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JOINT COMMITTEE ON WAR EXPENDITURE

EIGHTH PROGRESS REPORT

CONSTRUCTION OF 300-TON WOODEN SHIPS IN TASMANIA

4th APRIL, 1946.

JOINT COMMITTEE ON WAR EXPENDITURE

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(Appointed 10th May, 1945)

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Senator BURFORD SAIPSON,  
D.S.O., V.D.

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\* Appointed 26th July, 1945, vice The Honorable  
H.V. Johnson, M.P., discharged from attendance.

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JOINT COMMITTEE ON WAR EXPENDITURE

EIGHTH PROGRESS REPORT

CONSTRUCTION OF 300-TON WOODEN SHIPS IN TASMANIA.

1. The Joint Committee on War Expenditure has the honour to submit to the Parliament the following Report consequent upon its investigation into the costs of construction of twenty 300-ton wooden ships in Tasmania.

2. An examination of the official files of the Department of Munitions discloses that, following representations by the Tasmanian Government, the Commonwealth Government, on 5th October, 1942, finally approved of the construction of twenty 300-ton wooden vessels in Tasmania and twelve in Western Australia.

3. On receipt of its order from the Commonwealth Government the Tasmanian Government constituted, under the Shipbuilding Act 1942, the Tasmanian Wooden Shipbuilding Board. An extensive shipbuilding yard was erected at Prince of Wales Bay on the River Derwent, near Hobart, complete with :-

9 Slipways.  
Fitting out wharf.  
Joiners shop - 4,150 sq. feet.  
Mill - 7,680 sq. feet.  
Moulding room - 7,500 sq. feet.  
Life Boat construction shed - 1,196 sq. feet.  
Main issue store - 3,350 sq. feet.  
Bulk paint and oil store - 1,040 sq. feet.  
Welding shop and forge - 4,886 sq. feet.  
Riggers shop - 1,140 sq. feet.  
Refrigeration installation shop - 465 sq. feet.  
Deck house fabrication shop - 3,000 sq. feet.  
Plumbers shop - 800 sq. feet.  
2 Bulk stores - 6,000 sq. feet.  
Recreation block and conveniences - 2,272 sq. feet.

4. Capital, both fixed and working, aggregating £50,000 was provided, £30,000 by the Commonwealth Government in the form of a loan, and £20,000 by the Tasmanian State Government. Construction commenced and continued under the Tasmanian Wooden Shipbuilding Board until about October, 1943, when, to enable production to proceed, further moneys amounting to £20,000 were required. The Tasmanian Government was not prepared to make this amount available, nor was it prepared to amend its Shipbuilding Act to further increase the Board's capital. Con-

sequently, the responsibility for continued production devolved upon the Commonwealth. By a series of Agreements made between the Commonwealth, the State of Tasmania, and the Tasmanian Wooden Shipbuilding Board, dated 8th May, 1944, 29th June, 1944, and 5th July, 1944, the project was taken over from the Tasmanian Wooden Shipbuilding Board by the Commonwealth as a Munitions annexe on 30th June, 1944, and its management by the Tasmanian Department of Public Works. Under these Agreements a maximum amount of £30,000 was approved for capital facilities. Five-eighths were to be contributed by the Commonwealth and three-eighths by the State of Tasmania, and portion of such capital expenditure was to be amortized by charging to the cost of the vessels three-fifths of the total capital expenditure. It was further agreed that the State Public Works Department should receive a profit margin of 3% on production costs.

5. It was originally intended that the vessels, when completed, should be taken over by the Department of Commerce, but after the project was established, the Army intimated its interest in the vessels and its desire to take them over for operational purposes. As a result, numerous changes in specifications were made to meet Army requirements.

6. To date twelve vessels have been completed at the Tasmanian shipyard and handed over to the Army, while three completed hulls and two partly completed are awaiting disposal. The balance of the order - three ships - has not been commenced. With the cessation of hostilities, work on the vessels was suspended in September, 1945, and since that date only a skeleton staff has been employed at the shipyard, mainly on the completion of the three hulls referred to above, and the listing of production materials prior to disposal.

7. When the project was approved by the Commonwealth Government in 1942, tentative estimates of £20,000 per vessel were given, but with the decision to construct the vessels to Army specifications this figure was increased to £37,500. Figures supplied by the Australian Shipbuilding Board, however, show that these estimates were far below the actual costs and this fact, coupled with severe criticism of the Tasmanian Wooden Shipbuilding Board by the Commonwealth Auditor-General and the Auditor-

General for Tasmania, was primarily responsible for the Committee's inquiry.

8. Although final figures are not yet available the following estimated completed costs of each of the twelve vessels constructed in Tasmanian are as follows:-

	<u>Date of completion.</u>	<u>Estimated cost.</u>
Nena	September, 1944	£76,480
∅ Ramah	August, 1944	£78,893
Rahra	July, 1944	£66,470
∅ Wayanna	December, 1944	£78,891
∅ Moorah	September, 1945	£73,658
∅ Remina	May, 1945	£79,854
Rulla	February, 1945	£69,843
Regunta	May, 1945	£69,806
∅ Turrah	July, 1945	£76,170
Weetah	December, 1945	£64,826
Tarra	January, 1946	£65,095
Yolla	December, 1945	£67,253
∅ Refrigerated	Total	£872,239
	Average per vessel - standard	£68,539
	refrigerated	£78,493

The estimated costs of the three completed hulls are -

Lappa	£32,753
Mootah	£32,042
Lomah	£26,542

9. Evidence was taken from the Deputy-Director of Shipbuilding, Australian Shipbuilding Board, and from the Accountant, Australian Shipbuilding Board. The Committee also visited Hobart and inspected the shipbuilding yard at Prince of Wales Bay, and while there took the opportunity of conferring with the Manager of the Shipyard and the Australian Shipbuilding Board's Resident Engineer.

10. From evidence and other information supplied by the Australian Shipbuilding Board, it would appear that the original figure of £20,000 per vessel, and later increased to £37,500, was not based on any detailed estimate as, at the time these figures were given, working drawings had not been completed, and no officer of the Board was in a position to estimate the labour cost likely to apply at the new shipyards which had just been established and which had been obliged to employ men, 90% of whom had no previous shipbuilding experience. The figure of £37,500, however, did represent the Board's technical officers' opinion of a reasonable figure for constructing vessels of the type then proposed

and being developed in the preliminary plans. The following departmental explanations have been advanced as being the chief factors which have increased costs above this figure:-

- (a) The alterations made to the design, and the increased equipment installed to meet Army requirements; these alterations being made after receipt of the Army Order.

Most of the changes referred to were brought about as a result of changed war conditions and the experience gained by the Department of the Army in the operation of small vessels in the war zone. Some typical examples of requests for additions made after the original Army order was prepared are :-

- (i) The provision of equipment on some of the vessels to carry refrigerated cargo. This demand was made by the Department of the Army in November 1943, and at that date the Army estimated that it would increase the cost of each vessel concerned by approximately £5,000. Subsequent experience showed that the additional cost of refrigerating the vessels was of the order of £10,000 each;
- (ii) In January 1944, the Department of the Army requested that wooden hulls should be fitted with metallic sheathing for protection in tropical waters. The vessels were then sheathed at an approximate cost of £500 per vessel;
- (iii) In February 1944, the Department of the Army requested that the capacity of the fresh water tanks should be increased from 1,000 to 1,500 gallons, and later in March asked that two additional fuel tanks be fitted to give a further 600-gallon oil fuel capacity.
- (iv) On the 3rd March 1944, the following requests were made by the Department of the Army:-
- "four winches to be installed on the deck for cargo handling in place of the two originally provided, with the provision of two additional cargo booms and modifications to the hatch construction to support deck cargoes."
- The installation of the two additional winches with their cargo handling gear and consequent necessity for a larger diesel generating set to operate them increased the cost of each vessel by approximately £2,000.
- (v) On the 29th April 1944, the Department of the Army requested that the Board should fit mechanical ventilation to all accommodation spaces, cargo, engine room, etc. The cost of this equipment and the fitting of it to the ships was approximately £600 per vessel.
- (vi) In January 1944, the Department of the Army requested the supply of spare tail shaft, spare propellers and numerous other spares which were to be carried by each vessel; these spares having been found necessary for service conditions and being in excess of spares normally required by vessels of this size. The additional cost of these spares was approximately £500 per ship.

Many other modifications were requested, such as --

- The addition of canvas awnings to the well-deck and the flying bridge;
- the rot-proof treating of all canvas and rope;
- the supply of additional life rafts and life-saving equipment;
- the installation of rifle racks and the addition of armament.

(b) The low output from the semi-skilled labour employed in the Tasmanian shipyard.

The efficiency of production in the shipyard operated by the Tasmanian order shipbuilding Board, Hobart, was very low, even after making allowance for the high proportion of unskilled or semi-skilled labour. The Australian shipbuilding Board was not asked to advise in the layout of the shipyard, or the production methods which were adopted by the Tasmanian order shipbuilding Board. When it was seen that the progress being made was not commensurate with the expenditure, the Australian shipbuilding Board recommended that a change in management should be made. After considerable delays this change was accomplished, but the new management was unable to retrieve the position.

(c) The increased shipyard expenditure due to delays in obtaining propelling machinery imported from the United Kingdom, such delays making it impossible for shipyards to work to a regular schedule for completion of vessels as they were launched:

It was originally intended that the vessels should be powered with two engines of approximately 100 H.P., but it was later realised that to meet Army requirements for service conditions two engines of approximately 100 H.P. each would have to be fitted.

Orders were placed in the United Kingdom for these engines, but due to the acute war conditions deliveries were not made at the rate which had been previously proposed. This resulted in the shipyard having three or four vessels in the water for which main engines were not available. The shipyard, therefore, had no opportunity of carrying out the engine installation and fitting-out in an efficient manner.

A further complication was that whereas Ruston diesel engines had been ordered of a standard type for all vessels, deliveries made comprised:-

Ruston 5 cylinder; Ruston 6 cylinder;  
Blackstone engines and Gardner engines.

The installation of the various types increased the cost, particularly as the shipyard had little previous experience. The various types of engines had different power ratings and operating speeds, and required propellers to be made to suit their particular characteristics with increased expenditure on patterns, etc.

Some of the engines were received without reduction gear boxes, and it was necessary for the Board to arrange for the local manufacture of these, which, for the 'Gardner' installation, cost approximately 2400 per ship.

The position regarding engine supplies was not improved until the local manufacture of Ruston engines was accomplished. The Board has no figure for the cost of production of these engines, but it is probable that it will be considerably in excess of the cost of the imported engines used on the first vessels.

two, each with good handling facilities and cranes. So, generally speaking, the establishment in Tasmania was not well conceived from a practical point of view. The Committee, after a personal inspection of this shipyard, concurs with this view.

12. The Committee was informed that from records which are available, the costs of any type of ship constructed in Great Britain, Canada or the United States of America during the 1914-18 war and the last war, was from two to two and one half times greater than the peace-time cost, due mainly to the employment of unskilled labour; delays due to shortages of materials; and to the necessity of working extensive overtime. The 1913 cost of a certain class of standard freighter in Great Britain was £47,500. In 1915 it was £150,000 and in 1916 it rose to £137,000. Under peace-time conditions in 1924 it dropped to £61,000. In 1934 it was £60,000 and in 1945 it rose to £165,000. The position was similar in both Canada and the United States.

13. Figures supplied to the Committee show that the average cost of construction of ten standard type ships in Western Australia was approximately £7,551 per vessel cheaper than in Tasmania, and the opinion was expressed that this was due to the fact that the Western Australian authorities laid down a more efficient shipyard, whereas in Tasmania it was laid down on more extravagant and less economical lines. Nevertheless, the variation, although it appears large, is not unusual compared with other shipbuilding yards throughout the Commonwealth and in other countries. Figures taken from the Truman Report on Shipbuilding show that the cost of the American "Liberty" ship varied in terms of man hours in different yards from 428,000 to 1,691,000, yet the American authorities kept all their yards in production because ships were so urgently required, and they did their best to improve the less efficient. There were also variations in connexion with small wooden ships that were built in other coastal ports of Australia, the highest being 50 per cent. more than the lowest.

14. In his Report for the year 1943-44 the Commonwealth Auditor-General, *inter alia*, made the following comments:-



- (1) The accounts of the Tasmanian Wooden Shipbuilding Board were subject to audit by the State Auditor-General who reported to the Tasmanian Parliament in very adverse terms in regard to the financial records. In evidence before a Select Committee published in April, 1944, the State Auditor-General reported "...We have no adequate means of determining the actual production costs of those ships...." and "...It was found that no records had been kept of the costs and expenses incurred in connection with the construction of the ships; the only books at present being kept being two cash books, one for receipts and one for expenditure and an analysis of expenditure book kept in ledger form, which, however, is only a further analysis of the nature of the expenditure...".

The expenditure by the Board was subject to investigation by a cost investigator of the Department of Munitions. Advances made to the Board through the Munitions Department totalled 247,866 to 30th June, 1944. The Commonwealth made advance payments considerably in excess of the value of completed work. This practice was authorised by the Australian Shipbuilding Board and appears to have arisen because of the Tasmanian Board's inadequate capital.

- (2) The accounts kept by the Tasmanian Wooden Shipbuilding Board, were insufficient to provide any reliable information of assets and liabilities at 30th June, 1944.
- (3) It would seem that the Commonwealth has had to bear excessive costs arising from various forms of inefficiency in this undertaking. Under the new management improved accounting methods have been introduced.
- (4) The Secretary, Department of Munitions (memorandum dated 6th March 1945) advised the Department of the Army that an estimate of the total cost of the 33 ships (including engines) is 22,000,000. This represents an average of 662,500 each. The Commonwealth is paying an exceptionally heavy price for these 30-ton wooden vessels, the cost per ton being much greater than for the standard 2,000 ton steel ships.

15. With regard to the first three adverse comments by the Auditor-General, the Accountant of the Australian Shipbuilding Board has explained that from an accounting point of view matters were in such a bad state when his Board took over the Yard as an Annex, it had no option but to dispense with the services of the Tasmanian Wooden Shipbuilding Board. A staff was employed to compile accounting records of the Tasmanian Wooden Shipbuilding Board which had never been written up. They are now practically complete and a Balance Sheet has been prepared. Practically everything has been accounted for, capital entirely, while charges for materials, except the records of approximately 217,000 which cannot be traced, have been allocated to the respective ships, having subsequently been traced back through dockets.

16. With regard to the remaining comment by the Auditor-General, it was explained that wooden ships of any type, except small motor launches, will cost more than steel ships and this is one of the chief reasons why steel ships have come into favour. There is the thickness of the planking in the hull of a wooden ship which is built of three-inch stringy bark on the 300-ton vessels. The thickness of the steel hull of an equivalent ship which would satisfy the requirements of Lloyd's would be less than half an inch. Steel is much stronger and, allowing for scrap and waste, it costs about £15 per ton in Australia. The wood for the planking of the 300-ton wooden ships would also cost approximately £15 per ton. Although steel is heavier than wood if the ratio of steel density is taken at about six, and of wood at about one, the total weight of the shell is about two or three times in wood compared with steel.

17. Under the agreement dated 8th May, 1944, made between the Tasmanian Wooden Shipbuilding Board, the Commonwealth Government and the Tasmanian Government, it is provided that:-

"(5) When the Commonwealth shall no longer require the annexe for any purpose connected with the public safety or the defence of the Commonwealth or for the construction of ships for any purpose whatsoever it shall notify the State accordingly in writing and within six (6) months after such notification it shall elect either to retain or to dispose of the annexe and shall notify the State accordingly in writing. If the Commonwealth shall elect to retain the annexe for its own use the price to be paid by it shall be determined by a valuer to be appointed by it and the State. If the Commonwealth shall elect to dispose of the annexe the State may, at any time within six (6) months after notification to it to that effect by notice in writing to the Commonwealth, elect to purchase the same at a price to be determined by a valuer so appointed as aforesaid. If the State shall not elect to purchase the annexe the Commonwealth shall sell the same within a reasonable period. The proceeds of any sale of the annexe shall be divided between the Commonwealth and the State in the proportion in which they shall have contributed to the capital expenditure of the annexe.

(6) Any notice required to be delivered to the Commonwealth for the purposes of this agreement may be delivered to the Secretary of the Treasury of the Commonwealth and any notice required to be delivered to the State for the purposes of this agreement may be delivered to the Under-Treasurer of the State."

18. On 4th February, 1946, the Premier of Tasmania was informed by the Prime Minister that it was probable that work at the Shipyard would cease towards the end of February, 1946, and that it was unlikely

that the Commonwealth Government would require it for further shipbuilding purposes and requesting advice, under the terms of the agreement, as to whether it was the intention of the Tasmanian Government to acquire the Commonwealth interest in the shipyard, both as regards capital assets and stocks on hand.

19. This letter does not appear to indicate definitely, as required by clause 5 of the agreement, whether or not the Commonwealth will elect to retain the works for its own use, but merely refers to probabilities, and in view of the fact that the Committee understands the State Government could possibly lease portion of the shipyard to private enterprise, it considers that the earliest action should be taken to finalise the matter.

20. During its inspection of the shipyard the Committee ascertained that prompt action was being taken by the State Controller of Munitions to dispose of all production materials in accordance with the policy laid down by the Commonwealth Disposals Commission. It was anticipated that any surplus of material remaining after having been offered to other Commonwealth and State departments and the trade, would be sold by public auction by not later than next day.

#### Conclusions and Recommendations.

21. The Committee is of the opinion that, although for the reasons given the costs of construction were high, the vessels constructed served a most useful purpose during the war in the transport of supplies to our troops, particularly in ports where larger ships could not be used.

22. From evidence tendered and from its own observations it has reached the conclusion that the shipyard established by the Tasmanian Wooden Shipbuilding Board was far too elaborate to meet the needs for which it was required. As a result unnecessary capital was expended, particularly in the provision of slipways, which may prove very difficult to realise upon. In view of the amount of capital contributed by the Commonwealth, the Committee is of opinion that greater supervision should have been exercised. It would appear that prior to the taking over of the shipyard as a Commonwealth Annexure, the sole management was left in the hands of the Tasmanian Wooden Shipbuilding Board.

23. The Committee takes the view that no useful purpose would be served by a minute scrutiny of the costs of these vessels. Its chief concern at this late stage is that no further unnecessary expense be incurred and that this well equipped establishment, upon which both the Commonwealth and the State of Tasmania has provided capital amounting to approximately £74,000, is put to good use now that it is no longer required for the construction of wooden ships for the Army. While in Hobart the Committee ascertained that the Government of Tasmania had under consideration the building of a large number of hoes on a site almost adjacent to the Shipyard at Prince of Wales Bay. If such a scheme is contemplated it firmly believes that portion of the Shipyard, particularly its well equipped joinery shop and stores, would prove ideal for the fabrication of wooden hoes or any of its components. It recommends, therefore, that the Commonwealth Government make representations to the Tasmanian Government along the lines indicated.

24. The Committee was informed that the disposal of production materials would be carried out as expeditiously as practicable. It recommends that the Government satisfy itself that this is being done.

25. In view of the likelihood of the State Government being in a position to lease portion of the Shipyard to private enterprise, the Committee recommends that the agreement between the Commonwealth and Tasmanian Governments be finalised without delay.

*D. McLeod*

(D. McLEOD)  
Chairman.

Parliament House,  
Canberra, 4th April, 1946.