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R. Nathan
Clerk of the Senate
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THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA



REPORT

from the

JOINT COMMITTEE OF PUBLIC ACCOUNTS

upon

THE COMMONWEALTH NAVAL DOCKYARD, COOKATOO ISLAND

NEW SOUTH WALES.

Enat.

C o n t e n t s

	Page
Proceedings of the Committee - - -	1
Report - - - - -	2
Recommendations - - - - -	3 ^{1/2}
Appendices - - - - -	40.

PROCEEDINGS OF THE COMMITTEE

In the enquiry into the general financial position of the Commonwealth Naval Dockyard, Cockatoo Island, Sydney New South Wales, the taking of evidence was commenced on the 8th June 1915 and terminated on 26th October 1915.

Altogether 28 meetings have been held in Melbourne, Sydney, and Newcastle and 33 witnesses from the Public Works Department of New South Wales, the Department of Defence, Naval Dockyard, Audit Office, and gentlemen in private practice have been examined.

9.

COMMONWEALTH OF AUSTRALIA.

REPORT of THE JOINT COMMITTEE of PUBLIC ACCOUNTS Under the
"COMMITTEE OF PUBLIC ACCOUNTS ACT 1912" UPON THE
COMMONWEALTH NAVAL DOCKYARD, COOKATOO ISLAND
SOUTH COAST NEW SOUTH WALES.

INTRODUCTORY:

Cookatoo Island, the Commonwealth Naval Dockyard lies at the mouth of the Parramatta River in Sydney Harbour. The distance across to the nearest landing jetty on the mainland at Balmain is 260 yards, and to Circular Quay nearly three miles. Communication is maintained between the island and these two points by means of steam ferries. In addition small launches are provided for the use of the Manager and other responsible officers. The cost to the Dockyard of the Balmain Ferry Service is £2,500 per annum, and the men pay their own fares on the Circular Quay Route.

The island is 36½ acres in extent and in its original form was a sand-stone hill rising steeply from the water. A ledge has been cut round a considerable portion of it, and further additions to the working space at the water side have been made by filling in with spoil at various points. On the S.E. end of the island Wharves built over the water add somewhat to the limited space.

The two dry docks, the Sutherland and the Fitzroy are on the Southern side of the island. The Sutherland is the largest dry dock in the Southern Hemisphere, and is capable of receiving such vessels as H.M.A.S. Australia, and the auxiliary cruiser Orana; the Fitzroy Dock supplies accommodation for the Destroyers and other small craft.

The slip ways on which the destroyers, launches and all other vessels with the exception of the cruiser Brisbane have been built are also situated on the South side of the island. On the northern side space has been found to lay down the Brisbane, and there a permanent slipway has now been completed.

The power station, blacksmith boiler, fitting, moulding and other workshops, together with the storerooms are situated on the Eastern fringe of the island. The administrative buildings, the mould loft, joiners, brass finishers shops, timber stores and 11 residences stand on the elevated centre of the Island some 50 feet above the sea level, to which access is obtained by stairways and hoist.

To facilitate the work of the dockyard a tunnel which will be about 400 feet in length is being driven north and south underneath the centre of the elevation, and should save time and reduce the cost of handling materials.

The depth of water round the island varies from 30 to 75 feet at low tide.

In May 1909 the Commonwealth opened communication with the New South Wales Government with the object of securing an area of land suitable for the establishment of a Naval Dockyard. In 1912 the New South Wales authorities having undertaken the construction of ships of War for the Commonwealth at Cockatoo Island, the advisability of taking over this Dockyard as a transferred property was considered. In view of the urgent necessity of acquiring the sole control and use of the Dry Docks and Workshops where the ships of the Australian Squadron could be repaired, negotiations for the transfer of the Island were entered upon.

The actual transfer of this dockyard from the State to the Commonwealth was made on the 31st January 1913. An adjacent Islet known as Schnapper Island was included in the transaction.

The ship building contracts undertaken by the New South Wales Government were for the re-assembling of the "Warrego", and subsequently the construction of the cruiser Brisbane and ^{three} Destroyers ~~Warrego~~. The Warrego was launched on 4th April 1911, and completed for commission 1st June 1912. The building of the Brisbane and the Destroyers was taken over by the Commonwealth with the island. Work was commenced on two destroyers on the 1st August 1912, and their keel plates were laid down on the 25th

January 1913. The Derwent was launched on 19th December 1914 and the Torrens on the 28th August 1915. Both vessels are now receiving machinery and equipment. The keel of the third Destroyer, the Swan was laid down on the 22nd January 1915, and this vessel is still on the slips under construction. In addition to these there have also been undertaken within this period two Dredges, a Ferry Steamer, Tugboat and various lighters and launches. The designs for the larger vessels of the Australian Navy were all prepared in Great Britain. The work and details were elaborated at the Dockyard, and a few minor alterations were introduced at the instance of the Navy Board in the direction of securing more space and ventilation for the Men's and Officer's quarters. For the carrying out of the constructional work and the launching of the vessels when complete the Dockyard authorities are held responsible. The designs for a few small vessels have been prepared by the Staff of the Naval Board, and in some instances by the Dockyard Staff.

Since the outbreak of the War the equipment of a large number of transports has been carried out at the Dockyard.

TRANSFER OF THE DOCKYARD.

By arrangement between the Commonwealth and the New South Wales Government, Colonel Miller of the Home Affairs Department acting for the former, and Mr. Jos. Davis, C.E. representing the State made during the latter part of 1912 a valuation of Cockatoo and Schnapper Islands, the plant and equipment and certain Water Rights. The total was 2867,716. 9. 0 and was made up as follows :-

Cockatoo Island Freehold Land, 36½ acres	296,500
Fee Simple of Bed of Harbour with right to reclaim, 15½ acres.	9,000
Schnapper Island, freehold land 4/10ths acre	1,300
Fee Simple of bed of Harbour with right to reclaim, 6½ acres.	3,375
Exclusive right to establish buoys and construct wharves and jetties inside certain areas	10,000
Workshops, building, houses and furniture	173,923:12: 1
Sutherland and Fitzroy Docks with all plant connected therewith	350,000
Other equipment, tools and miscellaneous	223,617:16:11
	<hr/>
	2867,716: 9: 0

The Commonwealth as already stated took over the Dockyard on this basis, paying the State as from the 31st January 1913, interest at the rate of 3½% equal to, per annum £30,370. 0. 0

Original Purchase money. -----
 Since the transfer there has been added to the 867,716. 9- 0

Capital cost in alterations and improvements to buildings, new machinery & plant etc. a sum of 81,198. 12. 0

In addition to this expenditure and in order to bring the Dockyard thoroughly up to date so that the work proposed to be undertaken there shall be carried out as quickly and economically in all respects as possible, it is further estimated that - - - 335,900. 0. 0

for new machinery and plant will be required together with another sum of - - - 228,373. 0. 0

for new works which brings the total capital cost up to £1,513,188. 1. 0

The cost of the launching ways constructed in connection with the building of the Brisbane but which will be a permanent asset to the Dockyard cannot yet be ascertained. The estimate however is £30,000.

Under the Minister the Cookatoo Dockyard is subject to the general control of the Naval Board, which deals as a whole with matters of policy. For purposes of administration the various ~~work~~ duties are apportioned amongst the individual members of the Board. The position is far from clear, but broadly speaking, it may be said that the first Naval Member controls the civil engineering of the Dockyard, the actual work being carried out by the Naval Works Branch the personnel "comes to a great extent" under the Second Naval Member while the Third Naval Member has charge of the Stores and Construction which latter comprises ship building and ~~the~~ mechanical engineering.

When the transfer of the Island was made to the Commonwealth, the services of the then manager were retained pending the appointment of a General Manager with War-ship building training and experience. A Committee was appointed in Great Britain to make the selection, and Mr. King Salter was recommended. This Gentleman has occupied responsible positions in the building of War ships under the Admiralty. At the time of his appointment to Cookatoo Island he was one of three principal officers on the staff of the Constructive Manager at the Chatham Dockyard.

As General Manager of Cookatoo Island Dockyard Mr. King Salter

is under the control of and is responsible to the Naval Board. All the work of the Island comes under his supervision. The staff under the General Manager is shown in detail in the ^{subjoined} ~~attached~~ diagram. "A"

GENERAL FINANCIAL POSITION.

For local expenditure funds are obtained from the Treasury for the Dockyard upon presentation to the Sub-Treasury Paymaster at Sydney of an application form signed by the General Manager and the Accounts Officer. Usually about £10,000 is applied for at a time. Simultaneously a duplicate form is forwarded to the Director of Navy Accounts, Melbourne, for his information. The money when made available is placed to the credit of the Trust Fund Naval Dockyard Account at the Commonwealth Bank, Sydney. For payment of accounts, wages etc cheques are drawn, signed by the Accounts Officer and countersigned by the Certifying Officer of the Dockyard. The amounts of the cheques so drawn are allocated at the end of each month, and shown on a cash statement under the various heads of charge or votes appertaining to the Dockyard.

For the purchase of materials in England for the Dockyard an amount is placed at the credit of "Trust Account in London."

Orders or requisitions are forwarded by the Navy Board through the High Commissioner to the Admiralty.

Payments are made by the High Commissioner on demand notes of the Admiralty, and adjustments of the Trust A/c: are made by forwarding the Admiralty demand notes to the Treasury.

These are in turn sent to the Navy Office and finally to the Auditor General.

STORES.

When the Dockyard was taken over by the Commonwealth on 31st January 1913 the value of the Stores was estimated at £26,795. "Owing to the enormous rush of work" stock was not taken at the end of the financial year 30th June 1915, but on the most recent figures available it amounted on 30th June 1914 to £36,320.

As far as possible the regular requirements of materials for Cockatoo are procured under the New South Wales State Contract con-

ditions and prices. When goods not covered by contract and under £25 in value are required tenders are invited by the Storekeeper under the General Manager's instructions from at least three local firms. All special requirements over £250 must be submitted for approval to the Naval Board, and are advertised in the Government Gazette and various State newspapers. The Deputy Store Officer states that during the financial year 1914-15, £195,000 worth of material passed through his hands all obtained locally. This appears to be about three times in excess of normal requirements, and is occasioned by the heavy demands due to the War. Special arrangements ~~have~~^{had} to be made for the materials for the construction and equipment of the Cruiser Brisbane and to a less degree of the Destroyers. At the outset of the work the New South Wales Government obtained the materials through its representative in London, but subsequently the Commonwealth undertook the supply of these requirements. Arrangements were entered into with the British Admiralty and particulars are now sent by the Navy Office through the High Commissioner in London. The Admiralty fill these requirements from their contracts, charge the shipments to the Commonwealth and receive the payment. A separate store and a separate record for these materials were of course necessary at Cockatoo Island while the State Government was carrying out the Contract, and since the control was ~~xx~~ assumed by the Commonwealth the same system has been pursued.

INDUSTRIAL:

The Dockyard gives employment to about 2,500 men representing some fifty trades and callings. There has been a considerable increase in the number of men engaged since the War, particularly in connection with the equipment of transports for the conveyance of troops. The industrial conditions are for the most part governed by the Arbitration Court Awards of the State of New South Wales. There are no less than 51 of these awards operative on the island. Difficulties in connection with "armarcation" have not infrequently arisen. The building of Warships being a new industry in Australia, various leading hands have been specially engaged from Great Britain. In addition several Australian Workmen were selected and sent to Great

Britain for special training.

R E V I E W.

The Public Accounts Committee in undertaking an investigation into the financial affairs of Cookatoo Dockyard realised that this was a matter regarding which Parliament was desirous of obtaining special information. Members of the Committee in common with their colleagues in both Houses felt some doubt as to whether this Federal Undertaking was as efficient as it might be and whether therefore, the country was getting reasonable value for its expenditure in this regard. If not, then what were the causes, and what was the remedy?

The question of the transfer of the Dockyard from the State to the Commonwealth Authorities being a matter of Policy did not come within the purview of the Committee, though we had necessarily to make ourselves acquainted with the particulars of this transaction as the natural foundation of our investigation. Moving off from this point the Committee was immediately confronted with a most serious drawback to the efficiency of the dockyard, and which has been present with us right through the whole course of the enquiry. This matter - the deficiency of plant and equipment on the Island - forms therefore the first subject of consideration in this report.

POWER PLANT.

Mr. A. E. Cutler who had charge of the Dockyard both before and after the transfer was made, stated, "at no time was the power adequate". "This was an undoubted drawback to the carrying on of the work at the Island."

Mr. George Alfred Julius, consulting Engineer inspected the Power System generally at the request of the Commonwealth Authorities, 3 months after the Dockyard was taken over. He found that "The Plant consisted of a number of obsolete units in an extremely bad condition". He was asked to report whether they would run three months, six months or a year. He reported that he did not think the plant would last very long, that it was of such a mixed type and so inefficient that it would be useless to consider it in any future scheme. The boilers were practically worn out, the capacity of the plant was inadequate, it was in a very bad condition.

Mr. Cutler's successor, Mr. King Salter said "The very poor power we have has hindered work enormously ~~some~~. We have been able to scrape along only from hand to mouth."

James W. Clark, Assistant General Manager gave evidence as follows: "We are very badly off as regards power and it is heart breaking sometimes. We have been getting through by the skin of our teeth ever since the Commonwealth took the yard over." He spoke also of "men standing back waiting for power."

Mr. Jack Payne, Engineering Manager, said "That there was not sufficient power for the workshops and this was the cause of trouble delay and expense."

Thomas McDougall Mundle in charge of the Power Station and the whole of the plant and electrical equipment of the Dockyard stated, that there was "Nothing like sufficient power plant, This was detrimental to the work on the Island. As a matter of fact the power plant was in a state of break down almost continuously. It was necessary at times to shut down one portion of the works to enable them to go ahead with operations at another portion. As an example, when we cast steel we cannot have everything on the island going, we have to shut down some section of the work to enable us to get the necessary power for casting steel. The power department practically regulated the other departments. When it is necessary to shut down a portion of the work, we have to consult with the other Departments to ascertain what portion it will be most convenient to shut down." "In all big work the power plant was an important feature. It was absolutely essential that a certain surplus power should be provided. There was not a set in the Power Station which was worth re-erecting. Most of the sets were obsolete and second hand. Some of them had done 14 years service before they were installed in the Island, and there was not a single one of them which was worth anything beyond its value as scrap iron."

Captain Clarkson, Third Member of the Naval Board informed the Committee that when the Federal Authorities took over the Island, it was known that the Power Plant was insufficient. It is now two years and nine months since the Island was transferred to the Commonwealth,

and this urgently required plant has not yet materialised. In the interval two makeshifts were resorted to. The electrical plant for the Brisbane, was utilised for some time by the Dockyard Authorities to give them some additional power. When the time arrived for the installation of this equipment on the warship the management was able to make up the loss by the purchase of a secondhand plant which had been placed on the market in Sydney.

Mr. Gufler informed the Committee that as Manager for the Dockyard under the State he had "Taken steps to call for tenders for a plant that would meet all requirements."

When the Federal Government took control the matter was put under revision, and from then onwards till his engagement terminated it remained as far as he was aware in that position.

Mr. Mundle gave evidence that on the transfer of the Island being made the unsatisfactory condition of the plant was pointed out to the Commonwealth Authorities, as also the fact that plans and specifications were complete for calling for tenders. The Naval Board or at least the responsible Member in this connection decided to call in an expert. Mr. George Alfred Julius, consulting engineer of Sydney was approached on the 8th March 1913 on this matter. He was in New Zealand when the letter reached him. On his return he visited Melbourne, received his instructions on the 8th May, and started his work at Cockatoo Island on the 12th of the same month. Mr. Julius' report on the Dockyard was forwarded on the 29th July 1913. Two days later instructions came through from the Naval Board to the Dockyard that the Power Station Plant was to be shut down pending an inspection of the Boilers by a Committee appointed for this purpose. Certain boilers were condemned and working day and night two locomotive boilers were installed and operations resumed on a low steam pressure. Mr. Julius visited Melbourne in the following month to discuss the report with the Naval Board. The further proceedings can best be given in Mr. Julius' own words as taken from his evidence.

"The Cockatoo Island report was forwarded in July, 1913, and I was instructed to visit Melbourne, I think, in the following month to discuss the report with the Naval Board. I was asked whether I

would undertake the preparation of complete plans and specifications for the installation of a plant which I recommended. The formal offer was submitted to me on 19th November, 1913, and I replied on 24th November, generally accepting with one modification. I was notified on 7th December that the Naval Board approved of the modification, accepted my amended terms, and I was instructed to proceed with the work as soon as the Loan Bill had been passed by Parliament. On 16th January 1914 I was instructed to go to Melbourne on 21st January, or as soon after as possible, to confer with the Naval Board. I went to Melbourne on 24th January 1914. The Loan Bill was then through Parliament, and the matter only wanted Ministerial approval. I saw Mr. Millen, the then Minister of Defence, on two or three occasions, and he formally gave his approval, and I received verbal instructions to proceed on 3rd February 1914. These were confirmed by letter on 24th February. The instructions were to proceed with the preparation of plans and specifications for a plant at Cockatoo Island only, on the lines recommended in my earlier report. Those recommendations provided for a Diesel oil-driven plant. This work was at once put in hand, and was nearing completion when a wire was received, on 23rd March 1914, instructing me to interview the new General Manager, who had arrived in Sydney. I interviewed Mr. King Salter on 25th March, and had a very long consultation with him on the whole question. The General Manager had been used to a steam plant, and held strong views concerning the use of imported fuel; but I put forward the argument that he was going to depend upon oil fuel for the destroyers, and that they had a tank steamer on order. However, in deference to his wishes, I prepared alternative plans and schemes for a steam plant, and recommended the same to the Naval Board in a letter of 26th March. I received the Naval Board's concurrence to the amended proposal on 2nd April, and the work was immediately put in hand, but further difficulties arose. The previous report had allowed for further extensions to the workshop machinery in accordance with the then General Manager's wishes, with a margin for extensions, but the new General Manager considered that the extensions to the workshops machinery were quite inadequate, and that ultimately the capacity of the power plant must be doubled. He, therefore, recommended the

abandonment of all previous work on Diesel plant, and that a fresh start should be made.

Question: Do you mean doubling the capacity of the existing power plant? - "No. I mean doubling the capacity of the power plant I had recommended. One of the biggest items was the addition of a very complete and fairly large air-compressing system for the extension of the pneumatic services all through the island. I think 300 horse-power was represented in that new item. I agreed, and we decided to call tenders for both."

Question: About what time was it that you commenced to prepare the estimate for the increased power plant? - "The instructions were received on 2nd April 1914. I think, speaking from memory, that Mr. King Salter had been there about six weeks or two months before he definitely decided what allowance should be made for extensions to the plant. He had to make himself familiar with the whole equipment on the island, and it was a fairly big point for him to settle. I think it was early in June before we made a fresh start. Six complete alternative schemes were prepared with plans, specifications, and full estimates, and the matter was then fully discussed with the then General Manager."

Question: Did you arrive at complete agreement with Mr. King Salter on that point? - "I did not attempt to question his decision, for it was not my duty to question his allowance for size, but I did discuss the matter with him, because there was such a discrepancy between his figures and those furnished by Mr. Cutler. He said he was satisfied that the new machinery would have to be put into the workshop, and therefore I had to make provision for driving that machinery. As was to have been expected, the cost of the plant of double the capacity was very much above the estimate and money voted, and after a careful discussion with the General Manager, it was decided again to completely amend the whole of the scheme, cutting out all outside work that could be cut out, and crowding the plant to utilize existing buildings, but keeping the main items up to the highest standard, so that all outside work could be brought up to the mark in the future, and so achieve a properly-efficient equipment. The General Manager insisted that the extensions he was making to the machines and work-

shops would not permit of any reduction in size of plant, so new plans, specifications, and estimates had to be considered, and five alternative schemes were completely prepared and forwarded to the General Manager for approval on 28th September, 1914. He carefully considered these, and they were ultimately forwarded to Melbourne. In October, to the best of my recollection, approval was received, and shortly after that date I was summoned to Melbourne. I discussed the plans with the Third Naval Member, who approved of them, and said that the matter would go ahead at once. I think the instructions were sent the following week to get the specifications printed.

Tenders for the power plant have now been invited by advertisement in the Government Gazette, these closed on the 25th October 1915.

MACHINERY.

The position with regard to machinery was very similar to the power plant. Mr. Jack Payne Engineering Manager, gave evidence that at the time when the State Authorities contracted to build the Warships at Cookatoo, they were short of machine tools to carry out the work expeditiously. The first estimate of Mr. Julius for improving the equipment of the island included machines and tools which Mr. Outler decided would be wanted very early, but the position had not been materially improved when Mr. King-Salter took charge of the establishment. He found that certain additions to the machinery were urgently necessary and in April 1914 he advertised for tenders in the Sydney Newspapers for a number of machine tools. The advertisement was also sent to the Commonwealth Government Gazette, and a proof was submitted by the Government Printer to the Navy Office for Official Approval. The advertisement was not allowed to appear in the Government Gazette, and Mr. King Salter was informed by the Naval Board that his action was irregular. He was instructed that tenders had to be invited through the Navy Office and by advertisement in the press of the various States. In explanation to the Committee the General Manager stated that at that time he was in ignorance of the Naval Board's procedure, and regarded it as a matter of urgency that the island should be equipped as rapidly

as possible.

In a letter dated 18th July 1914, (addendum) ^B the general Manager sent to the Naval Board a schedule of machine tools which he stated were all necessary while some of them were urgently required. He particularly asked that the order for a Hydraulic Press should be placed immediately as without this machine it was practically impossible to make the boilers of the destroyers. On the 3rd of August and again on the 6th telegrams were sent from the Dockyard to the Navy Office asking for the approval specified in the letter of the 18th July. On the 9th August a confidential telegram was sent to the Minister by Mr. King-Salter asking for a reply to these "pressing matters." The day after, a letter was despatched from the Navy Office giving approval for certain purchases, amount^{ing} to 2 or 3 per cent of the whole. The Hydraulic Press was not referred to, and on the 26th August another letter was sent from the Dockyard to the Navy Office pointing out that the plates for the destroyers had arrived, but no Hydraulic Press was available. It was asked whether this machine had been ordered and when it might be expected. The only reply to this was in a letter dated 30th September in which the Manager of the Dockyard was informed that it had been decided to reinstate tenders for the supply of machine tools by public advertisement in all the States and requesting that specifications for same be forwarded as soon as possible. A further letter was received from the Navy Office dated 25th February asking that particulars of machines required should be hastened so that steps might be taken to put the matter in hand. On the 26th February 1915 a letter was sent from the Dockyard to the Navy Office with the specifications for approval. Correspondence regarding certain details ensued between the Navy Office and the Dockyard, but on the 30th March 1915 Mr. King Salter was informed that the last of the specifications had been approved. The next step was to send the specifications to the Government Printer of the State of N.S.W., and on the 7th May the Navy Office wired to the Dockyard to ask when the printed specifications would be available. On the 31st May the Dockyard Authorities were able to announce to the Navy Office that the

specifications were completed, and were available for distribution upon application by intending tenderers. The tenders were returnable on the 27th October 1915.

Incidentally the Committee followed up the matter of the Hydraulic Press. The General Manager gave evidence that he only obtained permission to buy the machine when, being in Melbourne on other business he spoke of it to the Minister. The full import of this delay appeared later on in the inquiry. The general engineering foreman of the Dockyard stated that "we were delayed in our branch, owing to the defective machinery available for manufacturing the boilers, particularly in regard to the pressing of the drums and water pocket ends". The Foreman Boiler Maker said that "owing to the want of machinery I was delayed for about 9 months with the boiler making."

CONCLUSION. It has therefore taken some 2½ years to advance to the tendering stage, the equipping of the Island with the necessary power plant and machine tools. How much more time it will take to install these requirements on the island, it is impossible to say, in view of the unsettled conditions of the commercial world at the present time.

This is not at all a satisfactory condition of affairs. Admittedly the island was insufficiently equipped for the building of warships when taken over by the Commonwealth. The construction of these vessels had already fallen behind when the Federal Authorities assumed control of the Dockyard. Their completion was being anxiously looked for, and strenuous steps ought to have been taken to overcome the serious shortage in power and machinery. Yet for a year after the transfer of the island, little or no actual improvement was made, though at the time of transfer tenders were about to be called for a plant that was considered would meet all requirements. This scheme appears to have been dropped, apparently as the result of a difference of opinion between the then dockyard manager and the responsible Member of the Naval Board. From this on till the new General Manager took charge the consulting engineer appears to have been busy making reports and specifications.

The calling in of Mr. Julius as consulting engineer was doubt-

less a prudent step, especially as regards the power plant, a mistake in which might easily have proved serious and expensive. This, however, added an element of delay though the evidence shows, that so far as his work was concerned, Mr. Julius cannot be accused of dilatoriness. But differences of opinion between Mr. King Salter and Mr. Julius appear to have arisen, neither had authority to give a final decision, and the position of the Naval Board was apparently one of strict neutrality. Finally six separate sets of specifications were made and at the present time tenders are being called for four of these.

The specifications for the machine tools were under instruction from the Naval Board prepared by the Dockyard Officials. The General Manager admitted that these specifications took a long time to execute - about five months. He explained that the staff were busy with urgent War matters as well. Besides the task was no small one. There were about 180 machines required "and the paper work connected therewith makes a pile of 8 or 9 feet high". Complaints were also made by important witnesses regarding delay that took place in connection with the printing of these specifications. It was stated that the specifications for the Power Plant took six months to print, but it was also explained that Departmental procedure was to some extent responsible. The dock yard "pile" occupied two months in getting out.

Making ample allowance for all extenuating circumstances the committee is unable to arrive at any other conclusion than that there has been undue delay in equipping this dockyard with the necessary plant to enable the building of warships to be carried on expeditiously and economically. It is impossible to specify, even approximately, the loss to the Commonwealth on this account, but there is no doubt whatever that the lack of proper equipment at Cockatoo Island has been a prime factor - perhaps the principal one - in increasing beyond all reason as will be shown later the cost of the work executed at this dock yard. Besides the direct loss in this respect the handling of defective appliances and frequent breakdowns cannot but have had a demoralising effect on the workmen in

still further reducing the output.

The efforts of Mr. Zing Salter to remedy shortcomings when he took charge were not in our opinion adequately supported by the Naval Board. Some of the much wanted equipment was immediately within reach, and we consider the position was sufficiently serious to have justified without any hesitation the suspension of ordinary routine and regulation in favour of the most direct way to its acquisition. There was no question of an immediate lack of funds. Under the loan act of 1913 a sum of £50,000 was available for Power Plant. An amount of £31,300 had been provided for Machine Tools, and in addition there was a sum of £40,000 provided on the 1914-15 estimates, Division 12, Item 5. This gave a total of £121,300 for the equipment of the Dockyard, and out of this sum only £11,300 appears to have been expended, leaving a balance of £110,000 immediately available.

S T O R E S.

The main store in which the Stores Office is situated is on the Eastern Foreshore. It is used for the storage of all small materials, and such as are in constant demand by the various workmen. There is also a large shed near the Sutherland Dock which is now being utilised as a Bulk Store for the heavier materials. Several small storerooms are scattered about the Island adjacent to the working centres.

Mr. George Lawes, Deputy Store Officer told the Committee that on account of shortness of space the stores could not be arranged as they should be. The General Manager stated that the Store House is a very miserable place, "And everything is so jumbled that we have to buy things from hand to mouth. This makes it very difficult to get at the value of the Stores and to enter them up against the cost of the job." Many things had to be stored in the open, which should have been under cover. Temporary roofs had to be erected in some instances to protect materials from the weather.

The pig iron, scrap and such like are heaped at various spots in the open. There is usually a notice which reads to the effect that "nothing is to be removed without the authority of the Deputy Store Officer," but at the last stock-taking a deficiency of over 900 tons of pig iron was discovered. On investigation it was found that these materials for castings had been taken just as wanted without any

issue note and without any record being made. "This had been going on for years." According to the Deputy Store Officer the actual weights of pig iron at stocktaking had not been ascertained for ten years. Inquiries showed that the foundry castings largely exceeded the quantity of pig iron for which requisitions had been made. It is assumed therefore that the shortage in the raw material is only nominal, it having been taken to be worked up without being charred. This means that foundry jobs have been turned out as costing less than their actual value. Steps have been taken to prevent this carelessness occurring again.

Objection was taken to the present system of obtaining stores in small quantities. The quality also in many cases was very poor. Even some of the State Contract supplies were not up to the Dockyard requirements, which were "for the best of everything". It was stated "as quite possible" that as the result of purchasing from hand to mouth as was done at Cockatoo Island that some of the stores thus procured consisted of materials which had been rejected by the Admiralty.

The General Manager has sent in a report on this Stores Question to the Naval Board of which a copy was submitted to the Committee, and is included amongst the appendices. ^{"C"} The Improvements proposed are on Admiralty Lines. "In the Home Dockyards stores are purchased by annual contract let by the Admiralty, and are delivered to the different yards by the Contractors according to a pre-arranged schedule. As these stores are purchased in large quantities their rates can be fixed precisely, and they are all set out in a book called the Rate Book for Naval Stores. This book shows practically everything required for a ship and as nearly everything is purchased by contract, when you learn from this book the Contract Price of the Article required you get the exact rate to charge. When a particular article or store is required for a job the Professional Officer makes out an Issue Note which he sends along to the Store House. The Store House issues the article and the issue note passes on to the expense account branch where the value of the article is ascertained from the Rate Book and the expenditure is very easily recorded against the job."

Mr. Treacy, Director of Naval Contracts, and the Store officer Mr. Lawes, both approved of the Dockyard getting as many of the requirements

as possible through the Admiralty thus getting the advantage of their contracts.

Mr. King Salter did not endorse a suggestion that the obtaining of supplies for the Island should be dealt with by a separate civil department controlling both Naval and Military requirements. He pointed out that the materials utilised at Gookatoo were peculiar to the work of the Island.

In regard to publishing the quotations of all tenderers Mr. Treacy suggested that under such circumstances the best terms might not be obtained. The Admiralty got a closer price than did the trade in Great Britain and the first thing that a tenderer wanted to know from the Admiralty was whether the trade would know the price he quoted.

At the present time the only materials obtained for the Dockyard through the Admiralty are the structural parts and equipment of Warships, which cannot be obtained locally. At the outset, when the State had the contract for the building of these vessels such materials were obtained by the Dockyard Authorities through the New South Wales Agent General in London, and the Consulting Engineer there was responsible for the requirements being properly supplied.

When the transfer of the island "was believed to be imminent instructions were given out that particulars of materials required were to be forwarded to the Naval Board." The Naval Board communicated these requirements to the Admiralty through the High Commissioner. Mr. Outler, the late Manager of the Dockyard was very emphatic in condemning the change in the ordering and obtaining of the materials. The new system was in his opinion wholly responsible for the delay which had taken place.

There appears to be some difficulty also regarding the checking of the materials when received at the Island. A Special Store and storeman with a small staff under him are allotted to this branch. When the cases arrive they are unpacked to ascertain whether the contents agree in weight, and number with the specifications on the "demand note" of the Home Dockyard which being associated with the Bill of Lading comes direct to the Island. The invoices, however reach the Storekeeper in an irregular and belated way. There was

thus considerable difficulty in checking and identifying the shipments. The Storekeeper was unable to give a reason for this. The Invoices did not come direct to the Island - they came through the Navy Office. They often arrived a month or six weeks after the goods. He holds stores for which no papers have^{ever} been received.

No check appears to be made at the Island between the orders for the goods and the goods when delivered. The store-keeper is not in a position to say whether all or a part of any particular order is to hand. For purposes of comparison, and in fairness to the storekeeper, copies of all orders for oversea materials should be supplied to the Stores Branch. In this way a check can be kept on subsequent deliveries.

INDUSTRIAL CONDITIONS.

A Naval Dockyard even on a small scale includes a great many trades and occupations in its activities, and as these are closely related and interdependent it is matter of the utmost importance that each section should be thoroughly effective and doing its share in harmonious co-operation with the others. There ~~was~~^{has} however been at Cockatoo a certain amount of friction, not only between the Dockyard Authorities and employees but also amongst the Unions themselves.

Since the War commenced the average number of workmen employed on the Island is about 2,800, being about 900 in excess of the men engaged under normal conditions for some time previous. The distribution of these workmen is approximately as follows:-

Shipyards	1,550
Engineering	800
Electrical Engineering	100
Stores	50
Civil works	300

Mr. Cutler the ex-manager informed the Committee that when the State Government entered upon the Contract for the building of the warships, there was a shortage of labour at the Dockyard. This had seriously interfered with the progress of the work. At the time of the enquiry there was still a shortage of boilermakers. The Assistant General Manager said "ever since I have been here, there has been a tremendous shortage of boiler makers". It has to be explained that the term Boiler-makers is much more comprehensive than appears on the

face of it. This Union includes in Australia not only the makers of boilers, but iron workers engaged on the construction of the hulls of iron ships such as platers, riveters, caulkers, angle-iron smiths, and drillers.

After allowing for some shortcomings due to want of experience there was a general concensus of opinion that the quality of the work turned out at Cockatoo was very good and compared favourably with that of the British Dockyards. There were however very definite opinions also expressed, that the quantity of work performed at the island was not what it should be, and that there was a certain amount of "malingering or deliberately wasting time." Other witnesses denied this and the President of the Boiler-makers union said that there were rules in his society to prevent malingering, and to safeguard the interests of the employers. He submitted a copy of these rules. Mr. Cutler stated that towards the end of his control of the Dockyard, there was a tendency to "slackening off" by certain sections of the workmen, due he thought to the fact that he was only acting manager, and therefore had less control than previously. The present General Manager said that there was a good deal of slackness, when he took over the island, which he had to a considerable extent overcome. A large percentage of the men "knocked off" at anything up to fifteen minutes before the proper time, both at midday and in the evening. There was no concerted action by the whole of the men in this respect. It was individual. He made no general charge, otherwise he would be doing an injustice to a lot of the men. The same trouble existed in the Imperial Dockyards.

In all the Home Dockyards, including those of the Admiralty, bonus or piece work systems were in operation, wherever practicable, although day labour out of necessity had to be adhered to in some branches. At Cockatoo Dockyard day labour is universal. On day labour comparisons regarding the amount of work turned out at Cockatoo and in Great Britain there was not perhaps much difference, though as regards one branch of industry on the island - "the Riveters" the opinion was more than once expressed by witnesses in responsible positions that the output was less than it reasonably ought to be. Witnesses engaged on this work challenged this statement and claimed

that delays in connection with the staging materials etc. were responsible for any decrease in the output. When it came to a comparison between the results of the day labour system here and the piece work or bonus methods of the British Dockyards the Cockatoo output showed to very great disadvantage. This is also the experience in Great Britain. One witness informed the Committee that the men on piece work at home do two and two-thirds more than the men on day work here in the same time. Another stated that in the case of the boiler makers the output here is only about 1/3rd of the output in England. A third witness declared that a set of riveters comprising three men and a boy at home would do four to five times as much work as a set does in Australia.

Mr. King Salter gave some illustrations of the differences in the cost of certain work at Cockatoo under day labour compared with the Admiralty piece work system. "The cost of riveting steam drums and water pockets of a boiler is 40/- per one hundred at home on piece work as against 70/- per one hundred on day work here. The cost of flanging boiler ends on piece work at Home is 1/- per foot, here on day labour the cost is 6/- per foot. The cost of tubing boilers of 2,400 tubes at Home by piece work is £20, here the cost by day labour is £50. The cost of Ashpans for the Yarrow Boilers by piece work at Home is 16/- each, here by day labour they cost 31/- each. I cannot give the exact figures in regard to the cost of laying and caulking decks, but here is cost approximately three times more. A certain quantity of work can be done in one hour at Home on piece work whereas it takes three hours out here on day work.

The General Manager further explained that "there were two systems in operation in the Admiralty Yard, the Piece System proper in which payment was made at so much per piece in connection with the construction of the hulls of ships and the premium system which is in operation principally in the machinery shops and engine-building works. All piece work prices are determined by experience and are based upon a minimum which will enable a competent workers to earn up to 50% over that standard by increasing his output without undue exertion. Under the premium or bonus system a reasonable time is

fixed for a given job plus an allowance of 50%, and the workman is paid on that basis no matter what less time he takes on the job. The Admiralty has a further provision by which a workman failing through no fault of his own to earn the minimum rate is paid for the time being a fixed day wage."

In the Royal Dockyards 9/10ths of the constructional work was done on the piece work system which also prevailed extensively in private yards.

All responsible officers of the Dockyard who gave evidence were strongly in favour of either the piece work or bonus system. These they said gave better results both for employers and men than day labour, the work was quicker done, and the men earned better wages. The cost of supervision was considerably reduced though thorough inspection of the work was still required.

Evidence was called from the employees side on this subject and the witnesses were opposed to any change from the day labour system. Both the piece work and the bonus methods of payment were alleged to lead to "slumming" of work. No attempt had been made on the Island to introduce premium or piece work because of the opposition of the Union. In Great Britain the Unions at first objected to piece work, but their attitude had since changed. Comparing the day wages at Cockatoo with those earned under the same system in Great Britain the advantage rests entirely with the Australian Workman.

Taking the various metal workers at the Commonwealth Dockyard weekly wage of the skilled artisans ranges from £3 to £4, while ordinary laborers earn a weekly average of £2. 14. 0.

As regards pay in England one witness stated that £2. 4. 0 per week of 8 hours a day was the regular wage on warship construction on the day labour principle.

Under the piece work system, however, which is the more popular one with both Masters and men in Great Britain, although no definite figures were quoted the Committee was given to believe repeatedly that the money earned was even more than could be obtained for the same class of work in Australia. One witness stated definitely that "In England, on the same work a man following the plating branch would get more money than here."

It has been already stated that the work of the Island is carried on under no fewer than 51 separate industrial awards, and it was very obvious to the Committee that much of the friction between certain of the Unions and also between the management and the men was due to the extreme difficulty of interpreting in detail and co-ordinating this multitude of rules and regulations. The General Manager complained of the difficulty of this position. "Here I am" he said, "working under 51 awards, and new ones keep cropping up every day. How on earth can a man run an establishment of this sort and meet the contending forces of 51 different awards." Several Unions cover one industry. There are two painters' unions, there are three carpenters' unions. The labourers have many unions, and many awards and conflicting awards. It is absolutely impossible to try to run this Island on economic lines, when you have so many conflicting rates of pay and overtime, and all that sort of thing, and different rates for night shift. One of the greatest difficulties here is the multiplicity of labourers' unions necessitating the employment of a much larger number of men than is necessary. One Union ~~allows~~ ^{allows} its members to handle steel and iron, another union only allowed its men to handle wood. If I require a labourer to do general carting about the yard, I must have a man of one union to cart the steel and iron and a member of another union to cart wood. Question. Is there no general labourers' union? No. All the painters and dockers insist that they shall cart all wood about, and the ironworkers assistants insist that they shall cart all steel and iron about. I have to pay the assistants to one grade 9/- though the award rate is only 8/-, I have to pay the shipwrights assistant, who is a painter and docker 10/- a day. We should have a uniform rate for labourers, and a man who is a labourer should do ordinary labourers work. Where we require assistance for a mechanical man we should get men accustomed to the trade and get uniformity that way. That is the essence of economy in work of this sort. But as far general carting about, lifting gear and carting about bars and plates I have to have 2 or 3 unions to do this work. Another instance is that the labourers assisting iron workers are not allowed according to the painters and

dockers to clear up the work behind them. I must bring in a man of another union to do that. Only the other day I had the Secretary of a Union here who insisted that I must employ Builders' labourers on a work that had nothing to do with building, that is a coffer dam. Their award is a Federal Award providing for 44 hours a week, and if I employed those labourers for 48 hours the other men work I should have to pay them overtime rates. I could multiply these matters ad infinitum. I had a fight the other day between certain trades over a temporary gantry. The joiners and shipwrights had a battle royal over it as to whether it was joiners or shipwrights work. I managed to fix them up. These questions of demarcation lead to endless deputations. In the last few months I have kept a clerk practically half his time employed in taking down shorthand notes of deputations on questions of demarcation and other grievances. I am glad to say that the grievances are at a minimum, but I have had 88 deputations since last December some of them occupying half a morning or half an afternoon..... This work here has opened up a very large number of new items of work which the men have not come across before, and sometimes it has been a very difficult matter to settle between one trade and another, the question of whose job it is. The amount of time spent in discussing these things and in hanging up the work has been enormous. (Question) Do not the Unions accept the decision of the Management in matters of that kind? "We cannot get them to accept it, I have often volunteered to act as Arbitrator, but they won't accept my Arbitration. The only way is to get them to fight it out amongst themselves, but we find that when they come to an agreement very shortly afterwards it starts up afresh again. They never seem to get to finality. A big demarcation Committee of the Boilermakers engineers and the shipwrights sat the other day. The "Gayundah" was held up about 15 months ago by a dispute between the shipwrights and the boiler makers as to certain work on that vessel, and this Committee has been spending many hours in building up a demarcation. They drew up certain lines, and it was alright so far as they were concerned but trouble arose because they trod on the toes of three or four other trades, whom they had not taken into consideration. The fat was in the fire again. (Question) The

trouble is overlapping of Unions? - Yes. They would not bring the other Unions into the Conference, and the consequence was that the outside trades thinking that a portion of the work belonged to them started trouble. This thing has been going on ever since I have been here. How on earth I can get a settlement I do not know."

Mr. King Salter also pointed out that he was in the anomalous position as Manager of Cockatoo Dockyard of having no standing in the State Industrial Courts. On this question the Commonwealth Crown Solicitor gave the following opinion: "In my opinion the Commonwealth Naval Department as an instrumentality of the Commonwealth Government would not be recognised in these proceedings as an Employer, and is not within that term in the State Arbitration Act. Consequently I do not think that the Management of the Dockyard would have any locus standi before the Court, and if it had I do not think the court would have the power to appoint a Member of the Board to represent the management of the Dockyard." As Mr. King Salter pointed out this opinion cuts the Dockyard Authorities out of the State Courts. "When a Union goes to the Court Mr. King Salter observed, "and asks for a fresh award for a higher rate, I though managing practically the largest establishment in the State, have no standing to make representations as to whether the men's demands are reasonable or not." There was however no legal obligation on the part of the Dockyard authorities to work under the State Awards. But they were given to understand, that there would be trouble unless the Island was conducted under these State Awards, and the Naval Board had given instructions that this was to be done.

Asked if he had any suggestion for overcoming these industrial troubles, Mr. King Salter proposed that the Dockyard should be put under a Federal Industrial Award. He had discussed this question with the Commonwealth Attorney General, and had also written a letter on the subject to the Naval Board, copy of which he submitted. The president of the Boiler-makers stated to the Committee that his Union would object to an award dealing only with Commonwealth Employees. The Commonwealth Award should apply to all the States in his opinion, and to all the employees in the trade concerned. The representative

of one of the Unions on the Island told the Committee that he thought it quite possible for an arrangement to be made to permit of one award only to control the Dock; it could be done in the same way, as three Societies have drawn up their line of demarcation covering their work. If all the trades were to meet in a similar manner, and worked out what each society could do that could be put into one award. Asked if he thought the employees would be prepared to meet and confer as suggested he said, "I believe it is a reasonable suggestion and I think they would be only too pleased to adopt it." He did not anticipate any trouble from the Societies concerned. He thought also that after the Unions interested had come to an arrangement it should be registered by the Court as an Award "because no matter how many agreements are drawn up if you do not make them binding you will find someone trying to break them, sometimes with the best of intentions."

It was admitted by the General Engineering Foreman, Mr. Blundell, that since the outbreak of the war the men had been very reasonable. The President of the Boilermakers Society, Mr. W. J. Murray, not an Employee on the Island denied that the awards were difficult to work under. There was very little friction at Morts Dock. Mr. Murray asserted that the Cockatoo management had for the last three years been trying to play one section against another, that for instance they put shipwrights on to do Boiler makers work, thereby causing unnecessary trouble. Mr. King Salter on recall emphatically denied this, and detailed again the pains he had taken to try to obtain harmony. Witnesses representing the men declared that the difficulty about the Laborers' Unions, arose through differences in the rates of wages under the Awards, - there would be no trouble if the wages stipulated in the respective Awards were complied with.

Meanwhile the Committee is glad to find that an agreement on a give and take basis has been arrived at between the General Manager and the Boiler Makers Society whereby during the course of the War it is hoped that Industrial trouble will be largely obviated. In practice this arrangement extends to all the Unions.

HOLIDAYS.

The men at Cockatoo Dockyard are paid for a considerable number of holidays. It was customary for two or three years past to close the yard from Christmas Eve to the day after the New Year, and the men were paid for the whole of that time. Since the war Christmas Day, Boxing Day and New Years Day are the only holidays at the year end period. Payment is also made for other holidays amounting in all to 13 or 14 days in the year. On the present number of men employed this would amount to £20,000, but on the average number of employees the holiday pay would be about £15,000 per annum. This in the General Manager's opinion was a handicap in competing against private employers, who did not pay for these holidays.

PENSIONS AND GRATUITIES.

No pensions or gratuities are given at the Dockyard for long service, as is the custom in the Admiralty Dockyards in England. In the latter establishments a large percentage of the men "are what is called established" and these on reaching the age of 60 are entitled to a pension which is practically paid out of a deduction from their weekly wages, the remainder of the workmen technically known "as hired workpeople" have the benefit of a scale of gratuities for long service. Mr. King Salter was of opinion that if something of this kind were in operation at Cockatoo there would be a better chance of retaining the services of steady men, which would be highly beneficial to the work.

H.M.A.S. "BRISBANE"

The Committee think the following notes in connection with the building of the Brisbane may not be without interest.

Work in preparation for the laying down of this cruiser was commenced in October 1912. A site was selected on the northern side of the Island, which until then had not been utilised for such purposes. It was partly the solid rock of the island and partly made ground composed of boulders and sand. Sufficient of a slipway was constructed to enable the keel plate of the vessel to be laid down on the 25th January 1913. The contract between the Commonwealth and the New South Wales Government stipulated that the ship was to

be completed by 1st December 1914.

Mr. Outler when questioned as to the suitability of the site expressed himself as having had no doubts on the matter. Certain precautions were observed. There was a danger of some settlement taking place if surface water got in and washed out the same from amongst

the boulders. Steps were taken to obviate such a possibility. As a matter of fact settlement to a slight extent did occur, and wedges had to be driven in places under the blocks to maintain the true levels

Mr. Outler's scheme for launching the vessel provided for carrying the launching ways on piles into deep water, which work was to be carried out while the building of the vessel was proceeding. Some preliminary work was done in that direction, but up to the time when Mr. Outler's engagement terminated the launching way had not been carried out. Questioned as to whether this method would have ~~xxxxix~~ provided for a reliable launching. Mr. Outler replied in the affirmative and also pointed out that the New South Wales Government had "nothing tangible" in regard to shipbuilding beyond that particular contract. He admitted that the scheme of his successor made the launching safer and easier. It would also be a permanent asset. When Mr. King Salter assumed the management of the Dockyard he took objection to the method of launching the Brisbane proposed by his predecessor. In his opinion it would have been attended by very grave risks. Extensive works would have to be undertaken in order to lower the slipway. He obtained the assent of the Naval Board to a scheme by which the slipway would be extended in concrete into deep water and thus provide a substantial and permanent foundation for the lower end of the launching way. To enable that portion of the ways which would be under water to be greased - an important feature of launching - a caisson which would fit closely into the end of the concrete structure was built. On the eve of launching this caisson being floated into place and the water pumped out the greasing and other work could be carried out with ease and absolute certainty.

This scheme was commenced by the Civil Engineering Branch under the supervision of Mr. W. R. Swan in November 1914. A temporary Cofferdam composed of piles and heavy sawn timber was built round the site of the proposed structure to exclude the water

and the principal concrete structure was then proceeded with -
 By this time the building of the Brisbane was well advanced but
 advantage was taken of the delay in completing the launching arr-
 angements necessitated by the new scheme to install the Boilers and o
 other fittings which are usually undertaken after the launching has
 tkane place. The launch was successfully carried out on 30th
 September last.

Mr. Cutlar informed the Committee that when the Contract was
 entered into "nothing very definite was known" as to how the mater-
 ials would be obtained" so the Dockyard Authorities ordered these
 themselves through the State Agent General in England. Under that
 arrangement the materials came to hand satisfactorily, but when
 the Naval Board took charge delay occurred. Mr. Cutlar proceeded
 go explain how the difficulties arose "after we sent forward a re-
 quisition we might hear no more about it, and we would expect it had
 gone forward for execution, but we would have no means of finding
 out. We could get no satisfaction from the Navy Office in
 Melbourne. We were never sufficiently in touch with the ordering
 of materials to know definitely if an order had gone forward or not,
 and so we did not feel that we were absolutely responsible for the
 provision of material after we had sent our orders forward."

Mr. King Salter also found the work seriously delayed by
 the nondreceipt of materials and plant, there was also a general
 shortage of men especially boiler makers which was another cause
 of the delay.

As a set off against all this it is satisfactory to be able
 to put on record that the actual work of building and equipping
 the Brisbane has on the whole been of an excellent quality. The
 turbine machinery in particular is stated to be of a very high class
 character, superior in quality to much of the same work carried out
 in Great Britain.

Considerable allowance must be made in connection with the build-
 ing of this, the first cruiser undertaken in Australia, remote from
 the sources of supply, and latterly under the disabilities of War
 which have certainly placed the Dockyard at an additional and serious
 disadvantage in many respects.

FINANCIAL.

As already stated Cockatoo Dockyard was taken over from the New South Wales Government by the Commonwealth as a transferred property for a sum of £867,716. 9. 0. carrying interest at the rate of $3\frac{1}{2}\%$. Since the property has been acquired a sum amounting to £81,198. 12. 0 has been spent on new works and equipment, thus making an outlay up to 30th June 1915 of £948,915. 1. 0. It is estimated that additional plant and machinery costing £335,900 and new works including buildings, wharves etc. at a cost £228,373 will have to be provided. When all these improvements have been made it is considered that the Commonwealth will be in possession of a Naval Dockyard which will meet all the requirements of the country for a considerable time to come at a total cost of ~~£1,518,287. 9. 0.~~ $\frac{£1,573,188}{12} = 120$. It is intended that this Dockyard besides doing the work required in connection with the Navy will be available for the requirements of other Federal and State Departments. It occasionally executes work for Private Firms.

Although suggestions have been made as to the advisability of certain financial statements in connection with the Dockyard being prepared, up to the time of our inquiry no Balance Sheet has been undertaken, nor has the information usually conveyed in such a Statement been made available.

The Committee finds that in a somewhat similar undertaking, namely the Tanjong Pagar Government Dock Singapore half yearly reports are submitted which include full and detailed particulars of Capital Account and of Receipts and Expenditure.

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The following would be the figures in respect of certain charges at Cockatoo Dock

<u>INTEREST</u>			
Transferred Property	£867,716	@ $3\frac{1}{2}\%$	£230,370. 0. 0
Additions, plant, and machinery installed since taking over,	£81,198	@ $3\frac{1}{2}\%$	<u>2,842. 0. 0</u>
			£233,212. 0. 0

DEPRECIATION:

Buildings valued at £173,923 @ 7½%	13,044.	0.	0
Plant and Machinery 223,617 @ 10%	22,361.	0.	0
Docks, £350,000 @ ½%	<u>1,750.</u>	<u>0.</u>	<u>0</u>
	37,155.	0.	0
Additions, plant and machinery in- stalled since taking over, £81,198 @ 10%	<u>8,120.</u>	<u>0.</u>	<u>0</u>
	£45,275.	0.	0

SUPERVISION:

A Statement was furnished to the Committee by the Dockyard Authorities which shows the number of the supervising staff for June 1915 to be 167, the salaries of these amount to £2,898 per month. The daily average number of men engaged during the same month was 2,898 with a wage pay-sheet of £43,386. The percentage cost of supervising staff to the average number of workmen employed was therefore at that time 6.68%.

In trying to ascertain the value of the output of the Dock, or the cost of any particular undertaking, such as the construction of the Cruiser "Brisbane", we are unable to arrive at anything like accuracy. The regular records of the cost of materials imported for the Warships are not available at Cockatoo and further inquiry at the Navy Office and elsewhere does not enable us to lay our hands on the necessary documents. The only information with which we have been furnished in this connection is by the Acting Director of Navy Accounts, who under date 12th October 1915 writes, "The claims rendered by the Admiralty received in the Navy Office to date amount to £139,598. 0. 0. These claims however are made up as far as the Admiralty is concerned to December 1913 only, though large quantities of material have been received since that date." It is impossible therefore to know accurately what is the value of these later shipments.

Any statements which have been given as to the cost of material used in the construction of the Brisbane are not made up from documents, but are based on estimates made before the construction was commenced. It would appear that London prices for these materials are enhanced on delivery in Australia by about 25 per cent for freights, landing charges, etc., but in the absence of invoices, this figure is largely speculative.

COSTING SYSTEM:

A great deal of clerical work is entailed by an elaborate system of costing introduced at Cockatoo at the instance of the Navy Office. The work is subdivided under some 1500 items in regard to the "Brisbane" alone and responsible Dockyard witnesses stated that this large number was quite unnecessary. The Admiralty system of costing is embodied under 26 heads with subdivisions making about 150 items in all. The Committee is of opinion that while detailed notes of the work should be taken by the Recorders these could with advantage be grouped so far as the office work is concerned under a less elaborate system than that which prevails at present. In this way without interfering with efficiency a substantial saving could be effected.

To ascertain the labour cost of each job Recorders take the time of every man in the establishment, charging it to whatever portion of the work he is engaged upon. By this means it is ascertained that the labour cost of the Brisbane up to 9th June 1915 was £123,106. 0. 0.

What the final labour cost will be is quite impossible to estimate, as the work done on the vessel up to the present affords no basis for calculation regarding the portion to be completed.

The estimated complete cost of the Brisbane as supplied by the Navy Office is £610,000. This does not include any proportionate charges for interest, depreciation or supervision.

. The Sydney built in Great Britain on the Clyde cost £385,000, and the Melbourne constructed at Berkinhead cost £405,000. In making this comparison allowance must be made for the increased cost through freights, landing charges etc, on materials imported for the Brisbane. As another comparison between the cost of work at Cockatoo and elsewhere, the case of the Sister Launches Gresswell, and Jenner was cited to the Committee, the former vessel was built at Cockatoo, the latter by Messrs. Robinson Bros. of Melbourne. The cost of the Gresswell is given at £12,800 which again does not include proportionate charges for interest, depreciation and supervision, such as have to be added by private firms. The Jenner was contracted for at £5,000. We understand that the firm concerned lost about £1,000 on this undertaking.

Adding this to the contract price of the Jenner we find that in the case of the "Gresswell" that certain alterations were carried out costing about £500. There was a further addition to the cost through the vessel having to bear an unusual amount of holiday charges.

Also that considerable delay was caused by non-delivery of materials.

Making due allowance for these it would appear that the launch built at Cockatoo cost about double a similar vessel admitted to be a satisfactory job constructed at a private yard.

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ADMINISTRATION

It will already be obvious to those who have perused this report up to the present point that the evidence tendered to the Committee indicates something to be radically wrong with the administration of Cockatoo Dockyard.

The Committee is strongly of opinion that the divided and ill defined responsibilities of control between the General Manager on the island and the Navy Board in Melbourne do not make for efficiency. While questions of policy such as the determination of what ships should be undertaken may well be a subject for the consideration of the Navy Board and of advice to the Minister, it is not to the advantage of the work of the Dockyard that the responsibility for its proper execution should rest with any others than the Dockyard Authorities. Even if only the formal endorsement of the General Manager's activities is made in Melbourne it is obvious that much time is occupied in the communications which take place in this respect. But as a matter of fact much more than this is attempted and it must be confessed with only a moderate degree of success.

Without making the slightest reflection on the personnel of the Navy Board which includes gentlemen of such ability and general experience in Naval matters, it has to be pointed out that the building and equipping of Warships is highly technical work for the superintendence of which much skill and special training are necessary. The Board aims at fulfilling for the Commonwealth the functions of the British Admiralty but the cases are not parallel. The Admiralty's staff embraces Officers of the highest standing both in theory and practice. It is true that the Naval Board has also a staff, which though small in numbers is, we are to presume in a position to advise the Board in the general supervision of Cockatoo Island. The Committee is not satisfied that such is the position.

RECOMMENDATIONS.ADMINISTRATION.

Taking everything into consideration the Committee are of opinion that the actual work of this Establishment, its equipment, organization, and the ordering of materials should be entrusted to the General Manager of the Dockyard, subject only to the Minister.

STORES.

The Store accommodation of the Dockyard is entirely inadequate, and confusion and loss have resulted.

No delay should take place in putting an end to this unsatisfactory condition of affairs.

For all materials obtainable in Australia, advantage should be taken of the State Contracts. Where the State Contracts are unsuitable the General Manager of the Dockyard ^{should} have power under Ministerial authority to call for tenders and enter into contracts as required.

Where materials are not obtainable in Australia advantage to be taken of Admiralty Contracts.

The High Commissioner should see that triplicate invoices of all materials supplied by the Admiralty are despatched with the Consignments: One copy to the Dockyard: One to the Treasury: and a third to the Minister.

Copies of all orders for goods should be supplied to the Storekeeper for comparison with the invoices and ^{for the} checking of deliveries.

Actual Stocktaking should be carried out annually.

STATEMENT OF ACCOUNTS.

Regarding the Dockyard as a Commercial undertaking it should be carried on under a proper business system. The effect of introducing recognised Commercial methods would be to stimulate all concerned to maintain the highest possible degree of efficiency and economy.

Your Committee are of opinion therefore, that details showing the financial position of the Dock should be prepared and presented to Parliament not later than 30th September of each year, or as soon after that date as the Parliament may be sitting.

That such statement of Accounts should at least show :-

- (a) The Capital Account of the Dockyard, including land, buildings, plant and machinery.
- (b) The amount of money advanced by the Treasury, the amount returned, the amount still owing, and the interest charges.
- (c) The Cash balance unexpended in London.
- (d) The value of finished output, and sales of scrap material.
- (e) The ^{value of} work that is in course of construction.
- (f) An Account of all stores.
- (g) The expenditure for Salaries, wages, material etc:
- (h) The amount written off for depreciation ~~being~~ at the rate of 7½% on Buildings, 10% on Plant and Machinery, and ~~a sum equivalent to 2% on the value of the Docks to be earmarked to a particular fund to provide for contingent liabilities for renewals and repairs to the Docks and Coigsons.~~

INDUSTRIAL.

Regarding the admittedly unsatisfactory condition of industrial affairs at Cockatoo Dockyard, and the urgent necessity for improvement, the Committee has given much careful and anxious consideration to the question of an effective remedy. There is no doubt but that the numerous awards of the State Arbitration Court operative at Cockatoo are a source of much trouble both to the Management and men. A Federal Award as proposed embodies a question of policy such as the Committee cannot take upon itself to determine, but

29

we see no reason why an excellent working arrangement could not be arrived at on the lines suggested by the witness referred to on page 27 of the report. At any rate the codification and consolidation of these numerous State Awards should be attempted, and if Manager and Men are alike agreeable and willing to undertake the task a vast improvement on the existing condition of affairs could hardly fail to be the result. We recommend therefore a Conference with this object in view.

The grave defect of the present industrial arrangements at Cockatoo appears to be the lack of a final authority competent to give a prompt and practical decision on all these industrial troubles. The Demarcation Board decisions may or may not be accepted by the parties interested and the Dockyard Management appears to be in the position of looking helplessly on while the Unions squabble amongst themselves. Furthermore, the work of the Dockyard should not be hung up as is not infrequently the case pending a decision by the Demarcation Board. If the men concerned cannot agree among themselves immediately to a temporary arrangement whereby the work would go on without delay, then it should be competent for the General Manager to issue instructions regarding the situation which would hold good until the Demarcation Board had come to a decision. In the event of the Demarcation Board failing to come to a decision that was acceptable to all parties, a Conference should be held between representatives of the men, and the management, and in the event of no settlement being arrived at, the matter in dispute should then be referred to the Minister for the Navy, or a person appointed on his behalf, whose decision should be final.

In conclusion the Committee desire to express their appreciation of the courtesy and assistance rendered to them by the General Manager, and the Staff of the Dockyard generally.

October 1915.

M. Charlton
Chairman.

The undersigned members of the Committee are of opinion that
the adoption of ^{the admiralty} systems of piece and premium work on a scale
in accordance with recognised rates of pay in Australia would
produce the best results in connection with the industrial
output at Cockatoo Dockyard and give increased remuneration
to energetic and capable workmen.

John Thomson
~~J. M. Fowler~~
Thomas J K Beckwith
L. A. Wilson

Organization of Naval Board

Staff

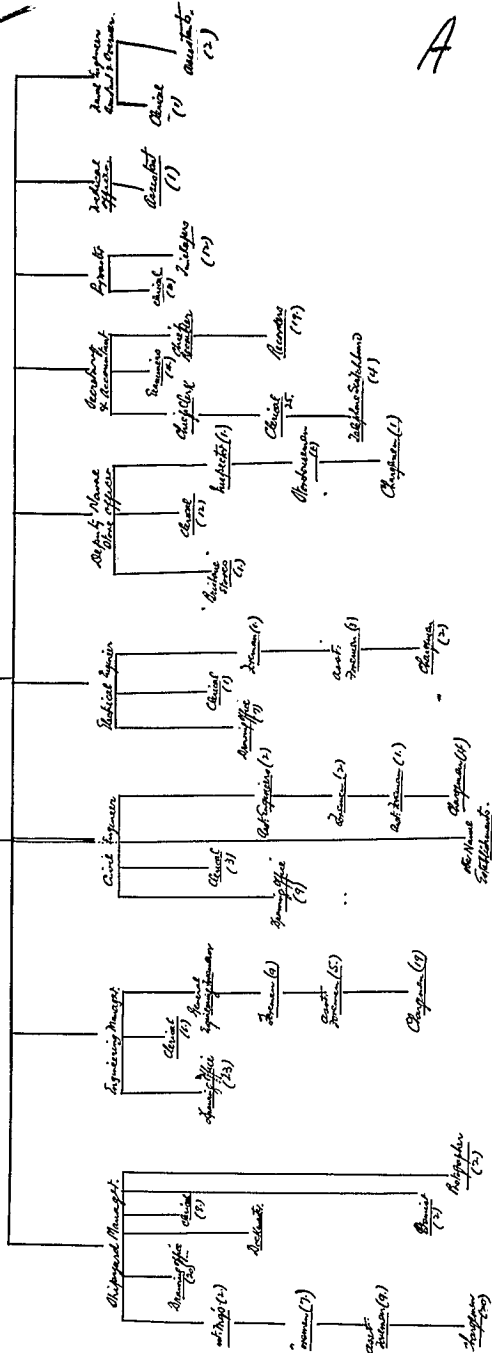
Staff

NAVAL BOARD

GENERAL MANAGER

ASSISTANT GENERAL MANAGER

40



A

44 B

18th. July, 1914.

To
Naval Secretary,
MELBOURNE.

NEW MACHINERY FOR COCKATOO.

Schedule of Tenders for:

1. With reference to the above-quoted letter and telegrams, and in continuance of Yard Letter of 4th inst., No., 7109/287, Schedule of Tenders for New Machinery Tools for the Engineering Manager's Department, as requested, is forwarded herewith, together with a list of the tools and the firms with whom it is proposed to place the orders. A third list is also attached showing the tools arranged in their order of urgency, so far as it is possible to assign any degree of urgency when the whole are equally pressing.
2. The question of the supply of some of these tools is most urgent, especially for the Hydraulic Press for making the Destroyers' Boilers, without which it is practically impossible to make them, and it is submitted that the order for this particular machine may be placed immediately, prior to the approval of the remainder.
3. It will be observed that the Tenders which it is proposed to accept are not all of them the lowest - the reason for this is that the particular tender selected supplies the particular and special machine required.
4. Enclosed herewith is also a tabular list showing the estimated costs for machine tools, yard and floating plant, with which it is considered necessary to equip each shop, etc., at this Yard, and partly in replacement of old and otherwise useless machines.
5. These requirements have been based on the assumption of equipping the Yard for building vessels of the "Brisbane" or somewhat larger type, together with two or three other smaller vessels, such as Destroyers and other smaller craft.

This assumption falls in with the 1st. alternative given by Sir Maurice Fitz-Maurice, in the copy of his report as for-

warded to this Yard in Naval Board letter 14/072, 27/3/14.

6. The machinery for the turbine shop includes plant sufficiently large to deal with the "Australia's" turbines.

7. The list referred to in Paragraph 4. above, shows the totals for each shop or section of the work, and that for Engineering Manager includes the tools referred to in Paragraph 1. above.

8. The estimated costs given are only approximate, but it is anticipated that they are near enough as an estimate, as actual quotations have only been obtained for part of Engineering Manager's tools, and the 15 ton crane for the Eastern Wharf, tenders for which have been submitted in Yard Letter 7109/287 of the 19th ultimo; the figures quoted in the lists include erections, but no foundations, which is a Works estimate belonging to the Director of Naval Works.

9. The estimated requirements amount to £335,900 or say £340,000. It is assumed that a portion of the sum granted by the Loan Act, 1913, will be available, and it is strongly urged that as many of the tenders accompanying this letter may be accepted, as possible.

10. The next most urgent item of machinery and plant is the 5 ton crane for the South Eastern Wharf, work on which is now in hand. This crane will be most urgently required as soon as the Destroyers are launched. Without this crane the work of fitting out the Destroyers will be seriously delayed. The type of crane which is a specialty of Messrs. Babcock & Willcox, vide the enclosed reprint of engineering, dated 30/1/14, would appear to be a most suitable crane for this work. The estimated cost of this crane would be about £2,000. A model of this crane has been seen, and it would appear to meet our requirements the best. It is therefore, submitted that approval may be given to request Messrs. Babcock & Willcox to quote a price for this crane forthwith, so that it may be delivered and erected as soon as possible.

11. It is requested that I may be informed whether tenders may not be called for a portion, if not the whole, of the remainder of the machine tools and plant given in the list referred to in

Paragraph 4. when a detailed list and particulars will be submitted for the next and most urgently required machine tools and plant - observing that it is difficult to differentiate between the urgency when all are so much wanted.

12. My attention has been directed to the various lifts about the yard - These lifts are of a most make-shift character, and dangerous, and it is only by constant attention that they can be kept in working order, and even then are liable at any moment to be the cause of a serious accident. The work of converting these lifts is one that should be done without delay, and approval is required to put this work in hand, vide Item 4, of list, sub-itema (a) Nos. 2, 3, and 4.

13. It is anticipated that a joint report from Mr. Julius and myself re the new Power Plant will be forwarded in a few days.

14. Finally, in view of the length of ^{time} that must ensue before any of the machinery will be available, and also in view of the most pressing requirements of the Yard for most of the new machinery and plant, particularly for those specially mentioned, I cannot press too strongly that orders may be placed for as many of these requirements as possible at the earliest mement.

15. The list of machinery does not include any machinery or plant for Civil Engineering Works.

(Signed) J. J. KING - SALTER.

GENERAL MANAGER.

44

Commonwealth Naval Dockyard,
COCKATOO ISLAND, 18/7/14.

LIST A:-
COSTS OF MACHINE TOOLS, YARD & FLOATING PLANT, ETC.
TO EQUIP ESTABLISHMENT.

Item No.	Dept.	DESCRIPTION.	Amount		Total	
			£.	S. D.	£.	S. D.
1.	S. M.	<u>MACHINERY and PLANT:</u>				
		(a) Ironworkers' Dept.	21,450.	0. 0		
		(b) Air Compressors	5,000.	0. 0		
		(c) " " New m/ins and alterations	1,500.	0. 0		
		(d) Smithery	9,900.	0. 0		
		(e) Shipwrights' Dept.	350.	0. 0		
		(f) Plumbers' Dept	80.	0. 0		
		(g) Joiners' Shop	120.	0. 0		
		(h) Fitting Shop	7,850.	0. 0		
		(j) Sail Loft	250.	0. 0		
		(k) Ironworkers, Fitting out Shop at E. Wharf.	2,530.	0. 0		
		(l) Slip Pumps	370.	0. 0		
			49,400.	0. 0	49,400.	0. 0
2	E. M.	<u>MACHINERY and PLANT</u>				
		(a) Machine Shops	45,200.	0. 0		
		(b) Brass Finishing Shop	3,100.	0. 0		
		(c) Tool Room	2,600.	0. 0		
		(d) Boiler & Bolt Shops	12,600.	0. 0		
		(e) Iron, Steel & Brass Fndrs.	1,470.	0. 0		
		(f) Copper Shop	2,000.	0. 0		
		(g) Turb, Blading Shop	430.	0. 0		
		(h) Fitting Out Shop, alongside Eastern Wharf	150.	0. 0		
		(j) Turb, Machine Shop No. 2	13,350.	0. 0		
		(k) 2-50 ton O'Hd. Cranes, Turb, Shop No. 2	4,800.	0. 0		
		(l) 1-50 ton O'Hd. Crane Turb, Shop No. 1	2,400.	0. 0		
		(m) 2-25 ton O'Hd. Cranes, for Blr. Shop & Mach. Store	2,800.	0. 0		
		(n) 2-5 ton O'Hd. Cranes, for Mach. Shop Extension	1,800.	0. 0		
		(o) Installing New & Re-arrang- ing Existing Machinery	4,000.	0. 0		
			96,700.	0. 0	96,700.	0. 0
Carried forward			146,100.	0. 0		

Item No.	Dept.	Description	Amount £. s. d.	Total. £. s. d.
3	E.E.	<u>MACHINERY and PLANT.</u>		146,100.0. 0.
		(a) Machines for Elect. W'Sps.	650.0. 0.	
		(b) 1/2 ton O'Hd. Runway, with 4 Differential Blocks	<u>150.0. 0.</u> 800.0. 0.	800.0. 0.

YARD and FLOATING PLANT

(a) LIFTS:

(1)	Pass'gr Lift N.E. Corner	800.0. 0.	
(2)	do S.Side, to Convert	350.0. 0.	
(3)	do Mach.Shop "	390.0. 0.	
(4)	do Foundry "	400.0. 0.	
(5)	New Lifts (2), for Str. Hse	1,260.0. 0.	
	(b) <u>FLOATING CRANE</u>	33,000.0. 0.	
	(c) <u>" PLANT</u>		
(1)	Steam Pass'gr & VEHIC. Ferry	20,000.0. 0.	
(2)	"Cyclops", Overhaul	500.0. 0.	
(3)	New "Ruby" Hull & Mach. O'Haul	1,400.0. 0.	
(4)	" Lighters	1,500.0. 0.	
(5)	ASH PUNT HOPPER	5,400.0. 0.	
(6)	Fire Engine	1,500.0. 0.	
	(d) <u>CRANES for YD. E'ment</u>		
(1)	1-10 ton Travelling Cantil'r Plate Yard	8,000.0. 0.	
(2)	1-5 ton F. Jib. Timber Whf.	750.0. 0.	
(3)	2-7-1/2 ton, Luffing Jib, Funnel Yard	2,100.0. 0.	
(4)	1-15 ton Trav'g cantilever for Eastern Wharf	5,000.0. 0.	
(5)	1-5 ton Trav'g Gantry, Australia Pier	3,000.0. 0.	
(6)	1-5 ton Luffing Jib Portal Trav'g S.E. Wharf	2,200.0. 0.	
(7)	1-5 ton do. do. S.Wharf	2,200.0. 0.	
(8)	Wall Crane for Store Hse.	2,200.0. 0.	
	(e) <u>WHARF EQUIPMENT.</u>		
	Capstans Bolla'ds, etc.	1,050.0. 0.	
	(f) <u>SLIP & No.1 Dock</u>		
	Winches	1,230.0. 0.	
	(g) <u>LOCOMOTIVES:</u>		
(1)	2-3 gauge to Rd 30' Rad	1,220.0. 0.	
(2)	1 " " " 50' "	1,530.0. 0.	
	With 5-ton Jib Crane Attached.	97,000.0. 0.	97,000.0. 0.

POWER PLANT & DOCK PUMPING
MACHINERY

Less Balance of £175,000
LOAN ACT

92,000.0. 0. 92,000.0. 0.
335,900.0. 0.

120,000.0. 0.

GRAND TOTAL 215,900.0. 0.

46 C

1st June, 1915.

TO NAVAL SECRETARY.

SYSTEM OBTAINING AT THE COMMONWEALTH NAVAL
DOCKYARD, COCKATOO ISLAND, IN CONNECTION
WITH THE ACCOUNTING OF STORES.

With reference to the above-quoted letters, hitherto, such stores as have not been specially obtained from the Admiralty have been obtained by local purchase from the State Contracts or by obtaining three or more quotations from local firms (by local firms is meant firms in Australia) although this method of obtaining stores has hitherto more or less met the requirements, of the Dockyard, it is not satisfactory for the following reasons :-

- (1).- The class of goods obtained is not in many cases up to the standard quality, which is desirable for H.M.A. Service.
- (2).- The purchasing of small quantities of stores by local purchases involves an enormous amount of work in their receipt, examination, and payment, which may be realised when it is stated that over 1000 vouchers per month have to be dealt with,
- (3).- The constant fluctuation of prices for similar, or somewhat similar articles involves a great deal of clerical work in pricing and recording the costs.
- (4).- Often considerable waste of time and delay to the work is caused by not being able to obtain the stores when required.

It has not been possible to avoid this system hitherto, or to purchase stores in any bulk on account of there being only such a very limited store

storehouse space, and it has been necessary to store considerable quantities of stores in the open, but when the new Storehouse is built - which work is in hand - it will be possible to store much larger quantities, and thus materially avoid the so frequent purchase in small quantities, but it will still be necessary to store certain stores in the open. Also on account of the small storehouse space available, it has not been possible to enter into any contracts specially for the Dockyard, nor has it been possible to form any reliable estimate of the quantities required owing to the very fluctuating character of the work, and to there not having been any systematic records of expenditure upon which to base an annual estimate. This is now being done. It is proposed in the near future that the Department should enter into contracts with local firms to supply the stores required to the standard Admiralty specifications to cover an annual supply to be delivered at intervals.

This report has been withheld until the steps that have been taken to alter the system, or rather alter want of system that obtained at the time of my taking charge of this Dockyard, could be got into working order. This necessarily took much time, and considerable difficulty has been experienced in getting the new system properly adopted, and steps are still being taken to gradually get the Storekeeping Department on still more up-to-date lines, based on the practice of the Royal Dockyards.

The system of accounting, etc., for Stores is as follows :-

ORDERING. The stores are demanded on C.I.22 Forms by the Foreman who submits to the Head of his Department for approval; this is then forwarded to D.N.S.O. for ordering; a requisition is then made out on form No.15 and submitted to the General Manager for approval, and Official orders are then made out and issued to the Contractors to supply: A copy of the order is sent to the Store and one is retained in the issuing office.

RECEIPT. On receipt of the material together with Receipt Note (Form C.I.31) in duplicate, it is checked as to quantity and /or weight by the Asst. Storehouseman

and inspected by a professional Officer, representative of the ordering Department, as to being good and fit for Service; the receipt note is then numbered, duly endorsed, and returned to the Contractor to be attached to his Voucher, Form N.A.4. On receipt, the stores are entered into a Receiving Book, and when the voucher comes to hand it is checked back with this book, then entered into the Storehouseman's Stock Book, and Certificate is given by the Foreman of Stores on the face of the Voucher that it has been correctly entered.

ISSUE: The Stores are issued from the Storehouse on Issue Note No.A.D.184. prepared by the Department requiring the supply, the original and duplicate of which are forwarded to the Store, the triplicate being retained by the demanding Officer. After the stores have been issued, the man drawing the Stores signs both original and duplicate for receipt, and the latter is sent next day to the Foreman receiving the Stores for counter-signature and afterwards returned to the Storehouse where it is retained. After entry in the Storehouse Books of the issue, the original is forwarded to the Accounts for pricing and entry in the Stock Ledger, The cost of Stores is then worked out and charged against the various jobs.

STORES RETURNED TO STORE:

When any material or store is either surplus or is not required for a particular job it is returned to the Storehouse, the Officer returning same makes out a Yard Return Note (Form A.D.83) in triplicate. The receiving Storehouseman gives a receipt on the original and duplicate copies; the original after being entered in the Storehouse Stock Book is forwarded to the Accountant Branch for values and entry in the Stock Ledger. After receipt of the material the duplicate is again signed by the returning Foreman as to concurrence in weights, etc., allowed by the Storehouseman, and then returned to the Storehouse to docket. The triplicate is retained by the returning Officer, and they are at stated intervals checked and signed by the Head of the Department.

STOCK BOOKS:

The Storehouse Stock Book is for quantities or weights only of material received and issued and not values. All values are kept in the Accountant Officer's Stock Ledger. With reference to materials which are kept in the open, i.e., Pig and Scrap Iron, etc., owing to the quantities which have been used in the past without being drawn by issue note, a duplicate Stock Book is now kept by the Foreman who uses most of the material as an extra check on the Storehouse Book, the Foreman being jointly responsible with the Store Officer that the stock is correct.

Stock is taken each year on 1st July, and any surplusses or deficits are adjusted.

(Sgd.) J. J. KING-SALTER.

GENERAL MANAGER.