

vessels arriving from American ports. The evidence satisfied us that a legitimate grievance is disclosed here, but, seeing that the charges are levied and the policy which dictates the point at which the cargo is discharged is fixed by the owners of the vessels, we can make no finding as to the precise reasons or causes underlying this extra charge. We are satisfied, however, that there are influences which seem to operate to the discouragement of the use of the Breakwater Harbour even by steamers which, judging by their weight and draught, could conveniently berth in the Breakwater Harbour. One reason seems to be that the owners of the overseas vessels apparently consider that their vessels are safer working in the roadstead than they would be if berthed at the Glasgow Wharf, whilst the breakwater is in its present unfinished condition. In view of this unfinished condition of the breakwater it can hardly be suggested that this is an unreasonable attitude for owners to adopt.

The ultimate object of harbour-construction at Napier is clearly the abolition of lightering. The evidence satisfies us that nothing less than four overseas berths of sufficient size and with sufficient depth of water will be sufficient to eliminate lightering, even though there might be in the aggregate very few days in the year when all these berths would be required at once. The position is that when these big steamers do come to Napier they will require to be dealt with promptly and will not brook being kept waiting for a berth. Therefore the provision of only two overseas berths would be inadequate and unsatisfactory, both to shipowners and to exporters, and would necessitate the maintenance of lighters as a standby whenever more than two oversea boats were ready to load cargo.

PART 12.—PRACTICABILITY OF HARBOUR-CONSTRUCTION.

(a) AT INNER HARBOUR, OR (b) AT THE BREAKWATER.

We now approach the first of the questions set out on our order of reference. We are asked to inquire into and report whether, in view of reports already furnished and of our investigations, it is *practicable to construct a harbour* suitable for the requirements of the Napier Harbour Rating District as at present constituted, (a) at the Inner Harbour, or (b) at the breakwater. We are treating this question as an inquiry into the physical practicability of extending existing harbours, and we are answering it accordingly.

We view the words “suitable for the requirements of the Napier Harbour Rating District as at present constituted” as a qualification which directs our attention to the geographical features and position of the harbour district, and its potential as well as its present resources and requirements. In answering the question on this basis we *leave out of account* all financial and economic factors that must be weighed when we are answering the third question on our order of reference—viz., whether the expenditure of the money necessary to construct such a harbour can be justified from the financial and economic aspect. *We ask that all who read this report will bear this qualification in mind when reading the present answer.* Furthermore, we wish to say here, briefly, that before answering this question we have studied closely all the factors that, in our opinion, indicate “the requirements of the Napier Harbour Rating District as at present constituted.” These factors will be marshalled and their bearing on the harbour problem discussed in our answers to the subsequent questions on the order of reference.

(a) INNER HARBOUR.

We answer Your Excellency's question in the affirmative. We say, Yes, it is practicable to construct a harbour suitable for the requirements of the Napier Harbour Rating District as at present constituted, at the Inner Harbour. For the present purpose we look upon the Inner Harbour as divided into three parts. Firstly, there is the Inner Basin or Harbour itself, with its adjunct of wharves, embankments, training-walls, and other necessary appurtenances. The evidence satisfies us that by dredging the basin to a sufficient depth, by building the necessary wharves, embankments, and training-walls, and providing the required shore facilities, this portion of the harbour is quite practicable. None of the portions of the work thus described offer any great engineering or practical difficulties.

The second part of the Inner Harbour as a whole is the entrance channel between moles from the Iron Pot to the entrance into the bay. Such an entrance exists to-day, and it is quite practicable to widen it and deepen it as has been suggested, and neither of these works offers any great engineering or practical difficulties, and when done this channel would be a useful and adequate adjunct to the inner basin portion of the harbour.

The third part of this harbour as a whole is the outer channel cut from a point where the channel between the moles ends to a point out at sea where there is sufficient depth of water for vessels desiring to enter the channel. *A necessary adjunct to this channel, in our opinion, would be proper protective works such as are provided in other ports of the world where similar channels are used. These protective works must be sufficient to protect shipping passing through the channel, and to protect the channel itself from the natural forces which operate on an unprotected channel in an open sea-bed.* The provision of such protective works and the dredging and maintenance of such a protected channel, whilst comparatively costly when included in a provincial port, offer, in our opinion, no great engineering or practical difficulties, and this outer channel could be provided so that it would be an adequate and safe entrance to the other parts of the Inner Harbour as a whole.

Our opinion as to the practicability of this harbour accords with that of practically all the experts who have reported, and with the experience of ports built in similar or analogous situations and circumstances. It will be noted that those engineers who in the various reports have condemned the specific Inner Harbour or channel proposals submitted to them have agreed that a satisfactory Inner Harbour for overseas vessels, including an entrance channel, could “at a cost” be built on the site of the present Inner Harbour at Napier.