

as far as possible
 may be exempt
 from instruction
 the ~~right~~ ~~right~~
 will during their
 training at the Depot

2. Officers who hold
 no certificate of
 proficiency will
 or a certain grade
 honor in 1905
 should be instructed
 in the subject to
 the extent required
 in each individual
 case

1905

Circular
 EAST AFR. PROT.
 No 8228

8428
 Recd
 9 MAR 09



1908
 13 Feb
 Last previous Paper

(Subject)
 PRINTED FOR PARLIAMENT
 Cd. 4589. MAY 1909.

Mechanical Transport

To Memoranda by Commr J.P. Webb,
 & Director of Transport

Circular 1/3 Aug 1907

(Minutes)

~~Print - as per~~

General reply to letter put into
 the other replies. 9/3
 H.P.
 2/14

Next subsequent Paper

2428

554



Governor's Office,

Nairobi,

February 13th 1908.

EAST AFRICA PROTECTORATE

No. 82
(Incl. B)

PRINTED FOR PARLIAMENT
C.L. 4589 MAY 1908

8428
94/103

My Lord,

With reference to Your Lordship's despatch
Miscellaneous of December 12th last, I have the
honour to transmit herewith Memoranda by the
Commissioner of Public Works and the Director of
Transport on the questions relating to mechanical
transport raised in Your Lordship's Circular of
August 12th 1907.

Mr. Smith
Jan. 20th

Mr. Wilson

I regret the delay which has taken place
in forwarding this information.

I have the honour to be,
With the highest respect,

My Lord,
Your Lordship's most obedient,
humble servant,

H. M. PHILLIPS, SECRETARY OF STATE

FOR THE COLONIES,

DOWNING STREET,

LONDON, S.W.

* No 16409

30128 27-12

82 26 13 8

MEMORANDUM.

I am indebted to Mr. Tanner, the Assistant Director of Public Works, for answering the questions sent out from the Colonial Office.

I saw the despatch in the Colonial Office before I left England in August and wondered what had become of it, until the Director of Transport told me last Wednesday that the file was in his office in Mombasa. Mr. Waller kindly met me at the Railway Station on Thursday and handed the papers over to me.

The use of Mechanical Traction, on an extensive scale, was introduced into this country by Government for some years to come for the following reasons:-

- 1. There are no metalled roads.
- 2. There is plenty of contractors, European and Indian, who are willing to act as common carriers, and who have already done so to the satisfaction of Government, and this private enterprise is worth encouraging.
- 3. I only left India in April last and up to the time of my departure no mechanical tractor had been invented which could compete with animal draught transport on metalled or unmetalled country roads, and the same conditions appear to be in force here.
- 4. The cost of metalling roads will be very heavy.

To metal a mile of road with metal 12 feet wide, 6 inches thick (consolidated) trap rock, broken to 2 1/2" gauge, will cost

(2)

cost at least Rs. 3,000 (£200) per mile in the first instance, and will take Rs. 300 (£20) per mile to maintain annually. Therefore metalling means a large initial cost and a heavy burden.

I believe the best road policy in this country will be to construct proper graded and bridged unmetalled roads every where, and to encourage capitalists to lay down "Erving's Patent Mono-rail System" - the one with the "balance wheel" - on the sides of the public roads. This system needs no metalling and to prevent the balance wheel from sticking to the clay in wet weather, all that is necessary is to lay down a strip of sand one foot wide and one inch deep - or less - on the track of the balance wheel.

The mono-rail tramway completely equipped would not cost more than from £300 to £1000 a mile according to the number of sleepers per mile and weight of rail per yard used, the number of Passenger Vehicles and goods wagons. The mono-rail tramway would probably drive all other traffic off the roads, because its merits would soon be recognized in the monsoon, when carts drawn by animal traction would traverse the greasy muddy roads with difficulty, or stick in it, while the mono-rail is being worked smoothly and effectively. This is no surmise but proved by the conditions which I saw at Kharaypen (Bengal) during the monsoon of 1905.

The mono-rail rolling stock can be drawn by mechanical animal or manual traction.

I shall await the researches of the War Office on mechanical traction with interest, because such traction must be found in towns, as we metal more and more miles

of

(3)

of road in them, but as I have already said, I do not
believe in such traction being ^{of} value on country roads.

Ed. G.K. WATTS.

Commissioner of P. Works.

Kombasa.

January 25th 1908.

ROADS, TRACKS, BRIDGES, &C.

1. Short distance in Nairobi Town only metalled, other road murrum (gravel) surface.
2. Trap rock in Nairobi.
3. Fair.
4. Very dusty in dry and very muddy in wet weather. Rains last from end of March to June and during November and December, as a rule very dry during the other months but some years then a frequent showers between the rains.
5. Red earth extremely dusty when dry and greasy when wet.
6. 16 feet.
7. Several sharp bends on the descent to the Maragua River on the Fort Hall Road.
8. 12 per cent. Several but of short duration.
9. Maragua River to Fort Hall about 4 miles 6%. Maragua River towards Nairobi 4 miles. 7% Nandi Escarpment Kisumu Mumias Road 1 mile. Chania River towards Nairobi on Fort Hall Road 1/2 mile. 5%.
10. Average gradient about 4 to 5%.
11. All rivers bridged on main roads some wooden but being gradually replaced by steel.
12. Steel bridges carrying from 20 tons upwards.
13. 10 feet.
14. Fairly.

GOODS CARRIED BY ROAD AND THE METHOD OF CONVEYANCE.

1. Foodstuffs (beans, corn, flour, potatoes, &c.) and building materials (timber, corrugated iron and cement).
2. By cape cart or wagon and porters.
3. The standard load is 60 lbs.
4. Yes. 20 miles a day.
5. Open but covered conveyance desirable for perishable articles owing to heat.
6. Passengers either walk or ride bicycles, horses and mules their effects being carried by porters.
7. For goods 75 cents per ton per mile.
8. For goods yes. For passengers no as number of Europeans very small and natives could not pay at a rate which would be remunerative.
9. One 3-4 ton and one 5-6 ton Lancashire Motor Company's steam lorries with trailers and by private firms one six ton steam tractor and

and two Foster Steam waggons.
The two steam waggons in charge of P.W.D. not satisfactory owing to insufficient grip of driving wheels cost Rs. 1 per ton per mile running short trips aggregating about 6 to 8 miles a day.

10. See 9.
11. Occasionally. Open veld.

FUEL AND WATER.

1. Wood Petroleum Kerosine Borneo Petroleum Spirit 12/- ton.
2. Coal Rs. 63/- ton wood Petroleum 50 cents gallon Kerosine 75 cts. gallon Petroleum spirit Rs. 2/- per gallon.
3. Water procurable from rivers at frequent intervals on roads. Water supply in towns of Nairobi, Nakuru and Kisumu. Mombasa Water from tanks and wells.
4. All water except that at Mombasa and Kisumu of excellent quality.
5. Average distance between rivers say 4 miles on present roads but there are several stretches of waterless country 40-60 mile wide.

LABOUR, WORKSHOPS &C.

1. African, Indian and small quantity of European.
2. Indian yes.
3. European £. 150 to £. 200 per annum. Indian £. 50 to £. 100 per annum.
4. Workshops of Uganda Railway at Nairobi and Kisumu and Public Works Department shops at Mombasa.

~~30/-~~ W. H. TANNER.

25/1/08.

12th Nov 1912

Goods carried by road and the methods of conveyance.

1. Government Stores from the Crown Agents including Traction Engines, Building material, Medical Stores, Press Machinery, Cement &c &c.

2. Principally from Lombasa and then the Uganda Railway to Fort Florence and Matetebe.

For stations near the Railway line, stores are despatched intact. For stations away from the Railway these have to be made up into loads of 45 to 60 lbs, except such things as safes, and then special arrangements are made for transport either by carts or Hammies (the latter a special class of labourer) from the Coast.

10 lbs. Not more than 10 miles a day.

A tarpaulin properly fixed on a cart is all that is necessary.

Nearly everyone has to walk. Some Europeans travel in hammocks, others have horses, mules and bicycles. All Natives walk except the better class and those who can afford to purchase horses, mules or donkeys (vide East Africa and Uganda Hand Book for 1907.)

By carts. Tools at the rate of Re. 1 per ton per mile.

Yes, provided the traction employed is not too heavy, because in the rainy weather the roads are in many places very bad, and the traction has been known to stick almost up to its axles. This must be made and all fords and rivers properly bridged.

A few of the Uganda Transport traction engines did not prove so useful as some of the Uganda Railway ones did, but they are quite useful to convey natives &c during Railway strikes. Mule and moped lorries recently imported by the Public Works Department have not proved much of a success. Cost of the above engines varies from £500 to £1000.

One here recently used by Messrs Swift & Rutherford at their farm Punda Melia. The engine is about 8½ tons and draws 2 waggon.

worked between Nairobi and Punda Melia takes 8 1/2 tons of dead weight, but on a road with a 5% grade it would draw 10 tons with ease. The machine is used also as a digger - The Manufacturers are Cooper Ltd. Kings Lynn - If the firm was approached I have no doubt that they would construct the engine without the digger. Cost of the above about £550.

11. Yes, Nakuru-Saringo road but if the rivers were bridged and a few of the swamps drained there would be no difficulty for a light engine drawing a ~~light~~ load of 6 or 7 tons. The Saringo county is very hilly and a good deal of engineering is required to make proper roads.

Between Mombasa and Malindi the path is very good with the exception of 2 swamps and the large creeks at Shilia Tawa, Takungu and Kiliji. Each of these creeks would have to be considered as terminal posts, and some means of pontoon or log rafts required to take over passengers and goods. From Takungu to Malindi, a distance of 36 miles there is an excellent road path, and a Mombasa Rail could be easily laid down. From Mombasa to Wanga the road should be properly attended to and a few of the roads bridged. A light traction engine (similar to the one mentioned in 10) would prove of great assistance. In Nairobi the distances from the railway station to the various houses on the Hill and the offices are considerable. A good electric car with Edison's latest accumulators and a truck attached to carry baggage up to 2 or 3 tons would be most useful.

FUEL AND WATER.

- 1. Wood, Petroleum, Coal, Coke and Petrol (latter not preferred).
- 2. Petroleum - 12 annas per gallon.
- 3. Petroleum Spirit - Rs. 1/- per gallon.
- 4. Coal - Rs. 2/8 per Cwt.
- 5. Coke - Rs. 3/2 " "
- 6. In Mombasa, rain water, tanks and wells.

In Nairobi, fresh river water. Along the road from Mombasa to Malindi, well water at distances of 12 or 15 miles in each village except one place - Reke - which distance is 15 miles and the well water brackish.

1. Yes, except where well water is not good.

2. Yes, except on the Sekuru - Baringo road a stretch of 25 miles without water and another stretch of 15 or 16 miles. Between Malindi and Lamu via Kapini there is water everywhere and in the rains - too much. Between M'Pungu and with some distances between villages - say 10, 12 or 14 miles, but in the rains the entire, or a good part of the road is under water.

D. M. L. S.

Director Government Transport.