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8 Aug, 1924

OR CIRCULATION:—

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Mr.
Mr.
Mr.
Asst. U.S. of S.

Colonial Wireless
System

Perm' U.S. of S.
Per' U.S. of S.
Secretary of State.

Copy report by
Wireless Sub-Committee
of Committee of Imperial
Defense

Previous Paper

MINUTES

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25277

copy to Mr. C. G. ...
copy to Mr. C. G. ...
15 AUG 1924 - 13/12/24
Army

SR E.A

Subsequent Paper

6094075

I attach a copy of the report of the
board. Sub (Case of the I.C.C. in
Honduras)

This report results from recommendation
of the "3rd" class. (Case 2000)
You will see that though there is
no immediate recommendation relating to
Hemp - it and the S. Afr. functions
are mentioned.

As a result of the above con. cases
better go to Hemp.
We can take the departments of
the above to date & the latest
developments on the general question

Draft submitted.

S. REA to attach copies of the last
3 incl^s to this folder.

attached h/w.
John

1/12/44

(The above is to
be placed in the
the report on the
any other (1/12/44))

Eqm 8/8/44
at once

(THIS DOCUMENT IS THE PROPERTY OF HIS BRITANNIC MAJESTY'S GOVERNMENT)

SECRET

I.C.C. No. 790.

(REVISED)

COMMITTEE OF IMPERIAL DEFENCE.

IMPERIAL COMMUNICATIONS COMMITTEE.

COLONIAL WIRELESS SYSTEM.

REPORT BY THE WIRELESS SUB-COMMITTEE.

Note by the Chairman of the wireless Sub-Committee.

I forward herewith the Report by the Wireless Sub-Committee of the Imperial Communications Committee on a Colonial Wireless System which has been prepared in accordance with the Conclusion reached by the Imperial Communications Committee at their 37th Meeting (I.C.C. 37th Meeting, Conclusion 2 (b)).

The Report should be regarded as an Interim Report based on the assumption *inter alia* that the high power stations will be completed in this country and in the Dominions, and consequently the recommendations are the minimum likely to be required. It is already apparent that modifications extending some of the recommendations now put forward will be required, due to the decisions already reached by some of the Dominion Governments to adopt the Beam system in lieu of high power stations. The recommendations put forward in this Interim Report will not be sufficient for the strategical needs of the British Empire if the high power stations in the Dominions do not materialise.

The Pacific Cable Board have been asked to consider the use of Wireless in lieu of cables as a means of duplicating their system between Vancouver and Fiji. When their decision is known, and also those of the Governments of the Dominions and India regarding high power stations, it is suggested that the Wireless Subcommittee should make a further report extending their present recommendations.

The recommendations now put forward are independent of the proposed high power stations and if they receive approval immediate action can be taken to put them into force.

(Initialed) J.C.W.

2 Whitehall Gardens, S.W.

25th July, 1924.

COLONIAL WIRELESS SYSTEM.

Report by the Wireless Sub-Committee.

ASSUMPTION ON WHICH THE REPORT IS BASED.

The recommendations in this report have been based on the following assumptions, and if these are not realised it will necessitate the revision of the wireless system suggested with a consequent increase in its extent:

- (i) That the six High Power Stations at Rugby, Cape Town, Agara, Melbourne, Vancouver, Montreal are to be completed.
- (ii) That the Governments of the Commonwealth of Australia and of New Zealand will modernise, in accordance with the understanding reached with the Admiralty, their stations at Perth, Port Darwin, Rabaul, Townsville, Awanui (N.Z.) and Apia (Samoa), and link up with their network of stations in New Guinea, New Ireland, Bougainville, Nauru, Admiralty Islands, Rarotonga, Chatham Islands.
- (iii) That the Amalgamated Wireless (Australasia) Co. will modernise and connect up as further feeders the stations in Fiji (4), Ocean Island, Solomon Islands, and possibly the stations in Tonga and New Hebrides.
- (iv) That the Government of India will maintain the service of Wireless Stations throughout India and Burma and the Persian Gulf.

EXISTING WIRELESS STATIONS.

2. During the war, for strategic purposes, we constructed and maintained stations, so as to keep in touch with our ships throughout the globe. Some of these stations are unnecessary/

to the fighting services in time of peace and are expensive to maintain. The Air Force have since the war developed stations for inter-command communication, communication with aircraft and for meteorological services.

THE PRESENT SITUATION.

3. Certain stations are in full commission under the Admiralty; stations in England, North Front (Gibraltar), Rinella (Malta) Matara (Ceylon) Seletar (Singapore), Stonecutters (Hong Kong). Some are also in commission by the Air Force; Malta, Jerusalem, Bagdad, Ismailia.

Some have been retained in full commission and have taken on commercial work which helps to pay their cost, i.e. Rock (Gibraltar), Aden, Bermuda (Dockyard).

Others have been handed over to, and are maintained by, the Dominion or Colonial Governments, either in full commission or in care and maintenance at reduced power; Port Nolloth, Durban, Demerara, Mauritius.

The following stations have been or in our opinion, now can be, closed down altogether and we recommend that they be disposed of; Ascension, Falkland Islands, Seychelles, St. John's (Newfoundland).

STRATEGIC REQUIREMENTS.

4. The strategic requirements are twofold -

- (a) Communication to all bases.
- (b) Continuous touch with and from every British man of War on the high seas with some British Station.

The requirements of the Air Force and War Office are less exacting than the Admiralty's at present; but are likely to develop as the airship routes develop.

It is clear that the cost of, and time required, to recondition stations that have not been kept in good order by continuous work makes it most unwise to allow stations that will be required in war to drop out of use. Nor should

Import Dominions and Colonies be isolated and dependent solely on cable communication at critical periods.

It is therefore important to have the largest possible number of W/T Stations in operation in peace time consistent with economy. To meet the interest on capital charges and the cost of maintenance it is desirable to get what assistance is possible from commercial work, as is done on a small scale today at Gibraltar (Rock), Aden and Bermuda Dockyard, as well as at all the stations operated by the Dominion and Colonial Governments.

It is hoped that the conflicting claims of economy and efficiency will be met in the West Indies by the proposal to hand over to the Direct West India and the Halifax Bermudas Cable Companies, the Admiralty Medium Power station at Bermuda, in return for an undertaking by the Companies to spend capital to make stations at Bermuda and Jamaica to meet Admiralty requirements and to pay all costs of their maintenance.

COMMERCIAL WORK BY GOVERNMENT WIRELESS STATIONS.

5. So far, however, as certain other Admiralty and Air Force stations are concerned, we had to consider the alternatives of suppression, or the adoption of the method employed in the stations under the Dominion and Colonial Governments, and by the Admiralty at three stations, of supplementing official use by undertaking commercial work, both ship to shore and also point to point.

This commercial traffic can be greatly increased by the adoption of the Duplex-Duplex system and by commercial working on continuous waves with ships, which system is being used so increasingly on ocean-going liners. Both of these improvements are required for strategic reasons, and, incidentally, assist commercial work. In view of the fact that commercial messages would be to some extent deferred and could not be as secret as cable messages, rates charged/

should/

Note

By the Duplex-Duplex system it is possible:-

- (a) to work with merchant ships on the commercial spark wave and at the same time to maintain:-
- (b) (i) a duplex service on continuous wave with the adjacent point-to-point stations or (ii) a simplex service on continuous wave with ships.

should probably be 33% below the present cable charges. But the exact rate, low enough to attract traffic and not so low as to embarrass Government use of wireless, would be a matter of experiment.

6. At Malta (Rinella) Aden and Ceylon (Matara) the Admiralty for purely strategic reasons, are proposing to increase the range of these stations to enable them to inter-communicate direct for 24 hours. We concur that this is essential.

The importance of thoroughly modernising the station at Malta (Rinella) and Aden is enhanced owing to the recent decision of the Imperial Communications Committee (I.C.C. 39th Minutes Conclusion 1.) to rely on direct wireless communication between Malta and Aden in the event of a break occurring in the Eastern Telegraph Company's system in Egypt and to discontinue the project for a wireless link between Alexandria and Suez in the Eastern Telegraph Company's Cable system.

7. Of the Admiralty Wireless Stations point to point traffic is heaviest to-day at Malta, but it averages only five hours a day and the proposed alterations should more than double the output capacity at all these three stations. There is, therefore, the ability to take on commercial work without inconveniencing official work. There may be delays, for all official work would have to have priority. At times of political crisis it might

even be necessary to refuse commercial work. But nor-
ally we consider that a regular and adequate service/ should
be possible. The machine is there to do the work,
the proceeds of which should more than pay for
the cost of the extra operational staff required.

In 1922/3 Gibraltar (Rook) and Aden earned
about £3,000 each for commercial work and cost
about £5,000 each to maintain for all purposes.

We understand that the Admiralty and Air
Ministry are willing to undertake more commercial
work, provided priority is given to official
messages.

REDUNDANT STATIONS TO BE CLOSED.

8. If our recommendations as regards Government
stations being duplexed - duplexed and undertaking
commercial work are adopted it would be desirable
to approach the Colonial Governments to ascertain
whether if their increased facilities are
provided they would be willing to close down the
stations at Colombo, Cap d'Aguillar (Hong-Kong),
and Singapore (Radio).

WIRELESS STATIONS REQUIRED TO BE MAINTAINED TO
MEET IMPERIAL NEEDS.

9. We consider that the main strategic consid-
erations will be satisfied with adequate W.T.
stations at:- (England), Glace Bay (Canada),
Bermuda, Jamaica, Demerara, Freetown (Sierra
Leone) Falfish Bay, Durban, Mauritius,

Gibraltar, Malta, Aden, Ismailia (see note (a)), Baghdad (see note (b)), Ceylon, Singapore, Hong-Kong, in addition to those stations mentioned in paragraph 1. the provision of which we have assumed in preparing this report.

We recommend that the Government of the Union of South Africa be approached with a view to securing such use being made of the station at Durban as will enable it to communicate direct to Mauritius. The increase in range and efficiency which we propose for the latter station will, if carried out, allow of direct communication between Ceylon - Mauritius - Durban, and the consequent increased traffic returns should well repay the Government of the Union of South Africa for making increased use of Durban station.

The North Pacific would still be inadequately covered, but the Pacific Cable Board have been asked to consider this when designing their proposed additional connection between Australasia and Vancouver.

The South Atlantic would be also badly covered, but the reconditioning and maintenance of the Falkland Islands station would be too expensive to justify in the present.

Note (a). Ismailia Station. If political considerations make it desirable that this station should be moved, it would be possible to replace it by developing the existing Air Force station at Jerusalem at a cost of approximately £30,000.

Note (b). The station at Baghdad would only be necessary so long as British Forces are in Iraq.

state of international politics and the present uncertainty of wireless development.

10. Satisfactory agreements as regards the following stations are in existence or may be expected to develop shortly.

Glace Bay, Canada, (Government of Canada)
Bermuda and Jamaica, (Direct West India Cable Company and Halifax Bermuda Cable Company).

Demerara, (British Guiana Government).

Walfish Bay, (Government of the Union of South Africa).

Durban? (Government of the Union of South Africa).

We are left, therefore, with British Government ownership and control of the following stations (England), Freetown (Sierra Leone), Malta (2), Aden, Ceylon, Singapore, Mauritius, Hong Kong, Gibraltar, Ismailia and Bagdad, all of which are held to be essential.

11. As far as the Stations at present in full commission are concerned in order to perform all that is required by the fighting services and in addition to undertake commercial work, the only increase in capital cost will be for those Stations where the Diplex-Duplex system is to be adopted and for the necessary increase in range at Malta, Aden and Ceylon.

As regards Mauritius, the Colonial Government are at present spending £2,000 a year, maintaining this station for a low power service. For strategic

Reasons we recommend that an additional £15,000 be spent to modernise this station and that the Diplex-Duplex system be adopted. The Colonial Government should be asked to make an increased contribution towards its maintenance in full commission by the Admiralty. The present commercial work is small but the additional facilities for communication, due to the modernisation proposed, with Aden, Ceylon and Durban direct should make this station much more valuable to the Colony.

12. The question as to whether the proposed station on the West Coast of Africa should be situated at Freetown (Sierra Leone) or in Nigeria was referred to the Committee of Imperial Defence who decided in favour of Sierra Leone (C.I.D. 185th Meeting). This Station will communicate with England via Gibraltar.

The Colonial Government of Sierra Leone probably will not be in a position to take charge, and in these circumstances the station should be in Admiralty hands, doing what commercial work offers itself. The cost is estimated at £100,000 and upkeep at £6,000 a year. We understand that the Colony's finances will not admit of a contribution at present, but, in view of the advantages offered, we think that the Colonial Office should indicate that an annual contribution will be expected should the finances improve.

13. The Sudan can be connected up with England by wireless from Khartoum, via either Aden or/

Ismailia, and we consider it would be desirable to encourage commercial work via this route rather than by the Suezian land lines.

SMALL AUXILIARY STATIONS.

14. We have not mentioned the large number of small stations which will form an additional network feeding the main W/T stations. These feeder stations will supply additional commercial traffic and will assist ship to shore work, particularly in the narrow seas. Additional stations of this type will no doubt spring up to meet commercial requirements, whenever sufficient traffic presents itself.

INADEQUATE COMMUNICATION TO CERTAIN COLONIES.

15. There are, however, certain colonies with which there is no adequate W/T connection, and with whom the Admiralty and Air Force do not require W/T communication for strategic purposes, though at any time such communication might be desirable for the Army. But, in view of the possible development of directional wireless telegraphy, it may be desirable to consider the application of such a system to direct communication between England and Uganda, and /or Kenya, Tanganyika, Rhodesia, and possibly the Falkland Islands. Uganda, Kenya and Tanganyika could all be served from England by one directional beam. This, however, should wait until the system is proved.

SUMMARY OF PROPOSALS

16. Station	Proposals	Capital Cost or Saving.	Annual Cost or Saving.	Possible Receipts (Annual)
Malta (Rinella)) Range to be increased.	15,000. -	1,650. -	10,000
Aden		15,000. -	1,650. -	8,000
Ceylon (Matara)		15,000. -	1,650. -	8,000
) Duplex work- ing to be adopted.			
Gibraltar) Duplex-Duplex system to be adopted.	5,000. -	1,650. -	8,000
Singapore (Seletar)		5,000. -	1,650. -	10,000
Hong Kong (Stone- cutters)		5,000. -	1,650. -	10,000
Mauritius	To be modern- ised and Duplex-Du- plex system to be adopted.	15,000. -	5,000. - (less 2,000)	4,000
Freetown (Sierra Leone) or Nigeria	New station to be built at cost of approximate- ly	100,000. -	6,000. -	6,000
Bermuda (Medium Power)	--	--	1,500. +	
Cairo)		50,000 +	13,000 +	--
Bathurst)		--	--	--
Ascension)		--	--	--
St. John's)	to be aban- doned as	1,000 +	1,500 +	--
Seychelles)	superfluous	1,000 +	100 +	--
Jamaica (Christiana)		--	1,500 +	--
St. Helena	The new station pro- posed by ad- miralty at a cost of 268,000 will not be requir- ed provided the proposed station at Sierra Leone is built.	--	--	--
		175,000. -	17,600 +	
		52,000. +	18,900. -	64,000
		123,000. -	1,300. -	64,000

17. It may be suggested that the cost of building up in times of peace of a Colonial wireless system on a carefully considered plan appears to be considerable, yet if this is not done it must be realized that the cost of attempting to re-construct the deficient stations on the outbreak of war would not only be far greater, but also many vital months would elapse before the strategic needs of the Empire could be supplied.

18. To sum up the Recommendations:-

- (a) That the improvements at Malta, Aden and Ceylon be proceeded with.
- (b) That improvements by the adoption of Duplex-Duplex working at a cost of roughly £5,000 each be effected at Gibraltar, Singapore and Hong Kong.
- (c) That Mauritius be similarly improved by arrangement with the Colonial Government and be fully commissioned and maintained, subject to ^{an increased} contribution by the Colony, by the Admiralty.
- (d) That a new station costing £100,000 be constructed by arrangement with the Colonial Government at Freetown (Sierra Leone).
- (e) That all the above mentioned stations, as well as Khartoum and the Air Force stations at Baghdad and Ismailia be instructed to undertake commercial work in so far as it does not conflict with their official work.
- (f) That the station at Bermuda be handed over to the Direct West India and Halifax Bermuda Cable Companies on agreed terms referred to in paragraph

(g) That W/T communications in the Pacific Ocean must depend more or less on the action of the Pacific Cable Board, with whom a consultation should be held on this matter.

(h) The cost of building up a Colonial Wireless system will be less if worked out in times of peace on a considered plan instead of attempting the hurried construction of essential wireless stations when the emergency may have arisen.

(i) That the Government of the Union of South Africa be approached with a view to securing such use being made of the Station at Durban as will enable it to communicate direct to Mauritius.

(j) If the above recommendations for a wireless system are adopted the main strategic requirements of the British Empire will be met and commercial wireless chains will be in Government hands throughout the Empire, capable of supplying an efficient and immediate service as follows:-

England - Gibraltar - Freetown (Sierra Leone).

England - Malta - Ismailia - Jerusalem - Baghdad - Khartoum

England-Malta-Aden-Mauritius-Durban.

England-Malta-Aden-Ceylon - Madras - Rangoon.

England-Malta-Aden-Ceylon-Singapore - Hong Kong. Port Darwin-Awanui-Apia.

Also. England-Canada-Bermuda-Jamaica - Demerara - Belize

In the hands of commercial companies to a great extent but available in times of

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8 Aug '24

DRAFT.

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15 AUG 1924

MINUTE.

Mr. ⁷ 6/8/24

Mr.

X Mr. Mackay 8/8/24

Sir C. Davis.

Sir G. Grindle.

Sir H. Read.

Sir J. Macdonald Smith.

Lord Arnold.

Mr. Thomas.

780. Revisé.

has 26-27

copy to 2.C.C.P. 8.00 Army

Sir

with ref. to my despatch Conf (5)
3rd June, 1924

known to transmit to you

(a) a copy of an

interim Report by the

Wireless Sub-Committee to

Internal Communications

Office on the question of

a Colonial Wireless System

together with a covering letter

to the Chairman of the

Sub-Committee.

This interim Report has been

prepared with a view to
covering not recommendations

Hansard 23 July 1924
H.C. Paper No 143
Hansard 15 Aug 1924
H.C. Paper No 120

10 in the Report of the Imperial
Wireless Telegraphy Com 1924.

(b) a copy of a statement
made by the P.M.G. in the

House of Commons on
Wednesday 23rd July
intimating the decision of
H.M.G. on the main
recommendations of the
Imperial Wireless Telegraphy

Com. (Cts. 1318-1322 of
Hansard Vol. 176 No 113)

(c) a copy of the contract
with the Marconi Co. for the
erection of "beam" wireless
stations, together with a
report of the proceedings in

the H. of Commons on
the 1st Aug. at which

the contract was
discussed
and approved

(Cts 2472-2487 of
Hansard Vol. 176 No 12)

(Signed) J. H. THOMAS