
F.1. STRAIGHT BAR FOR FOUR MULES



F.2. SET OF EQUALISING SWINGLE BARS FOR FOUR MULES



F.3. SET OF EQUALISING SWINGLE BARS FOR THREE MULES



F.4. ANOTHER SET OF EQUALISING SWINGLE BARS FOR THREE MULES

Chairman: These papers, to my mind, form an excellent example of the way in which the Association is extending the scope of its inquiries, which I hope eventually will cover the whole field of sugar production. That I think is the more necessary now in view of the fact that the Sugar Congress which was held annually before now appears to have been discontinued, so that there is no representative body dealing more particularly with the agricultural side. I think it is, therefore, up to us in view of the fact of the big field for inquiry and improvement in this direction that we should take up this kind of study also. Consequently I particularly welcome papers of this sort. They are both from the members of the Committee on Labour Saving Devices, and although they have not presented a joint report they have given us three exceedingly useful papers—these two that Mr. Fowlie has just read from Mr. Andrewes and himself and the one from Mr. Bihl on the use of the Sand Blast. This Committee evidently can play a very useful part which is not covered by any of our other existing Committees.

Mr. Pearce: I was up in East Griqualand a couple of weeks ago and they are using tractors up there more than anywhere I think. They work night and day, in shifts, and have big headlights on the tractors. There are two native boys to each, one on and the other off in turns.

Chairman: It is usually considered that this is not a favourable field for tractors, but if the tractor will succeed in making its way in this country it will do so almost anywhere. The difficulties it has particularly to contend with here are the high cost of fuel and also of the skilled labour which is considered necessary to supervise it. Therefore it is particularly interesting to hear what Mr. Pearce has to tell us regarding the control of tractors by Natives, who are regarded usually as too unintelligent for that purpose.

Mr. Masters: I would like to say in connection with tractors that they appear to be quite alright where the contour of the land lends itself to tractor work, but where you get rugged land, as we have it on the Natal Coast I unhesitatingly say that tractors are not an economical proposition for a cane planter if he has to rely entirely on tractors as in the majority of cases he would be compelled to purchase stock as well as have tractors. In our own case we consider we should write off 40% per annum on our tractors. We have been working two now for some years and we are working steam tractors as well at a cost of £8 to £9 a day. I think

we have had as many demonstrations on Natal Estates as anywhere in Natal, or Africa for that matter, and I still unhesitatingly say that at Natal Estates with our 17,000 acres under cane we could not use tractors on more than 30% of our cane at the very outside. I have not found the upkeep of the tractors as economical as they have been found in other parts. I quite agree that where a man has a farm of 700 to 800 acres of level or undulating ground, and he will drive the tractor himself or teach a boy to drive it properly, then the tractor is the thing above everything else, but where we are faced with the conditions we have on our coastal areas I think one has to be very careful before going the whole hog on tractors. There are many excellent types, but our experience with caterpillars is that the pins did not wear on the side of hills and the tractive powers came down a good deal. A 20 h.p. tractor up some of our hills would not pull a pony plough though we have had most excellent results from tractors on flat lands. I think the Sugar Journal published a record by our steam tractors—fourteen acres in ten hours. That can't be beaten by tractors. My only reason for mentioning these things is that I would not like any young planter to feel justified in going wholeheartedly for tractors.

Mr. Fowlie: My work takes me about the country a good deal from time to time and I have spoken to the owners of tractors on a good many farms on the coast, and I think the consensus of opinion is pretty much what Mr. Masters has expressed. A tractor is a very useful thing to get rid of a lot of ploughing if it happens to be on suitable soil and under ideal conditions, that is to say when the ground is not too wet, but it is a thing which you want to be able to put away in a shed for months at a time when the conditions are not suitable, and be able to carry on without it with animals or some other course, chiefly with animals, of course, on cane farms. So I think that Mr. Masters' warning is very necessary. Those who can afford tractors, and who have a big enough area to be able to use them when the conditions are suitable, and put them away when the conditions are not suitable, would be well advised to go in for them; otherwise I think they ought to be left alone.

Chairman: Unfortunately Mr. Andrewes, the writer of the paper is not with us, but he comes from Esperanza, and as regards gradients I don't recollect seeing very much level ground in the neighbourhood of Esperanza (laughter). It would be interesting to have his views on that particular aspect of it.