



IMPERIAL SHIPPING COMMITTEE.

REPORT

ON THE

Harbours of Nigeria.

*Presented by the President of the Board of Trade
to Parliament by Command of His Majesty.*

September, 1928.

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[*Note.*—The expenses of the Committee in conducting this enquiry were £19 1s. 8d. The estimated cost of printing and publishing the Report is £14 10s. 0d.]

REPORT

ON THE

Harbours of Nigeria.

To the RIGHT HONOURABLE L. C. M. S. AMERY, M.P.,
Secretary of State for the Colonies.

LIST OF MEMBERS.
OF THE
IMPERIAL SHIPPING COMMITTEE.

The Rt. Hon. Sir HALFORD MACKINDER, P.C. (*Chairman*).
Sir SYDNEY CHAPMAN, K.C.B., C.B.E., United Kingdom.
Hon. PETER C. LARKIN, Canada.
Mr. E. A. EVA, Australia.
Sir JAMES PARR, K.C.M.G., New Zealand.
Mr. G. BOWDEN, M.C., South Africa.
Mr. VICTOR GORDON, C.M.G., Newfoundland.
Sir ATUL CHANDRA CHATTERJEE, K.C.I.E., India.
Sir GILBERT GRINDLE, K.C.M.G., C.B., Colonies and Protectorates.
Sir WILLIAM CURRIE.
Mr. T. HARRISON HUGHES.
Mr. W. L. HICKENS.
Mr. KENNETH LEE.
Mr. JAMES W. MURRAY.
Mr. R. D. FENNELLY (*Secretary*).

} being persons experienced in shipping and commerce.

Note.—The seat of the Irish Free State on the Committee is at present vacant.

TERMS OF REFERENCE.

(i) To enquire into complaints from persons and bodies interested with regard to ocean freights, facilities and conditions in the inter-Imperial trade or questions of a similar nature referred to them by any of the nominating authorities, and to report their conclusions to the Governments concerned.

(ii) To survey the facilities for maritime transport on such routes as appear to them to be necessary for trade within the Empire and to make recommendations to the proper authority for the co-ordination and improvement of such facilities with regard to the type, size and speed of ships, depth of water in docks and channels, construction of harbour works and similar matters.

LIST OF REPORTS.

The Imperial Shipping Committee have already made the following Reports :—

- (1) On the Limitation of Shipowners' Liability by Clauses in Bills of Lading and on certain other matters relating to Bills of Lading (Cmd. 1205).
- (2) On the Functions and Constitution of a Permanent Imperial Body for Shipping Questions (Cmd. 1483).
- (3) On the Deferred Rebate System as obtaining in the trade between the United Kingdom and Australia [Interim Report] (Cmd. 1486).
- (4) On Rates of Freight in the New Zealand Trade (Cmd. 1564).
- (5) On the Deferred Rebate System [Final Report] (Cmd. 1802).
- (6) On the Work of the Imperial Shipping Committee, 1920 to 1922 (Cmd. 1872).
- (7) On the Economic Size and Speed of Vessels for the Australian Trade and on the Subsidies necessary to maintain Speeds in excess of the Economic Speed (Cmd. 1917).
- (8) On the Methods of Assessment of Shipping to Income Tax within the Empire (Cmd. 1979).
- (9) On the Prospective Size of Vessels in the Eastern and Australian Trades *via* Suez, in relation to Proposals for the Deepening of Colombo Harbour (Cmd. 2250).
- (10) On Canadian Marine Insurance Rates [Interim Report] (Cmd. 2249).
- (11) On Rates of Freight on Canadian Flour in the North Atlantic [Interim Report] (Cmd. 2248).
- (12) On East African Shipping Services [Interim Report].
- (13) On Canadian Marine Insurance Rates [Second Report] (Cmd. 2447).
- (14) On certain Aspects of the Canadian Cattle Trade (Cmd. 2609).
- (15) On Prai River Railway Wharves (Penang Harbour) with certain Observations on the relation of Ocean Traffic to the Development of New Ports (Cmd. 2703).
- (16) On the Work of the Imperial Shipping Committee, January, 1923 to May, 1926 (Cmd. 2706).
- (17) On the Control and Working of Mombasa (Kilindini) Harbour, Kenya Colony (Cmd. 2713).
- (18) On the Harbour of Dar-es-Salaam, Tanganyika Territory (Cmd. 2917).

REPORT.

We, the Imperial Shipping Committee, acting under the second part of our terms of reference, have had under consideration an enquiry from the Secretary of State for the Colonies, on behalf of the Governor of Nigeria, regarding the future development of Lagos Harbour. We now beg leave to present our Report to the Secretary of State.

1. The question was brought before us by the Secretary of State in a letter dated 6th April, 1927, which is printed as Appendix I. Our opinion was asked "as to the future development of Lagos Harbour, with particular reference to the question of increasing the depth of the navigating channels."

2. It will be observed from the despatch from the Governor of Nigeria, which is appended to the Secretary of State's letter, that there is now a channel to the new Apapa railway wharves at Lagos for vessels drawing 25 feet, but that the dredging of the ideal curves to ensure the easier maintenance of this depth by the scour will not be completed for some five years. The question is as to what programme of development should then be undertaken, because that future programme ought in the meantime to influence the policy to be followed in the development of the internal communications of the Colony. Is it likely that vessels visiting Lagos in the future will be of a greater draught than 25 feet? In framing an answer to this question we have found it necessary to take a wide view of the circumstances which govern the ocean communications of Nigeria.

3. Evidence has been heard from the following witnesses:—

Captain R. D. Hughes, C.B., C.S.I., C.M.G., D.S.O.,
Nigerian Director of Marine.

Mr. David Jones, of Messrs. Elder Dempster and Co.,
Ltd., Shipowners.

Mr. J. E. W. Flood, Nigerian Department, Colonial
Office.

Mr. A. T. Coode, of Messrs. Coode, Fitzmaurice, Wilson
and Mitchell, Consulting Engineers.

Sir Edgar Sanders, Major-General W. W. H. Grey,
C.B., C.M.G., Mr. A. A. Cowan, Mr. J. H. Sharrock,
Mr. F. A. Pickering and Mr. C. H. Werner, who gave
evidence jointly as representing the London, Liverpool and
Manchester Chambers of Commerce and the Association of
West African Merchants.

4. There is nothing quite comparable in the world to the traffic on the Coast of West Africa. From the French port of St. Louis at the mouth of the River Senegal, where the desert

coast of the Sahara ends, to Duala in the French Cameroons is a distance measured round the chief headlands of some 3,000 miles. The ocean track from Europe to Nigeria must necessarily follow this coastline and the same is true (from the neighbourhood of Sierra Leone) in regard to the ocean track from North America. It so happens that in all the interval between St. Louis and Duala there is no fine natural harbour so situated with regard to inland lines of communication as to be suitable for development into a great port serving a considerable part of the West African continent. There is a succession of at least fifty ports each serving a small hinterland, and these ports are for the most part merely open roadsteads where shipping may have to anchor some miles from the shore and cargoes are loaded and unloaded by means of surf boats.

5. This state of affairs has resulted not merely from the geographical conformation of the region but also from the history of the European settlements established there during the last four centuries. From the sixteenth century onward a series of little ports, akin to the Indian "factories", were established by different trading nations—British, French, Portuguese, Danish, Dutch and Swedish—which alternated with one another in such manner that no considerable coastal frontage was under any one flag. Each post traded with its own immediate neighbourhood and by many native ways into the interior. Only in the latter part of the nineteenth century was the confusion and competition of interests removed, partly by exchange of posts and partly by purchase. To-day the coast is divided among comparatively few jurisdictions, and as a result of this political change and of the construction of railways and motor roads, the through traffic with the interior is now tending to be concentrated at a smaller, though still considerable, number of ports. Owing, however, to the productive character of the actual coast land there is still important trade to be done at the old established intervening ports situated at intervals which on the average may be put at some thirty to forty miles.

6. The shipowner naturally prefers to have trade concentrated at a few ports and the shipper of goods should, other things being equal, reap the benefit of such concentration in lower freights and improved services. Unfortunately, in the case of West Africa, the collection of produce from smaller ports by coasting vessels for trans-shipment at a few central ports is, on account of the special nature of the trade, not very feasible. Railway and road communications can be made to converge on such central ports but only at the cost of considerable capital expenditure. Moreover there are obvious difficulties in diverting the established channels of trade. A case of this in point has occurred on the Gold Coast at the present time. In view of the opening of the new deep water port of Takoradi it is there proposed to close the smaller ports of Saltpond and

Cape Coast. The shippers interested at these ports have, however, made representations to the Government that they should remain open until some satisfactory road has been provided to Takoradi, since the railway which runs parallel with the coast lies some 50 miles inland.

7. The maximum concentration of trade, involving the minimum number of calls along the coast, is being achieved in the case of the fortnightly express mail and passenger service from Great Britain conducted by Messrs. Elder Dempster, for which the ports of call are only Freetown (Sierra Leone), Takoradi and Accra (Gold Coast) and Lagos (Nigeria), with calls on alternate voyages at Bathurst (Gambia) and Monrovia (Liberia). Lagos, the principal and westernmost port of Nigeria, is the terminus of this service, and cargo is taken by it for Lagos only.

8. Lagos is, however, so situated that, although it is the capital and principal centre of trade, it cannot easily provide a point of concentration for the overseas trade of the whole of Nigeria. The Niger River is not only itself an important artery of traffic, but it also divides Southern Nigeria into two regions each traversed by its own main railway to the coast. Thus trade from the interior reaches the coast along three separate avenues, by the Western Railway to Lagos, by the Niger River to the ports of its delta and by the Eastern Railway to Port Harcourt. Moreover the coastal region along a frontage of some 500 miles is itself very productive.

9. East of Lagos there are the following ports on the Nigerian Coast :—

(a) The group of ports reached over the Forcados Bar (Burutu, Warri, Sapele and Koko) at the western mouths of the Niger;

(b) Akassa, Brass, Abonema and other ports on the central mouths of the Niger;

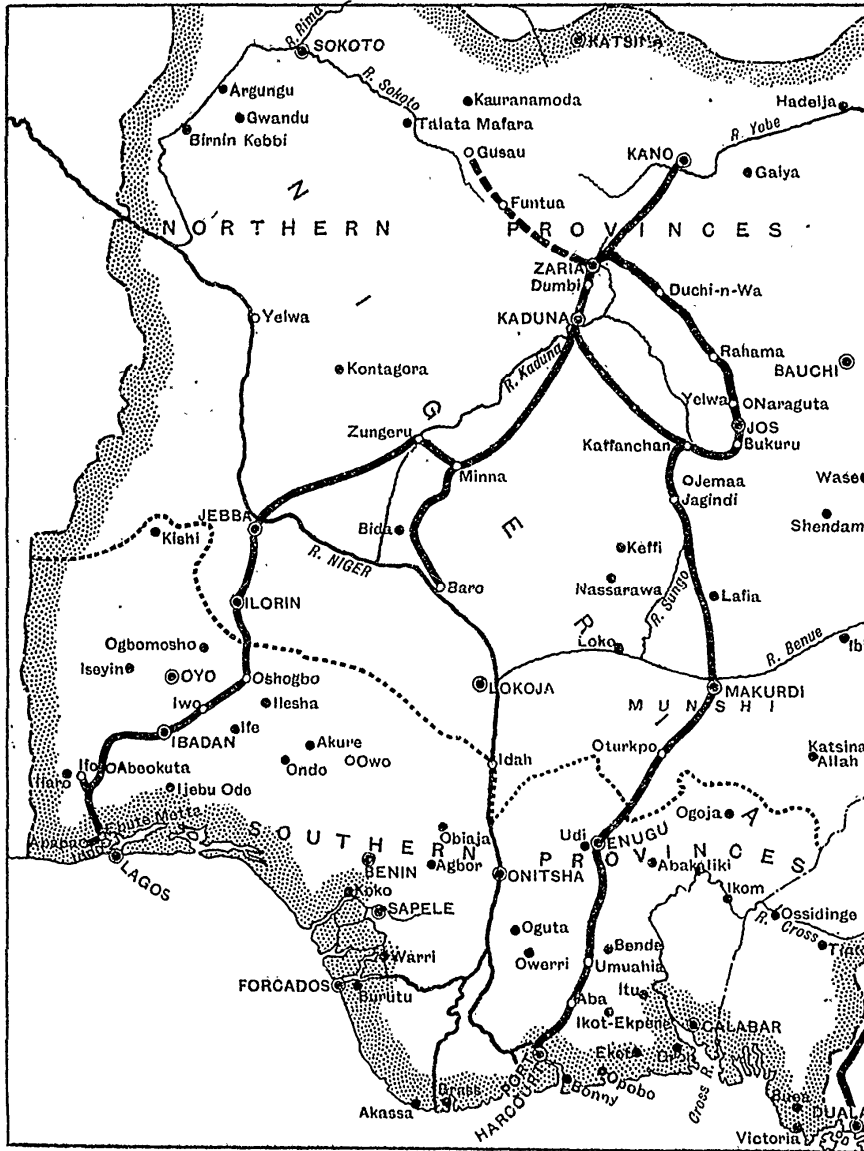
(c) Port Harcourt, on the Bonny River, which is the eastern mouth of the Niger;

(d) The relatively small port of Opobo on a navigable river mouth between the Niger and the Cross River;

(e) The considerable port of Calabar and the small port of Oron on the Calabar Estuary;

(f) The new ports of Victoria and Tiko eastward of the Cameroon Mountains.

10. Before we can with advantage consider what policy we would recommend to be adopted at Lagos we must give some attention to the eastern Nigerian ports. The possibility of development at these ports must, to some extent at any rate, govern the necessity for development at Lagos.



11. *Forcados Bar Ports*.—Forcados Bar is some 7 or 8 miles from land. It is a moving bar more than 2 miles broad and apparently impossible to dredge. Moreover it is subject to a heavy swell. The maximum draught advised for crossing it at present is 17 feet 6 inches at high water.* Of the ports which are reached over the bar, Burutu and Warri are the termini of the steamer services on the main Niger River; Burutu is the private port of the Niger Company, and Warri is used by the African and Eastern Trade Corporation and Messrs. John Holt. Burutu is about 5 miles up the Forcados River and has a wharf with 15 feet of water alongside at low tide. Warri is on a loop from the main Forcados River. It lies some 30 miles from the sea and is accessible to vessels of 17 feet draught. In addition there are the ports of Koko and Sapele, which are collecting centres for the local canoe trade in oil and other commodities from a rich district. They are situated on the Benin River but, because of the shallows at the mouth of that river, are approached from the ocean over the Forcados Bar and thence through narrow and tortuous creeks leading from the Forcados to the Benin River. Koko is some 60 miles and Sapele some 85 miles from the sea by this route. Vessels drawing 16 feet 6 inches can reach these ports.

12. *Akassa*, some 3 miles up the Nun River, and *Brass*, at the mouth of the Brass River, were important trading centres for the local creek-borne traffic. The bars at the mouths of the Niger River are such that these ports can only be approached at high water by vessels drawing not more than from 14 to 15 feet.

13. *Degema* and *Abonema* are approached over Bonny Bar via the Cawthorne channel and the mangrove creeks connecting the New Calabar, Sombrero and Bonny Rivers. Vessels drawing 18 feet can reach these ports, which have still a large creek-borne trade.

14. *Port Harcourt* is the first port east of Lagos accessible to vessels of any considerable draught. Unlike Lagos it is not an old trading centre, but was established in 1913 to provide an outlet for the Government-owned coalfields at Enugu. The port is some 30 miles up the Bonny River, which is the easternmost mouth of the Niger. The site was chosen because of the circumstance, exceptional in this deltaic region, that there

* The *bar* draughts as given in this Report refer to high water or to within a short time of high water, but the *river* draughts are roughly half tide draughts; for a vessel proceeding, for example, to Calabar cannot pass all the shoal places at the top of one tide.

In 1926 the maximum bar draught officially advised at Forcados was 18 ft., but owing to a report of less water last year it was reduced to 17 ft. 6 ins. A new survey of the bar has just been completed, and the results will be published shortly.

is here a bluff of solid land rising some 25 feet above the east bank of the river. Wharves with 24 feet of water alongside at low spring tides have been constructed and extensions are in progress. Port Harcourt is the only Nigerian port, other than Lagos, which has railway access to the interior, but it has not so far developed a local canoe traffic comparable with that at the older established centres on Forcados River or at such ports as Akassa. We understand that accommodation is being prepared for such traffic. The main difficulty in further developing Port Harcourt as the railway terminus on the ocean for the eastern side of Nigeria lies in the existence seven or eight miles out to sea of the Bonny Bar. This bar has upon it not more than some 20 feet of water, and is not easy of navigation even for vessels of less than this draught. Whether a deep channel can be dredged and maintained through it at any reasonable cost is a problem of the first significance from the point of view of this report. We shall return to this matter later.

15. *Opobo* is an old local trading centre for palm oil and kernels near the mouth of the Opobo River. It is accessible at high water to vessels drawing not more than 13 feet.

16. *Calabar*, some 25 miles from the ocean, lies on the east side of the great estuary of the Calabar River, a broad arm of the sea quite unlike the relatively narrow and tortuous mouths of the Niger delta. There is no bar at the mouth of this river, but a series of flats within the estuary itself limit the draught of vessels using the port to 20 feet for ordinary navigation, although by waiting for tides at the successive shoal places a vessel drawing several feet more could work its way up. Calabar is a very old established trading post and an important collecting centre for the local creek-borne traffic. On the western side of the estuary, some 20 miles from the ocean, is *Oron*, a small place at present of little significance.

17. At the foot of the Cameroons Mountain is the open roadstead of *Victoria*, with a railway to the inland station of Buea. Some miles further eastward, a short way up the Bimbia River, is the small port of *Tiko*, about the same distance from Buea as is *Victoria*. *Tiko* appears to be capable of considerable development. At present the bar at the entrance to the river has a navigable draught of 16 feet at high water. The district of which Buea is the centre is important because of the plantations on the slopes of the Cameroons mountain.

18. We now return to *Lagos*, a town of some 120,000 inhabitants, which is the political capital and commercial centre of Nigeria. It is the distributing centre for that portion of the Colony which is traversed by the railway, nearly 800 miles long, which runs north-eastward from Lagos to Kaduna and Kano. For the first 200 miles inland this railway passes

through a fertile oil-producing district, but no great amount of trade is as yet drawn from beyond the point where the Niger is crossed at Jebba up to Zungeru, though from beyond that a considerable tonnage of ground nuts and cotton is derived from the northern provinces and is railed to Lagos. The output of ground nuts has amounted to 127,000 tons a year, and in January, 1928, 25,000 tons were shipped. Lagos Town stands some five miles from the ocean on an island, round the northern and western sides of which curves the outlet of Lagos Lagoon, and this outlet channel constitutes Lagos Harbour. The lagoon runs west and east parallel with the coast for many miles and is fed by numerous streams; it has communication by creeks even with the Niger some 300 miles east of Lagos. A great canoe traffic gathers from this lagoon and its connected creeks to Lagos town. There is a tidal rise and fall at the town of 2 to 3 feet.

19. Lagos is an old established trading centre, but until recent years the bar at the mouth of the harbour, on which there was a depth of water fluctuating only between 9 and 14 feet, prevented the entry of any but shallow-draught vessels. Consequently passengers for Lagos had to be landed by tender from ocean-going steamers in the Roads. Cargo, on the other hand, was carried on to the Forcados River, where it was transferred to shallow-draught steamers which could cross the Lagos bar. The present facilities at Lagos owe their origin to works begun in 1908. Two converging granite rubble moles were pushed out to sea so as to confine the out-flowing waters of the lagoon. This method proved to be so successful that it was not found necessary to carry the moles as far seaward as was at first contemplated, and their construction was stopped when it was found that with a small amount of maintenance dredging a passage of 27 feet was available on the bar, so that vessels drawing 25 feet could safely enter. There is now in fact 27 feet of water on the bar at low water.

20. The fairway, some five miles long from the bar to the wharves, follows at first the eastern side of the harbour and then divides at Five Cowrie Point, one channel continuing up the eastern side to the Customs Wharf on Lagos Island and the other channel crossing diagonally to the new railway wharves at Apapa on the western or mainland side. The former permits of the passage of vessels drawing 24 feet and there is 24 feet of water alongside the Customs Wharf at low spring tides. Vessels drawing 25 feet can proceed to the Apapa wharves, the foundations of which have been carried down so as to permit of dredging to 32 feet alongside if necessary. There are at present at Apapa four fully equipped berths with sheds.

21. The normal routine of the port is for vessels to proceed first to the Customs Wharf, where they discharge most of their

cargo into the warehouses of the Lagos merchants for distribution inland in small quantities as required; they then go to the Apapa wharves in order to land railway material and other goods in bulk for transport by rail into the interior. For the homeward voyage vessels load rail-borne cargo at Apapa, and lie in the stream to receive from lighters goods collected at Lagos town by the local canoe trade.

22. The ports of Nigeria may be considered in three categories. In the first place there are the small ports, especially in the Oil Rivers area, the entrances to which are blocked by bars with only some 13 to 18 feet of water upon them; in the second place there are Port Harcourt and Calabar available for vessels drawing 20 or 21 feet and, lastly, there is Lagos open to vessels drawing up to 25 feet.

23. Having regard to the general advisability of concentrating traffic at as few ports as possible, we have made inquiry from the witnesses who have appeared before us as to which of the Nigerian ports were best worth expenditure with a view to development. We have found general agreement that in the interests of the trade it would be best to concentrate development at Lagos, at Port Harcourt and at Calabar, but not to neglect such minor improvements as may be practicable, especially at Forcados and Tiko. The shallow bars at the mouths of the Niger delta are of a shifting character and even at Forcados, where the trade is most important, we are informed that it would be impracticable to maintain a channel through the bar appreciably deeper than that already in existence.

24. On the other hand, we are given to understand by the merchants engaged in the trade, that the transport of cargo, such as palm oil, from the smaller ports for transshipment into ocean-going vessels at one or two ports is not a practicable policy. Apart from the expense of additional handling, the merchants maintain that there would be heavy loss from leakage of oil and heavy wear and tear on the oil casks. It is therefore held that there must always be a service of smaller vessels carrying produce from the small Nigerian ports directly to Great Britain, the Continent of Europe and North America. We feel it important, nevertheless, to record the suggestion that has been made to us that the difficulties in question might be obviated by the collection of the oil in storage tanks at the small ports, whence it could be carried by tank lighters to the main ports for direct transshipment into the larger ocean-going vessels. We have been informed that certain of the vessels belonging to Messrs. Elder Dempster and Company have already been fitted with tank accommodation for carriage of palm oil in bulk to the United States, but that in Great Britain the necessary plant

for discharging such cargo has not yet become available. There is also a parallel question in the case of ground nuts, which might perhaps be more economically handled were elevators available at some of the Nigerian ports.

25. Since it is clear that nothing can be done to give access for the larger ocean-going vessels to the lesser Nigerian ports, the problem resolves itself into the alternative questions:—

(a) Can the entry to Port Harcourt be deepened so that it may be available for all vessels which can now enter Lagos, or

(b) Are the natural conditions such as to render the further deepening of the entrance to Port Harcourt impracticable, and in that case could an alternative terminus for the Eastern Railway be provided, say, on the Calabar Estuary?

26. The approach to Port Harcourt is over the Bonny Bar which is crossed by two navigable channels, the weather or western channel and the lee or eastern channel. In the weather channel there is from 15 to 17 feet of water at low tide with a rise of 5 or 6 feet at spring tides. This is the channel generally used, but owing to the heavy swell, especially in rough weather, the draught of vessels crossing is restricted to 20 feet, although a vessel drawing 21 feet might cross at the top of the tide in relatively calm weather. In the lee channel, 2 feet more of water is available, but vessels must cross with the swell on their beam and close down to the breakers on the Baleur Shoals to leeward; many shipmasters therefore hesitate to use this channel, although vessels drawing over 22 feet have at times made the passage. To judge from old Admiralty charts and from the careful surveys made in 1913 and 1920 by the Nigerian Marine Department, the Bonny Bar, unlike the other Nigerian Bars, is subject to comparatively little change. It is, therefore, inferred that it consists of stiff mud or clay, and an investigation which was attempted in 1920 by means of an ordinary sand suction dredger would appear to have supported this view. Owing to the distance (seven or eight miles) of the Bar from the land the methods employed at Lagos are, for financial and probably also for engineering reasons, impracticable. Dredging must, therefore, be resorted to though whether the channel so obtained could afterwards be maintained must depend largely on the nature of the material of which the Bar consists. This can only be ascertained by adequate investigation. We understand that a new dredger, on order for the Marine Department of Nigeria, will be fitted with experimental gear to permit of such investigation.

27. Should it unhappily turn out as the result of the proposed investigation that the dredging of a deeper channel through the

Bonny Bar is impracticable, and that the draught of vessels visiting Port Harcourt must be regarded as limited by the present depth of water on the bar, there would still remain the demand for a second port to Lagos at the terminus of the railway which traverses the Colony eastward of the Niger River. In that case we think that searching inquiry for an alternative to Port Harcourt within reasonable distance of the present railway should be instituted. In this connection, our attention has been particularly directed to Oron, at present a small place on the west side of the Calabar Estuary. There would seem to be no great engineering difficulty in building a branch line from Aba on the Port Harcourt-Kano railway to Oron, where there is deep water. A certain amount of dredging would be necessary to enable vessels with a draught of say 24 feet to reach Oron, and no estimate of the cost of this dredging has been made, although it is worth noting that the material to be removed is probably sand.

28. The question now remains for consideration whether, when the present programme has been completed five years hence, Lagos Harbour should be deepened from 25 feet to say 32 feet. The discussion which we have undertaken in the foregoing paragraphs discloses that there are two cases to be considered:—

(a) Should it be practicable to provide a terminal port with a depth of say 25 feet, for the Eastern Nigerian Railway either at Port Harcourt or on the Calabar Estuary, then Nigeria would have without further deepening at Lagos two principal ports, each the terminus of a railway, available for vessels of the same draught. In that case would it be worth while further to deepen Lagos?

(b) On the other hand, should the proposed investigation show that neither at Port Harcourt nor on the Calabar Estuary is it practicable, either for engineering or financial reasons, to obtain deeper water than will permit of a draught of 21 feet as at present, would it, in that case, be desirable to deepen Lagos, say to 32 feet, with the result that Nigeria would have one first-class port?

29. In the first case the reply of the shipowner and of the merchant would undoubtedly be that no large programme for the further deepening of Lagos Harbour should be undertaken, but that money should first be spent in developing a second port and perhaps also some of the smaller ports. In the second case, should the full investigation show that neither at Port Harcourt nor in the Calabar Estuary is a satisfactory solution to be found, then, however reluctantly, the Nigerian Government, the shipowners and the merchants will have to face the problem of developing Lagos by itself. In that event we think the Government should envisage a programme for deepening the harbour to thirty-two feet, but this programme should only

be carried out as and when demanded by the progress of trade and should be so arranged that it can be arrested at certain stages. It is impossible at the present time to make quite sure of what will be the general trend of policy in the matter of shipbuilding. There are two opposite tendencies at work: on the one hand, the ship of deeper draught and greater capacity is undoubtedly cheaper to operate provided that she can obtain a full cargo without undue delay in port; on the other hand, merchants now hold smaller stocks than formerly and demand more frequent and regular opportunities both for receiving and shipping goods. Only a very great trade can supply the conditions for frequent shipments by the largest vessels. The trade from the West Coast of Africa is assisted only to a limited extent by passenger traffic, and West African exports are divided between several destinations—the United Kingdom, the Continent of Europe, and North America. We have in previous reports expressed the view that it is easy to burden the development of trade by capital expenditure on works in advance of the demand for accommodation.

30. This, however, should not prevent the long view. The map of the internal communications of Nigeria should gradually develop in two ways according to whether the Colony is to possess one first-class port only or a first-class port and one of somewhat lesser rank. In the event of it being found possible to create such a second port, we think this development should take place before proceeding with the further deepening of Lagos Harbour and that, before further work is undertaken at Lagos, those interested should again be consulted as to how soon the development of trade at that port is likely to require the deepening of the harbour to 32 feet to be completed. The programme for the steady development of Lagos should be so adjusted that each improvement demanded by trade may be a contribution to the ultimate design, whether it relates to work on the entrance moles, on the railway, on the road or creek approaches, or on the wharves and other equipment at the harbour itself.

31. We therefore recommend:—

(a) That the Bonny Bar should be thoroughly investigated without delay;

(b) That in the event of such investigation showing that it is impracticable to open and to keep open a deep-water approach from the ocean to Port Harcourt, the possibility of an alternative deep-water port as the terminus of the Eastern Railway, whether at Oron or elsewhere in the Calabar Estuary, should at once be taken into consideration;

(c) That in the event of improvements being practicable within a reasonable limit of expenditure either at the Bonny Bar or on the Calabar Estuary, work should in the first place be concentrated rather on such improvements than on a further deepening of Lagos Harbour;

(d) That in the event of the investigations both of the Bonny Bar and the Calabar Estuary yielding disappointing results, a programme should be prepared for deepening Lagos to thirty-two feet, but that this programme should admit of being carried into effect slowly or quickly as trade conditions may demand.

H. J. MACKINDER, *Chairman*.
S. J. CHAPMAN, United Kingdom.
PETER C. LARKIN, Canada.
E. A. EVA, Australia.
C. J. PARR, New Zealand.
GEO. BOWDEN, South Africa.
VICTOR GORDON, Newfoundland.
A. C. CHATTERJEE, India.
G. GRINDLE, Colonies and Protectorates.
WILLIAM C. CURRIE, Shipowner.
T. HARRISON HUGHES, Shipowner.
W. L. HICHENS, Shipbuilder.
KENNETH LEE, Manufacturer.
JAMES W. MURRAY, Merchant.

R. D. FENNELLY,
Secretary.

London, 20th July, 1928.

NOTE.—The seat of the Irish Free State on the Committee is at present vacant.

APPENDIX I.

The Under-Secretary of State,
Colonial Office,
Downing Street,
London, S.W.1.
6th April, 1927.

100/27.

SIR,

I am directed by Mr. Secretary Amery to transmit to you the accompanying copy of a despatch from the Governor of Nigeria on the subject of the future development of Lagos Harbour with particular reference to the question of increasing the depth of the navigating channels. Fr. Gov. Nig 4th Ja

2. Mr. Amery would be glad to be furnished with the observations of the Imperial Shipping Committee regarding this despatch.

I am, Sir,

Your most obedient servant,

(Sgd.) J. E. W. FLOOD.

The Secretary,
Imperial Shipping Committee.

4th January, 1927.

SIR,

I have the honour to refer to the second paragraph of your Circular despatch of the 7th of September, 1926, in which you point out the advisability of taking steps to consult the Imperial Shipping Committee before making any commitments involving large expenditure in ports destined to serve ocean and not local trade.

2. In Lagos harbour there is now a navigable channel to the new Apapa Wharves for a draught of 25 feet. That is to say that the depth is nowhere less than 26 feet at lowest low water. In addition to normal maintenance dredging the Director of Marine estimates that some 6,000,000 tons of spoil will have to be removed between the East Mole Signal Station and the Apapa Wharves, if the channels are to be made to follow, with a navigable draught of 25 feet, the ideal curves advocated by the Consulting Engineers in their last report. This work will take the existing plant, even if reinforced in about two years time by the new plant recently ordered for Port Harcourt, at least some five years to complete, but thereafter it will be necessary to consider on what lines the further development of the port is to proceed.

3. In this connexion the Director of Marine writes as follows:—

“The question of future work at Lagos calls for some caution perhaps as far as draught is concerned. Up to 23 feet advantage was taken by the shipping companies of every increase with avidity, but since it has been raised to 24 feet, very nearly a year ago now, only five ships have availed themselves of the extra depth. The draught has recently been increased to 25 feet and one of the five ships mentioned above loaded last week to 24' .5" and at that draught could not possibly take on board another bag of produce. Of some 120 vessels engaged in the West African trade at present, only 18 are capable of loading beyond a draught of 25 feet. The scheme of harbour development for Lagos aims at a draught of 32 feet. The only other ports on the Coast with which vessels trading to Nigeria are concerned that will have a draught of this magnitude are Takoradi and Sierra Leone. Before this Government spends any further large sum in deepening the bar and channels of Lagos Harbour beyond what may be achieved as a result of reclamation projects, it might perhaps be as well to consult the

Shipping Companies concerned, and ask them do they propose building ships that will be capable of taking advantage of the increased draught? Their latest mail boat the "Accra," for instance, is not."

4. I agree with the Director of Marine in thinking that it would be inadvisable to incur any heavy expenditure in deepening the channels to a depth of 32 feet without first ascertaining what policy is likely to be adopted by the principal Shipping Companies engaged in the West Coast Trade. It is possible that within the harbour the channels could be deepened to this extent by dredging, but in the entrance and on the bar it is doubtful if dredging alone would suffice, and an extension to the moles involving heavy expenditure would probably be necessary also. It is true that the question is not likely to become an urgent one for some years and may indeed be affected by other factors which it is not possible at the moment to foresee, but none the less I should be obliged if the Imperial Shipping Committee, which is doubtless in close touch with the shipping interests affected, could be invited to consider the matter and give me the benefit of its advice.

I have the honour to be, Sir,

Your most obedient, humble Servant,

(Sgd.) GRAEME THOMSON,

Governor.

The Right Honourable L. C. M. S. Amery, P.C., M.P.,
Secretary of State for the Colonies, &c.

