

EAST AFR. PROT.  
 No. 21091

21091  
 Recd 12 JUN 08

Governor. No.  
 21091

(Subject.)

1908

Wireless Telegraphy Bill

Last previous Paper

30  
 20297

Sends copies - also report, with check  
 on wireless telegraphy bet. Zanzibar &  
 Pemba

(Minutes.)

Mr. Johnson For your done in the  
 just place. 15/6

~~Mr. Ellis~~  
 Mr. Ellis

I As regards the Bill I see no  
 objection to its terms. In form it is  
 not the same as any other Order of  
 the kind I have seen but it  
 covers the whole ground. I think  
 sufficiently satisfactory

I did not understand the meaning  
 of the last sentence of 13279 &  
 there fore suggested telegraphing for a

And Tel. 2 July 1908  
 1767  
 20 July 1908  
 1767  
 20 July 1908  
 1767  
 20 July 1908  
 1767

Next subsequent Paper

70  
 21091

copy of the Bill before it was passed.  
We may, I think, approve, by telegraph,  
this bill being proceeded with & we  
might, at the same time, tell the  
other E African colonies to pass a  
simple order, giving the Govt control  
over wireless telegraphy (suggested)  
as a model S.Nig Order 25 of 1903,  
which is shorter than this Bill &  
sufficient to cover it.

(I proposed this on another paper  
some months ago but my minute  
appears to have gone astray.)

2. Encl. no. 3 gives sufficient  
information as to the working of the  
Zanzibar Pemba installation & we  
need not now wait, as proposed in  
my minute on 16419 for 70 reply  
to our letter on 11550 S.Nig, but may  
now refer the whole com. to Tables  
C in case for consideration.

If this is agreed to I will, to save  
time send the comm. privately to the Secy  
in orig to be returned, as the Committee  
will shortly meet.

C. J. [Signature]

This appears to be no parallel in the Off. order for  
specification of hours - i.e. the Off. order provides  
for the case of installation or working without

These at all - of - because besides the form & condition  
 of the license presumably (but the form of license is not before  
 us) he forfeits it, but I think such a bond should  
 also be an office against the state and subject  
 to forfeiture.

J.R. 24/6

Proceed as proposed.

J.R.

25/6

25/6

~~Mr. Dick~~

Mr. Reed

The license would follow the  
 model sent out in circular of  
 20 June 1905 & would therefore  
 contain the provision you suggest  
 as to forfeiture. I submit therefore  
 it need not be inserted in the Ord.  
 Such a provision is not in the S. 1. 1905  
 Ord. referred to in my report, nor I  
 think in any other (if any) other  
 similar Ord.

J.R. 24/6

Very truly yours I withdraw my suggestion

J.R. 24/6

25/6

Governor's Office

Nairobi, 12 JUN 08

MAY 18th 1908.

EAST AFRICA PROTECTORATE

No. 23P

(Encl. 4)

My Lord,

In obedience to the instructions contained

in Your Lordship's telegram of the 16th instant, I

Dft. Ordinance2 chartsCapt. Bardo

Mar. 7th

have the honour to transmit herewith copies of the draft Wireless Telegraphy Ordinance, of the Charts illustrating Mr. Gosling's report and of Captain Bardo's report on the installation of wireless telegraphy between Zanzibar and Pemba.

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

My Lord,

Your Lordship's most obedient,  
humble servant,



H.M. PRINCIPAL SECRETARY OF STATE

FOR THE COLONIES,

DOWNING STREET,

LONDON, S.W.

A Bill

To provide for the Regulation of Wireless Telegraphy.

BE it enacted by the Governor of the East Africa Protectorate, with the advice and consent of the Legislative Council thereof:—

Licences for wireless telegraphy.

1. (1) A person shall not establish any wireless telegraph station or instal any apparatus for wireless telegraphy in any place except under and in accordance with a licence granted in that behalf by the Governor.
- (2) Every such licence shall be in such form and for such period as the Governor may determine, and shall contain the terms, conditions and restrictions on and subject to which the licence is granted and any such licence may include two or more stations or places.
- (3) If any person establishes a wireless telegraph station without a licence in that behalf or instal or works any apparatus for wireless telegraphy without a licence in that behalf he shall be guilty of an offence under this Ordinance and on conviction he shall be liable to a fine not exceeding one thousand and five hundred rupees or to simple imprisonment for a term not exceeding twelve months or to both, and in either case be liable to forfeit any apparatus for wireless telegraphy installed or worked without a licence, but no proceedings shall be taken against any person under this Ordinance except by the order of the Governor.
- (4) If a Magistrate is satisfied by information on oath that there is reasonable ground for supposing that a wireless telegraph station has been established without a licence in that behalf or that any apparatus for wireless telegraphy has been installed or worked in any place or on board any ship within his jurisdiction without a licence in that behalf, he may grant a warrant to any police officer or any other officer appointed in that behalf by the Governor and named in the warrant, and a warrant so granted shall authorize the officer named therein to enter and inspect the station or place or ship and to seize any apparatus which appears to him to be used or intended to be used for wireless telegraphy therein.
- (5) The Governor may make regulations for prescribing the form and manner in which applications for licences under this Ordinance are to be made and fees payable on the grant of any such licence.



(6) The expression "Wireless Telegraphy" means any system of communication by telegraph as defined in the Indian Telegraph Act 1883, without the aid of any wire connecting the points from and at which the messages or other communications are sent and received. Provided that nothing in this Ordinance shall prevent any person from making or using electrical apparatus for actuating machinery or for any purpose other than the transmission of messages.

Licence for experimental purposes &c..

Where the applicant for a licence proves to the satisfaction of the Governor that the sole object of obtaining the licence is to enable him to conduct experiments in wireless telegraphy a licence for that purpose shall be granted, subject to such special terms, conditions and restrictions as the Governor may think proper, but shall not be subject to any rent or royalty.

2. A person shall not work any apparatus for wireless telegraphy installed on any ship whilst that ship is in the Protectorate waters, otherwise than in accordance with regulations made in that behalf by the Governor, and the Governor may by any such regulations impose penalties for the breach of any such regulations not exceeding one hundred and fifty rupees for each offence and may provide for the forfeiture on any such breach of any apparatus for wireless telegraphy installed or worked on such ship. Save as aforesaid nothing in this Ordinance shall apply to the working of apparatus for wireless telegraphy installed on any foreign ship.

Definitions

3. The term "ship" includes steamers, sailing ships, dhows, lighters, rafts, and every other form of boat.

The term "Magistrate" means a Magistrate holding a Subordinate Court of the first or second class.

4. This Ordinance may be cited as the "Wireless Telegraphy Ordinance 1908."

21091

Post Office JUN 08 70

Zanzibar 7th March 1908.

Sir,

In reply to your letter with references to the installation of Wireless Telegraphy between Zanzibar and Pemba, I have the honour to give you the following information:-

1. The system employed is Lodge-Muirheads and was obtained from the Wireless Telegraph Works, Elmers End Surrey.

2. The cost of the installation per set was as follows:-

One receiving set and one sending complete Rs. 6,400  
One tap recording instrument spare parts 668

1. Operator	£ 5-17-6
2 Operator Tubes	2- 7-0
3 " Wheels	3-10-6
2 Spark Gears	2- 3-0
1 Operator oil (bottle)	0- 3-0
1 " mercury	0- 7-0
2 Large insulators	3- 2-0
1 Armature for alternator and exciter	£1- 2-6
2 Platinum Points	14 5-0
1 Sending transformer coil	50- 0-0
Total	89-17-6

Rs. 1,350

All the above delivered

P.O.B. in London

Carried forward

Rs. 2,625

Brought forward Rs. 8,418

The cost of masts. One set of four including cement for foundations, and labour of erecting 5,824

The masts were obtained locally

Cost of building one hut, including labour and materials 2,352

Total Rs. 16,594

3 (A) The distance between the two stations is sixty two miles in a direct line.

(B) Of this distance 30 miles is over the sea, in the middle of the total distance.

(C) 32 miles over land, of which 21 miles is over land at Sannibar end and 11 miles is over land at Pemba end.

4 (A) The maker states our apparatus to be capable of working two hundred and fifty miles over sea. But under favourable conditions we could probably work very much further than this.

(B) It would be quite possible to work from either Sannibar or Pemba to Mozambique. We have already done so with men of war. Better results would be obtained if the station at Mozambique was exactly similar as ours and I do not think there would be any difficulty in working from Mozambique to Lamb. The cost for these small distances does not vary much. Lodge-Munroe could give all particulars.

5 The apparatus was fitted up entirely by local labour, under supervision of a man sent out by us. His agreement was to hand it over in working condition and to remain for one year for £200, Second Class passage out and home and house allowance in Sannibar.



3.

For cost of erection see Par. 2

6. The operators employed, one at each station and one relief man are Indians. Their wages are Rs. 75 per month each. They have not received any special training for wireless, as the ordinary Morse code is used, and were formerly operators on the ordinary Indian railway telegraphs. They appear to be fairly intelligent men, and are learning to make any small adjustments necessary without assistance. The sending has to be done somewhat slower than on an ordinary telegraphy key. And the receiving is on both Morse tape (inked) and by sound (telephone). They depend more on the telephone than the tape for reading as the tape signals are not always good and require much more adjusting to get them perfect. These operators were not at first used to reading by sound but so found they picked it up after a month's practice. To work the Morse receiver tape, and telephone both together as if a letter is missed on the telephone it can be checked on the tape.

7. Our experience of maintenance expenses is too short to say what the cost would be, but it should be very small, as there is nothing much wear out. The battery cells, cost only about one rupee each. There are only four and they last several months. The mercury costs only Rs. 2 for a year's supply. The dynamo brushes should not cost more than a few shillings a year. The transformer coil costs about 250 and is the most expensive item, the makers say this should last about 5 or 6 years.

The cost of working is small. It includes about 5 or 6 tons of cheapest paraffin oil for working the oil engine (Putters) a small quantity of engine oil, waste, matches, stationery etc.

(A) The installation is working since November last.

(B) It was interrupted several times during the first two months, but has been working well ever since, with the exception that lately it is sometimes interrupted towards 3 p.m. in the afternoon by atmospheric currents. We hope to be able shortly to improve on this and cut out most of the atmospheric currents by finer tuning. Heavy rain has no effect upon the signals if the insulators on the mast are properly fitted.

(C) The chief causes of interruption have been mechanical faults i.e. (1) The engine belt broke several times until we got a new one. (2) The starting lamp for the engine broke several times and we had no spare ones to replace it and had to wait for it to be repaired. It is advisable to have a spare belt and two spare lamps, to each engine. The insulators on the mast broke twice and we had no spare ones. These were made of a patent called Duriteite a sort of Valenite, which softened with the heat and we found were unsuitable to the climate. So we ordered porcelain ones. The makers are not introducing another and I believe better substitute for insulators that this is said not to soften under 400° F.

Nothing has gone wrong with the electrical apparatus, except that the clock work of the Morse recorder was very stiff and kept stopping. It has given no further trouble since I cleaned it with paraffin. The spring of this clock broke once, and as we had no spare ones I took it out and drilled a fresh hole in it, and it has gone all right ever since.

5. This did not cause a delay as it broke in the evening and I repaired it before next morning. There is nothing that can go wrong in the electrical apparatus with ordinary use except the cathode and the recorder coil which require occasional adjusting. But if they are properly set, and not interfered with, they should require touching more than once in about two months, or so, with ordinary use. The cathode requires cleaning and the necessary changing about once in two months, when it has to be re-adjusted. The battery may need recharging once in about six months. These adjustments have been done by myself, in Sumatra and by Johnson, the man sent out by the military in Fuzha. But the operators are now learning to change the cathode by themselves.

6. The rates charged between Sumatra and Fuzha are paper one for ten words including address.

10. The traffic is not yet sufficient to pay the working expenses including the wages, but I believe during the above season it will pay. It has not been working long enough yet to give us a fair idea, but the traffic appears to be increasing.

11. It took us until last month (January) to get the installation in proper working order, as we had to send to London for two extra boxes of Inductance coils. Since we fitted this up the signals have generally been quite reliable, and most of them are read first time without the mistake of a single letter. It is usual (at present) for the operators to send each message twice, although this is seldom necessary. The reason being that we have not very many messages and the operators were not very good at reading by sound, they do it partly for practice, and also in case any letter had been missed at the other end.

The staff consists at each station of one operator, one engine driver, who lives in the hut for night watchman and gets Rs.20 per month, and one messenger at Rs.12 per month. The engine driver need not be a skilled man, as the oil engine is very easy to start and requires very little attention. It is necessary to have a man who understands the wireless and the oil engine to supervise the stations, in case of repairs being necessary to engines or instruments. But when the stations are in working order one man should be able to supervise three or four stations under ordinary conditions, to overhaul the oil engines and dynamos, and instruments occasionally, and inspect the stations periodically and do any small mechanical repairs.

12. There naturally might be occasions when delays would occur if the stations were left for long in charge of unskilled operators ; but I think that after a few months experience and if all the contingencies I have mentioned are provided for, a fairly intelligent Indian could carry it on, if the station was visited about once a month by an expert. There would be sure to be occasions when an interruption would occur unless the Indian operator had some sort of knowledge, but these interruptions should not be frequent when the station is in proper working order. It would be expensive to keep an expert at each station, but of course that would ensure the better working. As only a practical knowledge is necessary to the working and adjustment I think the operators would learn sufficiently in time, to be left alone for say one month. It is proposed to erect a station at Muzam to work in communication with Pooka, it would be an advantage to have a similar station to the Pooka one of exactly the same size and capacity. The distance that it is possible to work in such greater over sea than over land, so that I think it would be possible with our present installation to work direct

7.

to Lima from Ecuador under favourable conditions of weather, the distance being 300 miles. The following is an extract from a private letter I have just received from the masters in January 1908. "We have just equipped ten aviators for the Peruvian Navy. The aviators were about 100 feet above the water but much smaller than the ones you have. I have been informed that they are in the habit of maintaining communication up to a distance of 270 miles over sea".

I have &c.

SN/ F. Stanley Bardo

Port Officer

F.S. Since writing the above we have had an interruption lasting 27 hours, being the longest we have had since the station commenced working. It was due to the breaking down of the oil engine. The exhaust valve became carbonised, and got slightly burnt. This could have been cured by filing and grinding to shape again; but we found it simpler to cast a new valve which we did in the Public Works Shop. The cause of it was neglect in keeping it clean the engine should be taken to pieces once in 6 or 7 weeks and the working parts thoroughly cleaned of all the carbon that will be found. Our engine had been running for five months without being overhauled when this breakdown occurred.

SN/ F.S. Bardo,

Port Officer.



77 E.A.P

for  
21091

*[Handwritten initials]*

Sent 2.15<sup>p.m.</sup>  
2/7

DRAFT

Unmailed

2 July 08

Tolson

Sadler

Nardi

Duggles

referring to your draft No

242

you

attached with

may please

write Bill

Crow

2/4/08

Ans. 4370

Pf. to Mr. Johnson  
when Tolson has gone  
and then return to  
draft for the suggested  
draft

Seen for 2/7