

EAST AFR. PROT.
38249

C.O.
38249
REC'D
3 DEC 12

27/12

own Agents

wireless Tel. Station at Mombasa.

Date.
1912

2 Dec.
at previous Paper.

Submit tenders, with letter from Cons. Engrs recommending acceptance of Marconi Co. tender of £3656. 16. 10, or £9450. 17. 10 if certain items of plant & materials are omitted.

35924

W Johnson

For your Mem. please

[Action in 35924 not yet taken]
WJS 4/11/12

~~Robert~~ Li-G. Felder

In the case of Bahamas - see minutes on 35999 and 20021 - it has been decided to accept the cheaper tender of the Anglo-French Co. (the latter system already installed at Jamaica wireless station belonging to the direct Tel. Co.) The reasons here advanced for preferring the Marconi tender

16 Dec 13

subsequent Paper
a
40011

~~John~~ Sir J. Anderson

I wholly fail to understand the procedure. - Tenders are invited from 3 firms: on this receipt, the C.E.'s communicate with one only, inviting them to send in a lower tender. No communication is made to the others. C.E. then tele us that the tender of that firm is still high, but recommended us to accept it for a reason which (as Mr. Parker believes) is not a valid one. We are not told the amount of the other tenders, and the C.E. have constructed the form of tender in such a way that it is impossible for any layman to find out the amount for himself.

The favored tender is Marconi.

This may be all right: but, considering what has been indicated about the Marconi business, I can imagine nothing better calculated to ^{excite} bring - through doubtless unformed - suspicion in the minds of people who know nothing about the question but guide themselves by the ordinary rules

was this informed as to this P.M.

not conclusive. Under the ~~Radio~~ Convention ~~the~~ ~~to~~ ~~take~~ ~~of~~ ~~communication~~ ~~is~~ ~~compulsory~~, ~~regardless~~ ~~of~~ ~~the~~ ~~system~~ ~~employed~~, ~~but~~ ~~as~~ ~~to~~ ~~communication~~ ~~between~~ ~~two~~ ~~shore~~ ~~stations~~ ~~see~~ ~~art.~~ ~~21~~ (last paragraph) of the recent Convention & paragraph 8 of Conf. Report of the British Delegate. The ~~stations~~ ^{are for stations} in Italian Colonies I do not think the Italian Govt. in view of art. 21 ~~of~~ ~~the~~ ~~Convention~~ would decline to communicate with a station at Mombasa if we adopted ~~the~~ system other than Marconi's. Before deciding which tender to accept -

1. ~~to~~ write to J.O. sending report of No 35924, ~~with~~ ~~the~~ ~~text~~ ~~of~~ ~~the~~ ~~report~~ ~~and~~ ~~substituting~~ ~~for~~ ~~(a)~~ "that Govt. have not yet finally decided what apparatus to install at Mombasa but presume that, having regard to art. 21 of the Radio-Tele. Convention of 15 July 1912, the Italian Stations will communicate with the station at Mombasa whatever system is adopted at that place. [We had better get G.P.O. concurrence in this reply & to save time to arrange to do so promptly]

I will also ask Mr. Bruce ~~to~~ what will be the total cost of the Anglo-French tender which is not apparent from the papers.

Geo. J. H. R. 5/3

of business.

I should send these papers back to
the CA. I call for full explanations on
the points both. Please assured.

And in case with ask F.O. or W
Johna papers.

P.D. 4/12

at once

Chf. 12.12

ALL COMMUNICATIONS TO BE ADDRESSED TO THE CROWN AGENTS FOR THE COLONIES, THE ABOVE REFERENCE AND THE DATE OF THIS LETTER BEING QUOTED.



C.O.
38249
REC'D
DEC 3 1912

TELEGRAMS, "CROWN, LONDON,"
TELEPHONE 1632 VICTORIA.

WHITEHALL GARDENS,
LONDON, S.W.

2nd December 1912.

Sir,

Wireless Telegraphy - East Africa Protectorate.

Lucas
191095

I have the honour to refer to your letter of the 15th of July No.19095/1912 relative to the proposed wireless telegraph station at Mombasa. In pursuance of your instructions we requested Messrs Preece Cardew and Snell to draw up a specification for the proposed installation and on their recommendation we invited tenders from the Marconi Company, the Anglo-French Wireless Company, and from Mr.V. Gandil, the agent of the Poulsen Company.

Tenders and connected correspondence original for return.

2. I now enclose for the information of the Secretary of State these three tenders and connected correspondence, in original for return, together with a copy of Messrs Preece Cardew and Snell's recommendation thereon.

3. We await the Secretary of State's instructions before taking further action.

I have the honour to be, Sir,
Your obedient servant,

J. Preece
for Crown Agents.

Under Secretary of State,
Colonial Office.

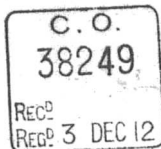
COPY

CWK/W.
PREECE, CARDEW & SNELL,
CONSULTING ENGINEERS.

8, QUEEN ANNE'S GATE,
WESTMINSTER, S.W.

27th November 1912.

SIR WILLIAM H. PREECE.
MAJOR-P-CARDW.
A. H. PREECE. J. F. O. SNELL.
LLEWELLYN PREECE.
J. H. WOODWARD. S. S. MOORE EDE.



The Crown Agents for the Colonies.
WHITEHALL GARDENS,
S. W.

Gentlemen,

Mombasa Wireless Station.
R. 201/19.

With reference to the tenders submitted by Messrs Marconi's Wireless Telegraph Co., and the Anglo French Wireless Co., we have carefully examined these and as the price was somewhat over £3,000 we wrote to Messrs Marconi on the 15th instant proposing various modifications with a view to simplifying and reducing the cost of the plant.

2. We have today received from Messrs Marconi a revised tender, dated the 26th instant, based on these proposals, and we are forwarding same herewith. It will be noted that the total now amounts to £3,656. 16. 10. for the complete Station, including the services of the Erecting Engineer, as compared with £3,817. 13. 4. in the original tender.

3. If it is considered essential to further reduce the price of the Station to be paid in the first instance, we would suggest that the following items be omitted from the contract, and they could be indented for at a later date: -

<u>Item No. 57.</u>		£.	s.	d.
Spare Field Coil for Motor. ...		3.	9.	0.
" Armature for Motor. ...		29.	18.	0.
" " " Alternator....		55.	4.	0.

Item No. 58.

Spare Field Coil for Dynamo. ...		5.	3.	6.
" Armature for Dynamo. ...		27.	12.	0.

4. We consider that the Electrician's Tool Box, Item No. 74 at £14. 7. 6., and the Fresh Water Still, Item No. 82, £40. 5. 0. could be omitted altogether. The total amount of the foregoing reductions would therefore be £175. 19. 0.
5. We might further point out that if the Colonial Officers are satisfied that they are capable of erecting the Station and starting it to work, the services of Messrs Marconi's Engineer, for which they sum of £447. 10. 0. is quoted, would not be required. This sum, therefore, could also be deducted; but we should not however recommend the adoption of this course.
6. Although Messrs Marconi's tender is higher than that submitted by the Anglo French Wireless Co., it will have to be accepted in preference to the latter, seeing that the Mombasa Station will have to communicate with the existing Marconi Stations in Italian Somaliland, which, under the terms of the Radio-telegraphic Convention, would be entitled to

refuse

refuse to reply to the Station at Lombase if it were not supplied by the Marconi Company.

7.

We therefore recommend the acceptance of the Marconi Company's revised tender of £3,656. 16. 10; or £3,480. 17. 10. if our recommendation to omit the above-mentioned items of plant and materials, amounting to £175. 19. 0. be adopted.

--- 8.

We are returning herewith the original tender, and we are also sending Messrs Marconi's revised tender of the 26th instant. We have kept Messrs Marconi's copies of the original tender and revised tender at this office for future reference.

We are,

Gentlemen,

Your obedient servants

PREECE, CARDEW & SNELL.

Enclosures.

THE GOVERNMENT OF BRITISH EAST AFRICA.

Requisition No. E. 201/19.

SPECIFICATION

-- for --

WIRELESS STATION IN MOMBASA,

BRITISH EAST AFRICA.

-----:oOo:-----

PRICE, CARDEW & SNELL,

Engineers.

October 1912.

A N A G R E E M E N T made the _____ day
of _____ 1912 B E T W E E N SIR REGINALD
LAURENCE ANTROBUS K.C.M.G., C.B., LAURICE ALEXANDER
CALERON, C.M.G., late a Major in His Majesty's Corps of
Royal Engineers and WILLIAM HEPWORTH MERCER Esquire, C.M.G.
all of Whitehall Gardens in the City of Westminster the
Crown Agents for the Colonies (hereinafter referred to as
"the Crown Agents") acting for and on behalf of the Govern-
ment of British East Africa (hereinafter referred to as
"the Government") of the one part AND

(hereinafter referred to as "the Contractors") of the other
part.

WHEREAS the Government who are desirous of procuring
the construction and supply of a radiotelegraph station
in Lombasa have received from the said Contractors a Tender
to execute the several works mentioned enumerated or referred
to in the Specifications hereto at the price of

which Tender the Government have accepted.

NOW these presents witness that in consideration of
the moneys hereinafter covenanted to be paid to the said
Contractors they the said Contractors for themselves their
successors and assigns covenant with the Crown Agents and
the Crown Agents as the Agents of and so as to bind the
Government so far as the said provisions are to be complied
with by them (but not so as to impose any personal liability
on the Crown Agents or any of them or on any member or
officer of the Government) hereby covenant with the said

Contractors their successors and assigns in the manner following that is to say:-

1. THE Contractors will forthwith perform and execute in a good and workmanlike manner and to the satisfaction of the Engineers all and every the works described mentioned enumerated or referred to in the Specifications and such other works in connection therewith or incidental thereto as shall be ordered by the Engineers in writing and will find and provide and be at the expense of all materials labour carriage and other matters and things mentioned or referred in the Specifications and shall and will execute complete and deliver the whole of the works in a good substantial and workmanlike manner according to the Specifications and the General Conditions within the time and subject to the payments for non-completion within such time set forth in the General Conditions.

2. THE Crown Agents shall and will pay the said sum of
(in the Schedules hereto referred to as "the Contract Price") to the Contractors at the times and manner and according to the terms and conditions stated and contained in the General Conditions.

3. AND it is hereby agreed and declared that in the construction of this Contract and of the said schedules hereto the words "the Contract" shall mean and include this Contract and the Schedules hereto. The words "the General Conditions" shall mean the General Conditions contained in the First Schedule hereto including also the special Conditions of Contract attached. The words "the Specifications" shall mean the Specifications contained in the Second Schedule hereto. The words "the

Schedule of Prices" shall mean the prices contained in the Third Schedule hereto. The words "the Schedules" shall mean and include the First, Second and Third Schedules hereto attached.

IN WITNESS WHEREOF the Crown Agents have hereunto set their respective hands and seals and the Contractors have caused their Common Seal to be hereunto affixed the day and year first above-written.

CROWN AGENTS FOR THE COLONIES.

GENERAL CONDITIONS OF CONTRACT

No. 1.

1. In these conditions and in any specifications or special conditions annexed hereto—
 - (a) The words "Crown Agents" shall mean the Crown Agents for the Colonies.
 - (b) The word "Engineer" shall mean the Consulting Engineer or Engineers for the time being of the works for which the work under this Contract is required.
 - (c) The word "Inspector" shall mean the Chief Inspecting Engineer appointed by the Crown Agents to inspect the work.
 - (d) The word "Colony" shall mean the Colony or Protectorate for which the work is intended.
 - (e) The word "Contractor" shall mean any person or persons whose tender for the work referred to shall be accepted by the Crown Agents.
 - (f) The word "work" shall mean materials of every kind in every stage of their preparation.
2. The Contractor shall not without the written consent of the Crown Agents assign or sublet this Contract or any part thereof nor allow any portion of the work to be done otherwise than in his own establishment. Contract not to be sublet.
3. The Contractor shall indemnify the Crown Agents against all claims at any time on account of patent rights or royalties whether for manufacture or for use in the Colony. Contractor to indemnify Crown Agents.
4. The Crown Agents or the Engineer shall have the power of requiring reasonable alterations in the work or in any of its details and if such alterations do not involve extra expense no payment shall be made in respect of them. If the alterations diminish the value of the work to be done the Contractor shall allow a reduction in the contract sum of such amount as the Engineer shall certify to be reasonable or as shall when there is no Engineer be agreed upon. Alterations.
5. The Contractor shall not receive payment beyond the Contract sum for any work which he may consider should be paid for as an extra unless such work shall have been ordered in writing by the Crown Agents as extra work. Payment for extra work.
6. The Crown Agents shall have the power of ordering reasonable additions to or deductions from the quantities or weights specified and these additions or deductions shall be allowed for at the Contract rates. Additions or deductions.
7. In the event of additions to the quantities being ordered the Crown Agents may if they think it necessary extend the time for delivery to such extent as they may consider reasonable and proper. Extension of time for additions.
8. Should there be any discrepancy between the Contract Drawings and the Specification or any inconsistency or omission in either of them reference must be made to the Inspector (or to the Crown Agents when no Inspector has been appointed) for an explanation and the Contractor will be held responsible for any errors that may occur in the work through neglect of this precaution. Discrepancies between Drawings and Specification.
9. The Contractor shall deliver the whole of the work complete in all its parts and furnished with every necessary detail and fitting notwithstanding any omission or inconsistency in the Contract Drawings and Specification. The work to be delivered complete.
10. Before proceeding to execute any work the Contractor shall obtain the Inspector's approval of the manner in which the Contractor proposes to execute each portion of the work and shall furnish such drawings or information as the Inspector shall require. Inspector to approve methods.
11. The Contractor shall take all risks of accident or damage to the work from whatever cause arising and shall be responsible for the sufficiency of all means used by him for the fulfilment of the Contract and shall not be relieved from such responsibility by any approval which may have been given by the Crown Agents the Engineer or the Inspector. Contractor to take all risks.
12. All labour assistance tools gauges articles or apparatus which the Inspector may require for the purpose of testing inspection or gauging shall be provided by the Contractor free of charge. Means of testing.
13. The work is to be executed in strict conformity with the Contract Drawings and Specification. The materials and fittings of every kind used are to be free from defects and unless otherwise specified are to be of the best description of their respective kinds. The workmanship is to be of first class character and the degree of finish such as the Inspector shall require. Work to be to satisfaction of Inspector.
14. The Inspector will adopt any means he may think fit to satisfy himself that the materials specified are actually used and he shall have power throughout the Contract either personally or by deputy to inspect in any manner he may think fit without giving previous notice the entire work or any part thereof at every stage of progress and wherever the work or any part thereof may be in progress; to amend and alter anything he may think fit; and to reject any parts of the work of which he may disapprove. If any work is so rejected the Contractor shall at once execute it afresh to the entire satisfaction of the Inspector. Powers of Inspector.
15. The Contractor shall give the Inspector at least one week's notice in writing previous to any of the work being ready for inspection. Notice to be given to Inspector.
16. When tests or analyses are considered necessary by the Engineer or Inspector in addition to those made by the Inspector on the Contractor's or Sub-Contractor's premises the tests or analyses will be made by persons appointed by the Crown Agents. The Contractor will pay the cost of supply and carriage of samples. The cost of the tests or analyses will be paid by the Crown Agents if they show the material to be in accordance with the Specification; but if not their cost will be borne by the Contractor. Check tests or analyses.
17. The Contractor shall if required weigh the whole or any portion of the work in the presence of the Inspector or his deputy and where the work is to be paid for by weight the Contractor shall only be paid for the net weights delivered. Notwithstanding the existence of any trade custom the weight of wrappers battens or other material used in packing shall not be included in the weight for payment. Payment by weight.
18. The Contractor must provide and include in his Contract sum the cost of all packing including cases materials and labour. He will be held responsible for the work being so packed as to ensure its being free from loss or injury on arrival at its destination in the Colony. Packing.
19. Until the Inspector shall have given his certificate of approval none of the work will be considered as accepted by the Crown Agents nor must it be sent away and should any defects be discovered before shipment they must be immediately remedied by the Contractor. Inspector's certificates.
20. The work is to be delivered free on board vessels lying in any dock alongside any pier or wharf or in any part of the stream at any of the ports named in the Tender as the Crown Agents may direct; the cost of such delivery must be included in the Contract sum. Should the Crown Agents require delivery to be made at a port not named in the Tender the Contractor shall only receive the exact additional or less (as the case may be) cost of delivery at that port. The work will remain at the Contractor's risk in all respects until delivery has been taken when the Crown Agents' risk will begin. Place of delivery.
21. All Dock and Harbour dues and charges (including Clyde dues) are to be paid by the Contractor and must be included in the Contract sum but all goods shipped by the Crown Agents other than coal coals and railway materials and stores are exempt in the United Kingdom from Dock and Harbour dues or charges except in London and Bristol where full Dock dues are payable on Railway Materials and Stores and Coal and two-thirds Dock dues on other Goods. Dock and Harbour dues.

and is hereby required to be present during the execution of the works and shall be responsible for the due and proper management of the works. The Contractors shall also at all times during the continuance of this Contract provide an office in some convenient place in the Colony where notices can be served upon them.

Contractors to indemnify Government against consequence of accidents.

3. The Contractors shall be solely responsible for and indemnify and keep indemnified the Government against all accidents, damages, claims and losses which may occur or be incurred or claimed in or by reason of the execution of the works for the use of any plant or other appliances necessary therefor or from failure to observe any of the stipulations herein contained from inefficient workmanship or any other cause which in the opinion of the Engineers shall have been within the control of the Contractors whether the Engineers have or have not given any instructions in reference to the matter in connection with which such accidents, damages, claims or losses have occurred, been incurred or claimed and in the event of the Colony discharging any such damages, claims and losses by reason of the default of the Contractors the Colony may deduct the amount thus disbursed from any monies then due or thereafter to become due to the Contractors hereunder or may otherwise recover such amount from the Contractors.

Engineers to have access to the works and power to inspect and test.

4. The Engineers and such assistants as they may require or appoint shall at all times during the progress of the works have free access to the works

and all yards and other places which shall for the time being be in the possession or occupation of the Contractors for the purposes of this Contract and shall be entitled to inspect and test at all reasonable times any part of the works during the manufacture or before delivery of the same whether at the works of the Contractor or of any Company or firm or person employed by them and the Contractors shall afford every facility, make all necessary arrangements and provide all instruments and power for any such inspection or testing.

The provision of this clause shall be in addition and without prejudice to the provisions as to testing contained in the General Conditions.

Guarantees of efficiency and maintenance of works.

5. The Contractors also guarantee the efficiency of the works for a period of twelve months after the date of the Engineers' Certificate of the completion thereof. If during such period any defects in materials or workmanship shall appear or if the efficiency of the works shall in any way deteriorate the Contractors shall forthwith make good any such defects or deterioration at their own cost and to the satisfaction of the Engineers or in the event of the Contractors failing to do so the Engineers may (if they think fit) make good such defects or deterioration and the cost thereof as certified by the Engineers shall be paid by the Contractors to the Colony or may be deducted by them or the Crown Agents from any monies due or to become due to the Contractors hereunder.

Payments.

6. The payment referred to in Clause 25 of

the General Conditions shall be:-

(a) An instalment of 70 per cent. of the value according to the Schedule of Prices of each consignment of Plant.

(b) An instalment of 15 per cent. of the Contract Price (as certified by the Consulting Engineers) shall be paid within fourteen days after the production to the Crown Agents of a written Certificate from the Government of British East Africa to the effect that all the works have been duly completed and are in proper working order and

(c) The balance of the Contract Price shall be paid after the expiration of the period during which the works are guaranteed by the Contractors under this Contract and within fourteen days after the production to the Crown Agents of a written Certificate from the Government to the effect that the works have since the date of their completion been worked to his satisfaction and in the manner provided by this Contract and that the Contractors have duly performed all their other obligations under this Contract.

7. The Engineer supplied by the Contractor remains their agent and nothing in this Contract contained shall establish the relation of Master and servant as between the Government and the Contractors' employe. But he shall be subject to all Government rules and regulations and if required he shall enter into a local contract with the Government.

Engineer to remain the Agent of the Contractors.

Certificate of completion to be given.

8. When the works shall have been completed to the satisfaction of the Engineers they shall give the Contractors a certificate of the completion thereof and thereupon the Government shall take over the works.

Service of Notices on Contractors.

9. All Notices to be given to the Contractors under this Contract shall be in writing under the hand of the Crown Agents or of the Consulting Engineers or some person authorised by them or of the Postmaster-General, British East Africa, or some other person authorised by him and shall either be delivered to the Contractors at their registered office above-mentioned or left for the Contractors with their Engineer at their office in the Colony and every such notice shall be deemed to have been given to and received by the Contractors at the time when it shall have been so delivered or left or posted by registered or other post.

THE SECOND SCHEDULE.

S P E C I F I C A T I O N

-- for --

W I R E L E S S A P P A R A T U S .

General.

1. This specification provides for:-

- (a) The supply and delivery f.o.b. British Port, of the apparatus for the Radiotelegraph Station including Oil Engine, Motor-Generators, Battery, Switchboard, Transmitting apparatus, Receiving apparatus, Masts, Aerial Wires, and Tools etc.
- (b) The services of an expert engineer to superintend the erection and assist the Government Staff in obtaining a thorough insight into the details of working the apparatus and to remain at the Government's disposal for the period of three months in the Colony after the station has satisfactorily complied with the final test.

2. The Government will deliver all the materials upon the selected site; arrange for the supply of the electricity at 200 volts continuous current to the switchboard; and provide and erect the building and supply all labour required including the necessary operators.

3. The Contractors shall be responsible for the complete erection of the Station and for the due carrying out of the tests as set forth below to the

satisfaction of the Postmaster-General, British East Africa, and for the maintenance of the Station in thoroughly satisfactory working condition for a period of twelve months after the completion of the tests.

4. The firms tendering shall supply full plans and drawings of all apparatus offered and of the proposed arrangement of the plant aerial and earth connections showing the dimensions of buildings and land area required for the station.

After the Contract is let, drawings showing all essential details of the plant and materials to be used, to be submitted for approval before the work is put in hand. It is to be understood however that the approval of drawings will not exonerate the Contractors from any responsibility in connection with the work and obtaining the results required by this Specification.

Each Drawing submitted to have the following Schedule in large letters at the bottom right-hand corner:-

MOMBASA WIRELESS STATION

Contractors:- (1).....

Drawing No:- (2).....

(1) Contractors' Name to be inserted here.

(2) Contractors' Drawing No. to be inserted here.

Contractors to send to the Engineers copies of all orders to sub-contractors.

5. The firms tendering must state what distance they will guarantee that the station, when

erected in accordance with their plans will be capable of carrying on satisfactory communication both over sea and over land at all times except only when by reason of atmospheric disturbances the working of the station shall become dangerous to the staff employed therein. The final test will include transmission and reception of messages from a properly equipped ship at this distance.

Climate. 6. As the plant is required for working in a hot damp climate special attention must be given to the materials used in construction of the apparatus and for insulation. Wood to be used as sparingly as possible and where essential only well seasoned Teak to be employed.

Musical Note. 7. The signals transmitted from this station must have a clear musical note capable of being read at all times including those of severe atmospheric disturbances.

Syntony. 8. The installation must embody the best and most recent practice in syntony with a view to freedom from interference and disturbance and must comply in every respect with the requirements of the Radiotelegraph Convention including inter-communication with the systems usually employed on board ships.

Wave length. 9. The Station to be capable normally of sending waves 600 and 1800 metres in length, but it must also be capable of transmitting any other waves varying in length from 600 to 2000 metres and it must be capable of actuating acoustic receivers over the full range at 30 words per minute.

The variation from each wave length must not exceed 5 per cent, measured according to wave length

standard adopted by the British Post Office, but this limitation is only to apply to the wave lengths used in effective transmission. Should any wave lengths outside these limits be emitted as subsidiary to the effective wave lengths they must not affect a similar receiving apparatus to that employed at the Station at a distance of three per cent. of the normal range of the Station when the receiving apparatus is tuned to the subsidiary wave.

Precaution
against
lightning.

10. Adequate precaution to be provided by the Contractors against injury by lightning to operators and material both outside and inside the buildings and to comprise apparatus for earthing by approved means the aerial conductors externally during thunderstorms.

Quality of
Apparatus
etc.

11. All apparatus and material included by the Contractors in this Contract, whether specifically mentioned in this specification or not, is to be of the very best manufactured and in every respect suitable for use in a tropical climate.

Precaution
against
shocks.

12. Adequate safeguards to be provided against electric shocks due to accidental contact with, or to development of faults in, the high tension transmitting apparatus, together with suitable means for cutting off the supply of power when effecting adjustments. Full particulars of the protection proposed must be submitted with the tender.

Extent of
Contract.

13. The price to include all apparatus, appliances and material whatsoever required to complete the installation.

14. The firms tendering are at liberty to put forward other proposals for the Aerial, Earth and

Apparatus required, but complete plans and specifications of the alternative proposals must be attached to the tender.

AERIAL.

Aerial. 15. The Aerial system to consist preferably of an Aerial of the "T" type. The Aerial to be provided with the requisite leading-in insulator, and strain insulators and other fittings.

Masts. 16. Preferably two masts to be provided each to be 200 feet in height. The masts to be provided, if necessary, with anchors and stays, and with standing and running rigging, and hoisting and lowering gear for the aerial.

Earth. 17. The Earth to consist preferably of two semi-circles of galvanized iron plates arranged on edge symmetrically on either side of the Power House, connected to symmetrically disposed centres by radial copper wires, the symmetrically disposed centres in turn being connected by insulated cable to the main Earth terminal in the Power House.

This station will be erected on the island of Kombsa, which is almost entirely coral rock, the depth of soil not exceeding 18". The soil is very dry.

GENERATING PLANT.

Oil engine. 18. One double cylinder vertical engine to be supplied, to work with ordinary paraffin oil or petrol as required and to drive by means of a belt the motor generator specified below when the alternator is running on open circuit and the motor on full load as a dynamo, and also to drive the

alternator on full load with the motor on open circuit.

19. The engine to be of an approved design complete with water tanks, water circulating pipes, exhaust silencer, fuel tanks, fuel pipe connections, foundation bolts and all usual accessories.

20. The belt to be of Hendry's laminated leather, best quality, of suitable size for transmitting the full power of the engine.

21. One Motor-Generator to be supplied to have a motor to be shunt wound 150 volts and capable of driving continuously at full load an alternating current generator of 5 K.W. output having a periodicity which will give a musical note in the receiving apparatus. Alternator to be provided with direct coupled exciter. Speed not to exceed 1,500 revolutions per minute. The necessary starting and regulating apparatus for the motor-generator to be included and fixed in the operator's room. The motor to also act, when desired, as a dynamo suitable for charging the battery. For this purpose it is to be capable of giving its full output at 210 volts.

A battery charging motor-generator capable of charging the battery at its maximum rate to be included. To consist of two direct current machines coupled together and mounted on one bedplate. The motor to take its supply from the 200 volt town mains. Speed not to exceed 1,000 r.p.m.

The necessary starter and shunt regulator with all wires and connections to be provided.

22. The temperature rise of any part of the motor-generators not to exceed 50 degs. Fahr. above

belt.

Motor-Generators.

Temperature rise.

the normal temperature in Mombasa which is approximately 90 degs. Fahr.

Battery.

23. One Battery of accumulators preferably of the Tudor type of 80 cells to have a capacity of approximately 250 ampere hours, at a three hours rate, in glass boxes with the plates supplied ready burnt to the connecting bars, complete with all fittings, terminals, insulators, spray plates, stands, acid etc.

Switchboard.

24. To consist of enamel slate panels in iron frame, with all necessary measuring instruments, switches, circuit-breakers and cutouts for controlling the motor generators, battery and the different circuits, together with all back connections, thimbles and usual accessories. The switchboard to be connected to the various machines and battery by British made high tension vulcanized indiarubber lead-sheathed cable of ample capacity for carrying continuously the maximum currents in the respective circuits. The necessary arrangements to be made on this switchboard for receiving a pair of mains for the public electricity supply - 200 volts continuous current - from which the battery-charging motor-generator will take its current. Drawing No. 2951 attached is an outline diagram showing the relations of the various items of plant. A complete diagram of connections, showing all instruments, circuit-breakers, cutouts, switches and other fittings, to be submitted with tender.

CHEQUER PLATING.

25. Wrought iron chequer plating with ribbed upper surface and suitable curbs to be provided for

covering all trenches in which the piping and connecting cables will be laid.

TRANSMITTING APPARATUS.

26. The Transmitting Apparatus shall be of the latest and most suitable design and capable of transmitting to the aerial any power up to 5 K.W. The firms tendering shall give full details and plans showing the items they offer.

RECEIVING APPARATUS.

27. Two separate and distinct Detectors and receiving apparatus to be supplied: they shall be of the latest and most suitable design. The firms tendering to give full details and plans shewing the apparatus they offer.

TESTING INSTRUMENTS.

28. A suitable testing buzzer to be provided and permanently installed for the purpose of instantaneously testing the receiver Circuits and a suitable Hot Wire Ammeter installed for the purpose of indicating the conditions of syntony of the transmitting circuits.

A Bridge Megger for measurement of Conductor and Insulation Resistance, and also a portable wave-meter covering the full range of the transmitting circuits to be provided, and a Detector galvanometer with cells.

spare tools
and sundries.

29. The necessary spares for one year's working to be supplied with the installation, together with all the usual spanners and other tools required for the

various machines, and all special tools for use with the condensers and other special parts to be furnished.

Duplicates and spare parts.

30. This tender to include a complete list of duplicate apparatus, spare parts etc. which the tenderers consider desirable.

A spare armature for each of the machines to be included.

Testing.

31. The whole of the machinery, plant and apparatus to be tested at the makers' works. The motor-generators and oil engine to be run for 6 hours on full load and, in addition, the wireless motor-generator to be run for one hour with the direct-current machine acting as a dynamo and giving its full output at 210 volts.

Packing.

32. Special attention must be given to the packing of all apparatus and material. The Contractors will be held responsible for any damage arising during transit which can be shown to be due to faulty packing.

THE THIRD SCHEDULE.

SCHEDULE OF PRICES.

The price entered against each item set out below shows how the Contract Price is made up. - The prices entered includes in all cases the plant or materials and their delivery f.o.b. British Port, in accordance with the provisions of the Specification, General Conditions and Special Conditions herewith, and the payment of all royalties and fees (if any) on patented articles.

<u>Description.</u>	<u>Price.</u>
	£. s. d.
Masts and Rigging.....	
Aerial, Insulators and Fittings.....	
Earth and fittings.....	
Oil Engine, accessories and fittings.....	
Battery charging Motor-generator.....	
Wireless Motor-generator.....	
Accumulators.....	
Switchboard and connecting cables.....	
Chequer Plating.....	
Transmitting apparatus.....	
Receiving apparatus.....	
Spare parts, tools etc. as given in schedule to be attached.....	
Testing instruments.....	
Services of Engineer to superintend erection and to remain afterwards in Colony for 3 months including travelling expenses, time occupied on journeys to and fro, allowances, insurance and all costs.....	
Total =	£ -----
Total price erected, if masts are excluded from this Contract.....	£ -----
Total price plant and apparatus exclud- ing masts supplied f.o.b.....	£ -----

T E N D E R .

TO THE CROWN AGENTS FOR THE COLONIES.

We hereby offer to supply and deliver f.o.b. within weeks from the date of the acceptance of this Tender, the works described in the Specification hereto annexed, and in accordance with the General Conditions, Special Conditions, Plans and Drawings submitted herewith, and to duly perform all the other obligations which are to be undertaken by the Contractors for the sum of:-

£ : : ()
 or £ : : ()
 or £ : : ()

The Money columns in the Schedule of Prices to this Tender have been duly filled in by us, and we agree to be bound thereby.

And we further undertake that in event of this Tender being accepted, to execute, when called upon by you so to do, a formal Contract for the due performance of the works, subject to such final additions thereto and alterations therein as in your opinion may be necessary to adapt the same to the conditions of this Tender.

Dated the day of 1912.

Signed.....

Address.....

.....

T E N D E R .

TO THE CROWN AGENTS FOR THE COLONIES.

We hereby offer to supply and deliver f.o.b. within _____ weeks from the date of the acceptance of this Tender, the works described in the Specification hereto annexed, and in accordance with the General Conditions, Special Conditions, Plans and Drawings submitted herewith, and to duly perform all the other obligations which are to be undertaken by the Contractors for the sum of:-

£ : : ()
 or £ : : ()
 or £ : : ()

The Money columns in the Schedule of Prices to this Tender have been duly filled in by us, and we agree to be bound thereby.

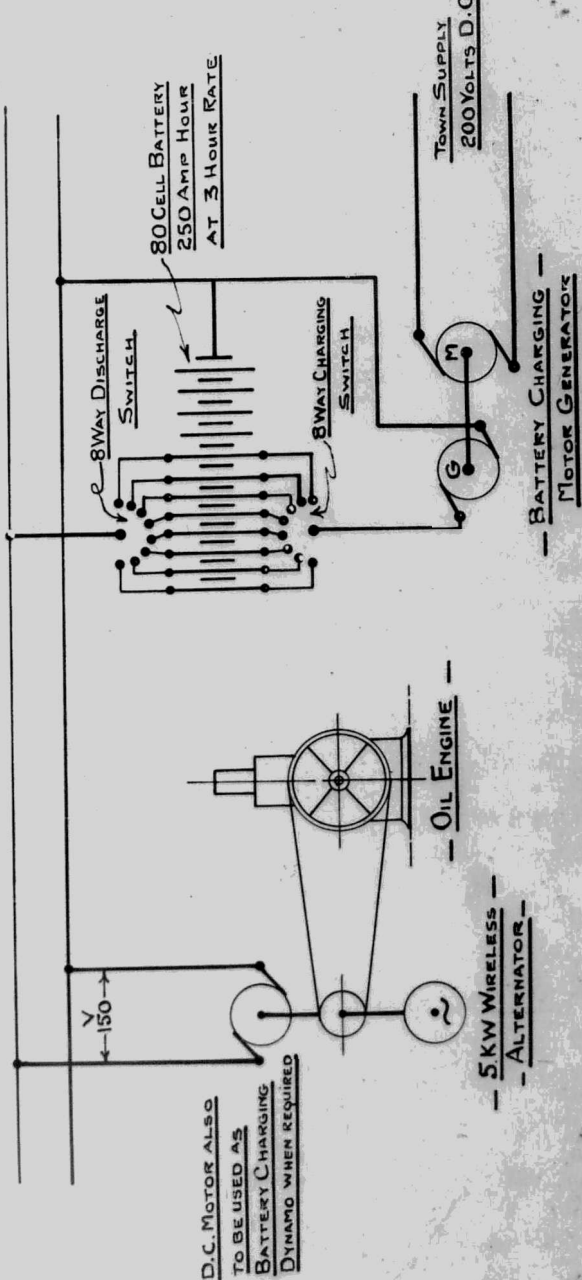
And we further undertake that in event of this Tender being accepted, to execute, when called upon by you so to do, a formal Contract for the due performance of the works, subject to such final additions thereto and alterations therein as in your opinion may be necessary to adapt the same to the conditions of this Tender.

Dated the _____ day of _____ 1912.

Signed.....

Address.....

MOMBASA WIRELESS STATION



D.C. MOTOR ALSO
TO BE USED AS
BATTERY CHARGING
DYNAMO WHEN REQUIRED

5 KW WIRELESS
ALTERNATOR

OIL ENGINE

BATTERY CHARGING
MOTOR GENERATOR

TOWN SUPPLY
200 VOLTS D.C.

80 CELL BATTERY
250 AMP HOUR
AT 3 HOUR RATE

8WAY DISCHARGE
SWITCH

8WAY CHARGING
SWITCH

150

COPY

331

8, QUEEN ANNE'S GATE,
WESTMINSTER. S.W.

CWK/W.
REECE, CARDEW & SNELL,
CONSULTING ENGINEERS.

27th November 1912.

SIR WILLIAM H. PREECE.
MAJOR P. GARDNER.
A.H. PREECE. J.F.G. SNELL.
LLEWELLYN PREECE.
J.H. WOODWARD. S.S. MOORE EDE.

The Crown Agents for the Colonies.
WHITEHALL GARDENS,
S. W.

Gentlemen,

Nairobi Wireless Station.
N. 201/19.

With reference to the tenders submitted by Messrs Marconi's Wireless Telegraph Co., and the Anglo French Wireless Co., we have carefully examined these and as the price was somewhat over £5,000 we wrote to Messrs Marconi on the 15th instant proposing various modifications with a view to simplifying and reducing the cost of the plant.

2. We have today received from Messrs Marconi a revised tender, dated the 26th instant, based on these proposals, and we are forwarding same herewith. It will be noted that the total now amounts to £3,656. 16. 10. for the complete Station, including the services of the Erecting Engineer, as compared with £5,817. 13. 4. in the original tender.

3. If it is considered essential to further reduce the price of the Station to be paid in the first instance, we would suggest that the following items be omitted from the contract, and they could be indented for at a later date: -

<u>Item No. 57.</u>		£.	s.
Spare Field Coil for Meter	...	3.	9
" Armature for Motor.	...	29.	18.
" " " Alternator....		55.	4.

Item No. 58.

Spare Field Coil for Dynamo.	...	5.	3.
" Armature for Dynamo.	...	27.	12.

4. We consider that the Electrician's Tool Box Item No. 74 at £14. 7. 6., and the Fresh Water St Item No. 82, £40. 5. 0. could be omitted altogether. The total amount of the foregoing reductions would therefore be £175. 19. 0.

5. We might further point out that if the Colon Officers are satisfied that they are capable of running the Station and starting it to work, the services of Messrs Marconi's Engineer, for which they sum £447. 10. 0. is quoted, would not be required. This sum, therefore, could also be deducted; but we do not however recommend the adoption of this course.

6. Although Messrs Marconi's tender is higher than that submitted by the Anglo French Wireless Co. it will have to be accepted in preference to the latter, seeing that the Mombasa Station will have to communicate with the existing Marconi Stations at Italian Somaliland, which, under the terms of the Radio-telegraphic Convention, would be entitled

refus

refuse to reply to the Station at Mombasa if it were not supplied by the Marconi Company.

7.

We therefore recommend the acceptance of the Marconi Company's revised tender of £3,656. 16. 10; or £3,480. 17. 10. if our recommendation to omit the above-mentioned items of plant and materials, amounting to £175. 19. 0. be adopted.

--- 8.

We are returning herewith the original tender, and we are also sending Messrs Marconi's revised tender of the 26th instant. We have kept Messrs Marconi's copies of the original tender and revised tender at this office for future reference.

We are,

Gentlemen,

Your obedient servants;

PREECE, CARDEW & SNELL.

Enclosures.

Ca. 38249 Lab

334

C. D.
R. 9DEC
D. 11

9 Oct 1919

*Pressing
Priority*

*Mr
Gentlemen*

I am etc to act.

11004 good

the receipt of your letter
E of the 2nd inst.

forwarding ^{three} ~~two~~ tenders
for the installation of the

proposed wireless telegraph
station at Mombasa "

together with a copy of
Her Majesty's Procurement

and Laid's new conditions
thereon.

2 Mr Harcourt does
not understand the procedure

which appears to have
been adopted in dealing
with this matter.

DRAFT.

MINUTE.

- Mr. W.B. 6/11
- Mr. Nathan 7
- Mr. Head 7
- X Sir G. Fiddes.
- Sir H. Just.
- Sir J. Anderson.
- Lord Emmott.
- Mr. Harcourt.

9 JG

2 drafts
After speaking to Sir G. Fiddes

The C.E. has given as full
as to the amount of his
of the length of months

Schedule of Prices, included
which I am sorry I overlooked
two tenders. In this case

Parsons Company the
is not so full, but
it appears from the notes,
the part of the company
not of the C.E.

Ch. Lap
38249

334
C. D.
R. 9 DEC
D.

*Pressing
Incomes*

9 Dec 1919
J Am etc to act.

avoid 400/11

the receipt of your letter
E of the 2nd inst.

forwarding three
for the installation of the
proposed wireless telegraph
station at Ambrose
together with a copy of
Messrs Price Cardus
and Curll's recommendation

DRAFT.

MINUTE.

- Mr. H.B. Glyn
- Mr. B. Hambro
- Mr. Mason
- Mr. Head
- Mr. G. Fiddes
- Sir H. Just.
- Sir J. Anderson.
- Lord Emmott.
- Mr. Harcourt.

79 JG

2 drafts

After speaking to Sir G. Fiddes
The C.E. has given as full
as to the amount of his
of the Anglo-Siam
Schedule of Prices, included
which I am only, I understand,
these tenders, in the case
of the Paulsen Company the
is not so full, but
it appears from the notes,
the part of the company
with the C.E.

thereon.
2 in Harcourt class
but understand the procedure
which appears to have
been adopted in dealing
with this matter.

would appear that tenders
were invited from three
firms, & that on their
receipt the Consulting
Engineers communicated
with me only, inviting
me to read in a known
tender, but that no
communication was made
to the other. The C.E.
states that, even as
induced, the tender
of the ^{Marconi Co} firm is higher
than one of the other
tenders, but they
recommended its acceptance
on the ground that the
Marconi Station will

335
have to communicate with
the existing Marconi Station
in Station Terminal, which,
according to the C.E., would be
suitable, under the terms
of the Radio-Telegraph
Convention to agree to
supply to the Station as
required if it were
not supplied by the Marconi
Company. Having regard
to the terms of clause 21
of the above Convention,
his Marconi ^{irrevocable} ~~contract~~ ^{with the} ~~contract~~ ^{Joint}
it appears ~~to be~~ ^{to accept} ~~to be~~ ^{to accept} ~~to be~~ ^{to accept}
doubt as to the validity of
~~contract~~ ~~with~~ ~~his~~
ground for referring to
for the contract to any
firm other than the Marconi

Ca. EAP
38219
C. D.
R 13 DEC
1912
Immediate

B Dec 1912

Company, but in any case if

3. As far as account regards
of great importance
that the account explains
should be examined with
view to show all contracts
of the nature, and, before
considering the matter

in the opinion of the C. &
it is necessary to give the
Contract to the Mercantile
Company for the sake of
inter-communication, in the
fact to understand the
of calling for tenders
these points.

to be furnished into full
information as to the relative
merits of the three tenders apart from the
above mentioned consideration.

4. The tenders enclosed
in your letter are
please forward

L
JFK

DRAFT.

The U.S. S
S.O.

MINUTE.

- Mr. H. B. G. 7/11
- Mr. P. 7/11
- Mr. P. 7/11
- Mr. G. P. 7/11
- Sir H. Just.
- Sir J. Anderson.
- Lord Emmott.
- Mr. Harcourt.

2 drafts

I have sent copy of
this draft to P. P. 7/11
with 35944 & 32817 in mt.
(to return)

P.P.O. has concurred
G.M. 13/12

Draft to Ego for concurrence

Sir

I am etc to act. the
receipt of your letter
no 43141/1912 of the 16th of Oct,
forwarding a copy of a letter
from the Italian Ambassador
relating to the proposed
establishment of
London Telegraph Commission
between Genoa and London
and inquiring what
answer should be returned
to the Marquis D'Albrighi
& his account would
suggest, should Sir E. S. say
in his opinion, that the
Italian Ambassador
should be informed a plan

