

## FURTHER PAPERS RELATIVE TO THE

sheathing, to the proposed submarine cable for the China Seas and Torres Straits, referred to by Mr. McGowan in his letter to William R. Falconer, Esq., Director of Public Works, Hobart Town, as it is the description of cable now invariably adopted by the Submarine Telegraph Company and English Government.

I therefore beg to submit copy of the specification and conditions upon which I have invited manufacturers to tender.

They were asked to name separate prices for a cable constructed with one, with two, and with three conductors.

Acting on the strong recommendation of the Director of Public Works at Hobart Town, I stipulated that the manufacturers should ship and submerge the cable at their risk, and moreover maintain it in perfect working order for twelve months. The terms of payment submitted correspond with the views of the same functionary, as, in the absence of any special instruction from the Government on these points, I assume their concurrence in the suggestions contained in the documents forwarded to me.

The firms invited to tender were four in number. One declined, after carefully examining the specifications and conditions, stating, "The mode of payment proposed is such as would make the contract of a too speculative nature for us to entertain."

Another stated, "The conditions were still found to be so exceedingly onerous, that, unless they can be very materially modified, I regret to inform you we could not feel justified in submitting a tender."

The others sent in their tenders undertaking to supply the cable free on board a ship in the port of London, namely:—

	Tender 3.	Tender 4.
Cable with one conductor—		
14 knots for shore-ends ... ..	£320	£317.
32 knots for main cable ... ..	233	230.
Cable with two conductors—		
46 knots same size throughout ... ..	386	381.
Cable with three conductors—		
46 knots same size throughout ... ..	448	445.

No. 3 sought for the "payment to be made in London on completion of the cable, upon certificate of Engineer that it is made in all respects in accordance with contract;" whereas No. 4 stipulated for "the terms of payment to be cash on shipment." They further added, "That in consequence of the short length to be laid, and the great distance from this country where the work is to be carried out, this Company cannot take the operation of submerging the cable and taking the risk of maintenance."

Finding it impracticable to impose these terms of payment I decided to modify them, and in the course of a few days I hope to conclude a negotiation with one of the firms to construct and submerge the cable.

The point to which I attach much importance is to bind a manufacturer to submerge, and after this to maintain or guarantee the integrity of the work for a given time.

While anxious to secure this desirable end, the Government may be assured I will not consent to terms of an unreasonable character.

The modified conditions now under consideration are that at least half the cost of the cable should be payable on the shipment, the remainder by instalments upon submerging and completion of contract. Further, as considerable misapprehension exists on the part of the contractors about procuring a steamer to tow the ship across the Strait, or in case of accident to recover the cable. With a view to remove this objection, I undertook that one should be provided for this service. By so doing I do not think I commit the Government to a difficult or expensive engagement.

The question as to the number of conductors to be adopted is a point of material importance, and one upon which I should have been glad to have had definite instructions from the Government, Mr. Sheath's opinion that the cost of a cable with three wires would be much less than one-third in excess of a cable with only one conductor, is not bore out by the tenders received; and his estimate of cost per mile is much below the mark. At the present time, however, and since the estimate was made for the Indian lines in the China Seas, already referred to, the prices for all telegraphic material have advanced upwards of thirty per cent.; this will account for Mr. Sheath's estimate being lower.

All the opinions I have received concur in advising me to adopt a cable with three conductors, in preference to one with two. A cable containing two conductors is more liable to injury from compression, owing to its peculiar construction, than one with three. This testimony strengthens Mr. Sheath's suggestion in his report to Government, where he states: "The form of cable I should recommend would be one containing three conductors." The evidence of W. R. Falconer, Esq., in his letter to the Hon. the Colonial Secretary of Tasmania, states: "That in such a work it is not desirable to trust to one copper conducting wire, as in the Tasmanian cable."

Having carefully considered these opinions, and that which is recorded by Mr. Sheath of its being not at all "improbable that the amount of business between the two Islands will require two or even more lines," it appeared to be most judicious to adopt at once a cable containing three conductors, although the cost, so far as I can judge, will be more than that anticipated by the Government. It may be further observed that the excess in price between a three-wire and a two-wire cable is somewhat under three thousand pounds; whereas, if one with two wire is adopted, and in the course of a short time it is found necessary to have a third channel of communication, a single wire cable of the description referred to in specification would cost free on board in London about twelve thousand pounds.

These remarks will furnish Government with an outline of what has been done respecting the Submarine Cable, and what is about to be carried out.

When the contract is completed, I shall transmit a copy of it and all the papers connected therewith.

I have, &c.,

JOHN MORRISON.