

1946.



PARLIAMENT OF NEW SOUTH WALES.

REPORT

OF THE

DEPARTMENT OF PUBLIC WORKS

FOR THE

YEAR ENDED 30TH JUNE, 1943
(Annual Report 1942-43)

Ordered to be printed, 17 September, 1946.

Wholly set up and printed in Australia by
THOMAS HENRY TENNANT, GOVERNMENT PRINTER, SYDNEY, NEW SOUTH WALES.

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DEPARTMENT OF PUBLIC WORKS, NEW SOUTH WALES.

Annual Report for the Year 1942-43.

The Under Secretary, Department of Public Works, to the Honourable John Joseph Cahill, M.L.A., Minister for Public Works.

Sir,

I have the honour to present to the Minister the Annual Report of the Department of Public Works for the year ended 30th June, 1943.

I. ADMINISTRATION.

During the year the large programme of defence and air-raid precaution works has been the Department's major activity. For National Security reasons, such works are not specified. The normal construction and maintenance functions were necessarily curtailed.

The report has reference only to the principal operations of the Department which are in charge of the following officers:—

Chief Electrical Engineer: V. J. F. Brain, B.E., M.I.E. (Aust.), M.I.E.E., Mem. A.I.E.E.
Principal Engineer, Harbours and Rivers: H. F. Searl, Assoc. M.I.E. (Aust.).
Principal Engineer, Water Supply and Sewerage: S. W. Jones, B.E., M. Inst., C.E., M.I.E. (Aust.).
Government Architect: C. Parkes, F.R.A.I.A.
Principal Designing Engineer: A. Lewis, B.E., Assoc. M.I.E. (Aust.).
Co-ordinating Engineer Defence Works: E. R. C. Gallop, L.S., Assoc. M.I.E. (Aust.).
Acting Local Government Engineer: W. R. Carroll, B.E.
Accountant: C. E. Jenkins, A.I.C.A.
Legal Officer: H. V. Everitt, LL.B.
Draftsman-in-Charge (Survey Drafting): V. R. Blacket.
Chief Testing Officer: P. C. Pecover, A.A.I.C.

II. LEGISLATION.

New South Wales Government Engineering and Shipbuilding Undertaking Act, 1943.

This Act, prepared in Bill form by the Department became law. The Act defines the functions of the engineering and shipbuilding undertaking at Newcastle which includes all types of engineering and shipbuilding, ship repair and docking. The undertaking is under the control of a Director. Provision is made for the declaration for the capital cost and for its regular review. Accounts are to be kept in the Treasury enabling the undertaking to function as a trading enterprise.

III. FINANCIAL.

(Details of accounts under this heading appear in Appendix I.)

EXPENDITURE—WORKS AND SERVICES.

The total expenditure and repayments in respect of works and services of the Department during the year may be summarised as follows:—

IV. ELECTRICITY.

(Details of work under this heading appear in Appendix II.)

Power Stations.

At Yanco new office and employees' accommodation has been erected and the new switch-house is nearing completion. Also new switch gear has been provided and installations of the tables for the new lay-out almost finished. At Burrinjuck a screen for the inlet to No. 2 Station was installed. New plant at Port Kembla includes ash conveyor belts, automatic boiler control, condensate piping and valves and equipment for production of 350 mVA switch gear and preliminary work for the erection of the new 7,500 kW generating unit has been commenced.

132 kV Interconnector.

Completion of the Goulburn Control Station has been delayed pending delivery of the permanent control and relay panels. Although hindered by the delay in delivery of equipment and shortage of labour, further progress with the Burrinjuck Sub-Station has been made which has enabled the Goulburn-Burrinjuck Section previously operating at 66,000 volts to operate at 132,000 volts thus completing the 132,000 volts interconnector between Port Kembla and Burrinjuck.

Sydney-Port Kembla Interconnector.

With the exception of circuit breaker equipment at the Port Kembla Sydenham Sub-station due to delay in delivery, this work has not been completed; however, it has been able to put the line into service and the operation of the Metropolitan and Southern Electricity Supply Systems in parallel has been satisfactory. The increased storage at the Burrinjuck Dam permitted of increased generation of hydro-electricity. The demand on the Southern Electricity Supply System alone could not have warranted the utilisation of the additional discharge available at the Dam for generation services, but the interconnector enabled the surplus to be transferred to Sydney and thus advantage to be taken of the opportunity to increase the output of hydro-electricity.

Cowra-Orange Transmission Line.

Following on completion of the Cowra Sub-station, the line was put into service at 66,000 volts. The Koorawatha-Cowra line was changed over from 11,000 to 66,000 volts.

Establishment of Office at Goulburn.

During the year, field administration of the Southern Electricity Supply was established at Goulburn and the majority of the financial operations of the field undertaking including relations with the public with regard to accounts and service are now controlled from that Office.

Finance.

Notwithstanding the reduced rates for bulk and retail supplies and reduced rural service charges, revenue increased and a nett profit of £79,217, £26,000 more than the previous year, was

	Gross Expenditure.	Receipts and Payments.
	£ s. d.	£ s. d.
1. Consolidated Revenue	1,516,151 9 1	133,341 6 9
2. Advances for Department's Working Account		937 18 3
3. General Loans	183,534 17 10	24,556 5 10
4. Special Deposits Account	7,993,280 11 10	2,064,649 19 6
5. Consolidated Revenue—Unemployment Relief Fund	375,356 15 0	82,150 15 0
6. Payments made by other departments for works and services carried out	153,030 7 0	.....
£	10,221,354 0 9	2,305,636 5 4
Net Expenditure	£ s. d. 7,915,717 15 5	

obtained. Factors in the increased revenue were the additional demand for industrial and defence purposes, additional output from hydro-electric sources and the avoidance of expenditure on certain maintenance work which had been deferred.

SYDNEY ELECTROLYSIS COMMITTEE.

The Department has again correlated the interests of the Sydney Electrolysis Committee in the steps taken to minimise the corrosion of underground structures caused by electrolysis.

V. HARBOURS AND RIVERS.

(Details of work under this heading appear in Appendix III.)

Harbour Works.

Major improvement works at Coffs Harbour, Newcastle and Port Kembla continued. At Coffs Harbour, construction on the eastern breakwater completed, making a total length of 1,530 feet and designs were completed for the extension of the jetty in conjunction with the extension of the Timber storage depot. At Newcastle, the Floating Dock was transferred to Carrington and placed in commission, the establishment of a new district depot was commenced, designs for new tie-up berths were completed and designs for additional cargo shed accommodation put in hand. Repairs to the damage on the eastern breakwater at Port Kembla caused by severe storms were commenced and the new lighting system from the floodlight tower on No. 3 Jetty put into operation.

Dredging.

A total of 308,532 tons of material was dredged at an average cost of 13.738d. per ton, compared with 11.163d. per ton for the preceding year.

Defence Works.

A number of coastal defence works, the nature and location of which are not disclosed for security reasons, were carried out during the year. Expenditure involved was £125,917.

VI. WATER SUPPLY AND SEWERAGE.

(Details of work under this heading appear in Appendix IV.)

The greater part of water supply and sewerage activities and stormwater drainage work carried out by the Department has been on behalf of the Commonwealth Government in connection with defence establishments of various kinds. The programme has been extensive, many of the projects being of considerable magnitude. Valuable information was supplied to the Australian Military Forces and the Royal Australian Air Force and the Allied Forces were assisted in various ways.

Overriding supervision of works constructed by Councils was continued while much work is now being executed direct for Councils in the way of investigation, design and construction.

Excluding the metropolitan areas of Sydney and Newcastle there are now 167 towns and villages with reticulated water supplies and 58 towns with sewerage systems, an increase of three water supply and two sewerage systems over the previous year.

Fish River Water Supply Scheme.

The provision of a supply for domestic and industrial purposes to Glen Davis, Portland, Wallerawang, Lithgow and other neighbouring centres has been under consideration and it is proposed to erect a dam on the Fish River near Oberon from which the water will be distributed through a system of trunk mains and reticulations. The estimated cost is £800,000 and the investigation and design have advanced sufficiently for the work to be commenced.

River Murray Waters Act.

The following works previously constructed by this Department have been maintained, operated and controlled during the year, in terms of the River Murray Waters legislation, under which these responsibilities are vested in the Minister for Public Works as Constructing Authority.

Murray River: Hume Reservoir (N.S.W. Section).

Lock 10, Wentworth.

Lock 15, Euston.

Murrumbidgee River: Weir No. 5, Redbank.

Weir No. 7, Maude.

Snowy River Investigation Committee.

The Committee appointed to investigate and report upon the proposals for the utilisation of the waters of the Snowy River commenced its operations in February, 1942. Satisfactory progress was made during the year under review, including extensive field investigation and survey work.

The Department is represented on the Committee by Messrs. J. M. Main, S. W. Jones, and G. A. Whitfield (Secretary), the balance of the members being Messrs. S. T. Farnsworth, Engineer-in-Charge of the Metropolitan Water, Sewerage and Drainage Board, F. W. Brewster, Chief Engineer of the Water Conservation and Irrigation Commission, and R. T. McKay, Consulting Engineer.

VII. ARCHITECTURAL AND PUBLIC BUILDINGS.

(Details of work under this heading appear in Appendix V.)

Apart from normal activities, the Department has given the Defence Authorities all its knowledge and experience in architectural and building works. Owing to the scarcity of builders willing to accept contracts of any size, it was found necessary to depart from the ordinary contract procedure and arrange for the builders to carry out a number of works on the "cost plus fixed fee" basis, in addition to others carried out by day labour.

Subsidised Hospitals.

Works in hand include the following:—

District Hospitals at Parramatta (£80,000), Narrabri (£60,000), Bathurst (£51,750), Lithgow (£42,500), Balmain (£42,000), Canterbury (£35,000), Wollongong (£35,000), and Ryde (£30,000), Royal North Shore (£24,000), and St. Catherine's and Sacred Heart Hospital, Cootamundra (£50,000).

Contracts were let for works at the following District Hospitals:—

Blue Mountains (£39,716), Marriekville (£17,355), Wyalong (£12,278), Cessnock (£11,669), Dubbo (£8,849), Goulburn (£6,830), and Tamworth (£5,880).

Sketch proposals have been prepared for Balmain District Hospital (£42,107), St. George District Hospital (£40,000), Royal North Shore (£22,700), and Nepean District Hospital (£8,650).

Education Department Works.

Building works have been continued at the Technical Colleges at Wollongong (£50,000), Granville (£50,000), St. George (£32,000), Wagga Wagga (£12,000).

Additions and alterations at East Maitland Boys' High School were completed at a cost of £41,700. Additions were carried out at the Gosford Boys' Farm Home for the Child Welfare Department at £24,000.

Sketch plans for the following works have been prepared:—

Wollongong Technical College (£500,000), Lithgow Technical College (£250,000), Wagga Wagga Technical College (£200,000), Maitland Girls' High School (£75,000), and a number of others ranging from £26,500 to £5,000.

Housing Schemes.

In co-operation with the Commonwealth, twenty more cottages have been erected at Lithgow, also two dormitories for females and a recreation room at the Hostel. Defence works and National Emergency Services building works under the defence works programme aggregating many hundreds of thousands of pounds, have been completed throughout the State. Works in the protection against air raids were continued in public buildings and hospitals, also for the protection of the "floating population." The expenditure was again heavy.

Engineering and Shipbuilding Undertaking, Newcastle.

Architectural works commenced last year are nearing completion. Provision is made for general administrative offices and accommodation of the workmen, the anticipated final cost being £25,000.

VIII. LOCAL GOVERNMENT ENGINEERING AND DEFENCE WORKS CO-ORDINATION.

(Details of work under this heading appear in Appendix VI.)

The Department continued to carry out defence works of an extensive and varied nature, some of the projects occupying large areas and involving the expenditure of millions of pounds. The Department also kept a co-ordinated and supervising authority for the defence works carried out by the various State Departments and instrumentalities and local government bodies.

The defence works entrusted to the Department included munition factories, aerodromes, Air Force Depots, fuel storage tanks, gun emplacements and Civil Constructional Corps Camps.

Survey.

Considerable survey work was undertaken by the Department for defence works and in connection with housing projects.

IX. ENGINEERING DESIGN.

(Details of work under this heading appear in Appendix VII.)

Engineering Design services are utilised in connection with all engineering activities of the Department and involve preparation of plans, specifications, etc., for requirements of defence, water supply, sewerage, stormwater drainage, harbours, electricity and shipbuilding.

X. SURVEY DRAFTING.

(Details of work under this heading appear in Appendix VIII.)

General survey drafting, recording, heliographing, photostating, plan registration is type of work preparatory to constructional operations carried out. Such services have been rendered also for council, defence, Commonwealth and National Emergency Services works.

XI. TESTING AND INSPECTION.

(Details of work under this heading appear in Appendix IX.)

The estimated value of materials tested and inspected prior to despatch amounted to £632,507, comprising the following:—

	£
Cement—4,113,933 bags (171,414 tons)	625,660
Valves, hydrants, etc.	6,847
Total	632,507

Private firms and individuals in addition to Commonwealth and State Government Department and Councils have continued to utilise facilities for testing provided by the Department.

XII. ENGINEERING AND SHIPBUILDING UNDERTAKING, NEWCASTLE.

(Details of work under this heading appear in Appendix X.)

Rapid progress has been made both in development of the dockyard and in the variety and in volume of orders fulfilled by the undertaking.

The floating dock was moved from Walsh Island to the new site at Carrington on 26th April, 1943. Ninety vessels aggregating 475,077 tons were docked during the year, and in addition, fifty vessels were repaired.

The turnover of the undertaking for the year ended 31st March, 1943 amounted to £347,700.

XIII. STANDARDS ASSOCIATION OF AUSTRALIA.

The Department has continued to avail the services of its technical officers to the Standards Association of Australia for representation upon numerous committees totalling more than one hundred, which are concerned with the issue of new specifications and codes, revising existing publications, and giving interpretation upon the technical character of specifications, etc.

The Department has further assisted the Association by reviewing draft standards, whether Australian, British or Empire origin, which were referred to the Department for comment.

XIV. ROLL OF HONOUR.

During the year a further three members of the staff enlisted in the fighting forces; this brings the total enlistments from the Department to 197, and it is with pride that I append the additional names hereunder:—

Allan, E. B.
Dight, F. J.
Emanuel, L.
Heagney, J. B.—Transferred from A.I.F. to R.A.A.F.
Harvey, T. C. (M.M.)—Transferred from A.I.F. to R.A.A.F.
Silversides, G. L.—Transferred to A.I.F. from R.A.A.F.
Way, A. S.—Transferred from A.I.F. to R.A.A.F.

Particulars of casualties, decorations, etc. are as under:—

Casualties.

Armstrong, M. M. (Missing).	Mathers, J. B. (Killed).
Bourne, L. E. (P.O.W.)	Mooney, L. K. (Missing).
Clements, L. P. (P.O.W.)	Munro, C. M. (P.O.W.)
Coles, L. G. (Missing).	Peterson, R. F. (Missing, presumed dead).
Davis, A. (P.O.W.)	Pietri, R. C. (Missing).
Fulton, M. (P.O.W.)	Purdon, T. (P.O.W.)
Geach, J. H. (P.O.W.)	Stone, R. C. (Previously P.O.W., now exchanged).
Jackson, B. J. (Missing).	Wilsteneroff, R. (P.O.W.)
Kibblewhite, W. G. (P.O.W.)	
Kennedy, L. W. (P.O.W.)	
Marsden, M. (Missing).	

XV. CONCLUSION.

The extensive defence and A.R.P. programme of works undertaken by the Department continued to make exacting demands on the staff. I desire to express my appreciation of their diligence and proficiency in the performance of their duties, which proved to be a considerable factor in the successful execution of the year's work.

Yours faithfully,

D. FORD, Under Secretary.
Under Secretary.

APPENDIX I.

EXPENDITURE—WORKS AND SERVICES.

The total expenditure and repayments in respect of works and services of the Department during the year may be summarised as follows :—

	Gross Expenditure.	Receipts and Payments.
	£ s. d.	£ s. d.
1. Consolidated Revenue	1,516,151 9 1	133,341 6 9
2. Advances for Department's Working Account		937 18 3
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4. Special Deposits Account	7,993,280 11 10	2,064,649 19 6
5. Consolidated Revenue—Unemployment Relief Fund	375,356 15 0	82,150 15 0
6. Payments made by other departments for works and services carried out	153,030 7 0	.....
	£ 10,221,354 0 9	2,305,636 5 4
<i>Net Expenditure</i>	£ 7,915,717 15 5	

STAFF: NUMBER AND SALARY.

The numerical strength of the staff and the annual salary charges as at 30th June, 1943, together with a comparison of similar particulars for the previous year are set out hereunder :—

	Officers, Permanent.		Officers, Temporary.		Total	
	No.	Salary.	No.	Salary.	No.	Salary.
1941-42—		£		£		£
General Staff.....	502	230,160	616	194,779	1,118	424,939
Dredge Service	108	35,494	84	26,076	192	61,570
	610	265,654	700	220,855	1,310	486,509
1942-43—						
General Staff.....	512	235,108	698	230,275	1,210	465,383
Dredge Service	114	38,988	72	23,256	186	62,244
	626	274,096	770	253,531	1,396	527,627

The above figures include only employees under the Public Service Act, and do not cover many employees not in that classification.

CONSOLIDATED REVENUE FUND.
Details of Expenditure and Repayments.

	Expenditure.	Repayments.
	£ s. d.	£ s. d.
(a) Salaries and Payments in the nature of salaries.....	181,477 19 0	.....
(b) Maintenance and Working Expenses other than salaries	22,773 1 9	.....
(c) Maintenance of Public Works and Services—		
Harbours and Rivers	21,471 12 11	.....
Dredge service	171,087 9 10	.....
Public buildings	119,285 10 1	.....
Water supply, sewerage and stormwater-drainage	5,920 13 9	.....
State power supply	745 14 10	.....
State telephone services	42,674 5 7	.....
Electricity and gas	62,778 10 10	.....
River Murray waters	16,750 0 0	.....
Purchase of survey instruments	144 17 1	.....
(d) Other Services—		
National Emergency Services	676,462 18 6	.....
Services for other departments	25,613 9 7	.....
Purchase of motor vehicles	2,096 7 3	.....
South-west Tablelands Water Supply—Deficit on working	25,014 17 4	.....
Purchase of helio machine	588 10 1	.....
Circular Quay promenade—Cleaning	394 5 0	.....
Sewerage at Broken Hill—Advances to Water Board	17,000 0 0	.....
Leichhardt Depot—Custody of idle plant	4,488 10 8	.....
Junee Water Supply—Estimated deficit in operations of undertaking	7,474 4 1	.....
Surry Hills Day Nursery and Nursery School ...	1,986 12 0	.....
Miscellaneous	1,030 4 11	.....
Snowy River—Investigation Committee	591 8 9	.....
Work outside boundaries at St. Marys, Villawood and Rutherford	107,912 0 0	.....
Receipts returned	154 11 1	.....
Exchange on remittances .....	.....	238 10 11
Unforeseen expenses	203 14 2	.....
(e) Revenue received and paid into Consolidated Revenue—		
Payments to previous year's Consolidated Revenue Vote .....	.....	70,883 9 3
Rent ex land .....	.....	1,974 15 0
Unclassified receipts .....	.....	7,183 4 7
Commission to cover cost of collection of premiums—Group Assurance Scheme .....	.....	224 10 7
Miscellaneous services rendered.....	.....	52,836 16 5
£	1,516,151 9 1	133,341 6 9

Advances for Departmental Working Account and other purposes—Advances to be recovered.

	Expenditure.	Repayments.
		£ s. d.
Commonwealth works		937 18 3

GENERAL LOAN ACCOUNT—DETAILS OF EXPENDITURE AND REPAYMENTS.

	Expenditure.	Repayments.
	£ s. d.	£ s. d.
Sydney Harbour Bridge .....	.....	1,556 15 2
Harbours, rivers and dredges	36,131 15 1	16,912 14 0
Water supply works	5,226 11 1	188 13 5
Sewerage and stormwater drainage	298 18 7	6 10 0
Public buildings	66,404 1 2	676 4 2
Grain elevators	30 1 2	.....
Electrical works	74,370 19 5	4,751 11 11
River Murray Commission	100 0 0	.....
Border railways	22 12 5	.....
Public watering places .....	.....	73 14 11
Circular Quay improvements	949 18 11	390 2 3
£	183,534 17 10	24,556 5 10

£ s. d.
Net Expenditure 158,978 12 0

SPECIAL DEPOSITS ACCOUNTS.
DETAILS OF EXPENDITURE AND RECEIPTS.

	Balance at 1st July, 1942.		Receipts.		Total.		Expenditure.		Balance at 30th June, 1943.	
	£	s. d.	£	s. d.	£	s. d.	£	s. d.	£	s. d.
Public Works Store Advance Account ..	121,688	6 4	182,318	10 6	304,006	16 10	266,417	9 5	37,589	7 5
June Water Supply Administration Account	21,801	14 11	17,815	7 9	39,617	2 8	36,298	15 4	3,318	7 4
Broken Hill Water Supply Administra- tion Account.....	10,444	15 8	490	4 3	10,934	19 11	10,934	19 11	.....	.....
Unclaimed Salaries and Wages Account	1,512	9 1	13,932	16 11	15,445	6 0	11,894	13 5	3,550	12 7
Unclaimed Moneys Account	224	19 4	348	6 8	573	6 0	361	1 6	212	4 6
Public Works Department Working Account	15,032	17 1	210,198	6 3	225,261	3 4	206,621	17 1	18,639	6 3
Motor Vehicles Working Account	1,469	13 10 <i>Dr.</i>	3,481	19 4	2,012	5 6	9,674	19 9	7,662	14 3 <i>Dr.</i>
Pipe Testing Suspense Account.....	100	7 8 <i>Dr.</i>	23	11 11	73	15 9 <i>Dr.</i>	.....	.....	76	15 9 <i>Dr.</i>
Mobile Workshop Working Account ...	.....	.....	1,589	17 0	1,589	17 0	1,245	8 7	344	8 5
Public Works Suspense Account—										
Generally	26,303	3 2	61,906	13 6	88,209	16 8	29,739	15 11	58,470	0 9
Bathurst Housing Scheme	11,724	16 6	4,520	15 6	16,245	12 0	15,642	7 1	603	4 11
Bourke—Cunnamulla Road	2,200	0 0	699	13 0	2,399	13 0	2,433	15 0	465	18 0
Broken Hill Water Board	6,470	0 8	7,984	19 7	14,455	0 3	13,451	4 2	1,003	16 1
Kyogle Sewerage	14,065	19 8	149	18 11	14,215	18 7	11,693	11 7	2,522	7 0
Western Division Weirs	10,934	15 0	1,013	17 5	11,948	12 5	11,572	16 1	375	16 4
Yaralla Hospital	3,595	6 5	1	19 11	3,597	6 4	2,332	10 1	1,264	16 3
Australian Shipbuilding Board ...	1,700	0 0	.....	.....	1,700	0 0	1,161	18 11	538	1 1
Hospitals Commission Suspense Account	352,865	12 1	961	6 5	353,826	18 6	331,213	18 6	22,613	0 0
Broken Hill Water Board Renewal of Assets	12,663	16 5	11	6 11	12,675	3 4	9,524	10 1	3,150	13 3
Security Deposit Trust Account	11,251	16 11	8,003	7 4	19,255	4 3	11,116	4 1	8,139	0 2
June Water Supply—Renewal Account	4,025	8 11	2,032	8 6	6,107	17 5	.....	.....	6,107	17 5
Bethunga Water Supply	164	6 0	148	18 1	313	4 1	41	12 4	271	11 9
Southern Electricity Supply—De- preciation Reserve Account	596,061	11 0	149,844	15 6	745,906	6 6	23,530	9 9	722,375	16 9
National Emergency Services Suspense Account	13,057	18 2	15,146	3 4	28,204	1 6	3,313	5 0	24,890	16 6
South West Tablelands Water Supply— Renewal Reserve Account	32,790	0 5	9,441	5 8	42,231	6 1	2,370	0 0	39,861	6 1
Port Kembla Haulage and Shipment— Renewal Reserve Account	31,984	16 5	4,940	11 3	36,925	7 8	3,488	16 2	33,436	11 6
Burrinjuck Electricity Supply—Working Account	9,635	0 0 <i>Dr.</i>	21,670	1 11	12,035	1 11	12,035	1 11	.....	.....
Leichhardt Depot Working Account ...	656	3 0	25,541	19 3	26,198	2 3	23,459	19 0	2,738	3 3
Testing Branch Working Account	3,586	4 8	10,323	15 9	13,910	0 5	13,264	15 11	645	4 6
Port Kembla Electricity Supply— Working Account	12,352	18 9 <i>Dr.</i>	13,207	12 3	854	13 6	854	13 6	.....	.....
Port Kembla Haulage and Shipment of Coal	8,065	1 2	60,779	19 7	68,845	10 9	67,887	10 2	957	10 7
South West Tablelands Water Supply Working Account	28	8 7	67,233	11 4	67,261	19 11	63,565	6 6	3,696	13 5
Yanco Power Station—Working Account	445	0 5	6	8 0	451	8 5	451	8 5	.....	.....
Southern Electricity Supply—Working Account	95,801	7 8	436,723	15 3	532,525	2 11	458,024	18 7	74,501	4 4
State Timber Yards—Working Account	26	0 0 <i>Dr.</i>	26	0 0	.....	.....	.....	.....	.....	.....
State Saw Mills—Working Account ...	362	10 8	15	4 6	377	15 2	.....	.....	377	15 2
Treasury Fire Risks Account.....	5,699	15 5	.....	.....	5,699	15 5	223	0 4	5,476	15 1
State Brickworks (Homebush)—Work- ing Account	130	7 10	.....	.....	130	7 10	10	11 1	119	16 9
State Monier Pipe & R. C. Works— Working Account	146	16 8	.....	.....	146	16 8	.....	.....	146	16 8
Australian Shipbuilding Board .....	.....	.....	1,430	9 8	1,430	9 8	96,078	3 3	94,647	13 7 <i>Dr.</i>
Lithgow Housing Scheme .....	.....	.....	185	16 6	185	16 6	36,102	12 6	35,916	16 0 <i>Dr.</i>
State Metal Quarries—Working Account	27	13 8	0	2 6	27	16 2	.....	.....	27	16 2
Adjustment of Advances made to State Government for Commonwealth Works	51,210	13 0	133,940	16 4	185,151	9 4	163,253	17 8	21,897	11 8
Building Construction Branch—Working Account	42	15 2	.....	.....	42	15 2	2	12 1	40	3 1
Commonwealth Government Defence Works .....	.....	.....	169	5 9	169	5 9	1,228	14 10	1,059	9 1 <i>Dr.</i>
Commonwealth Government—Specific Defence Works .....	.....	.....	573,800	4 4	573,800	4 4	5,928,472	6 9	5,354,672	2 5 <i>Dr.</i>
Graving Dock—Garden Island .....	.....	.....	18,622	1 9	18,622	1 9	31,671	2 9	13,049	1 0 <i>Dr.</i>
Balance of Salaries Adjustment Account	2,533	6 4	3,912	18 1	6,446	4 5	2,533	6 4	3,912	18 1
Advances to Officers to Purchase Pro- ducer Units .....	.....	.....	2	11 2	2	11 2	34	11 3	32	0 1 <i>Dr.</i>
Interest on Advances to Officers for Purchase of Producer Units .....	.....	.....	0	4 2	0	4 2	.....	.....	0	4 2
Commonwealth Government—Floating Dock, Newcastle	78,049	19 3	.....	.....	78,049	19 3	78,049	19 3	.....	.....
	£ 1,525,796	13 5	2,064,649	19 6	3,590,446	12 11	7,993,280	11 10	4,402,833	18 11 <i>Dr.</i>

UNEMPLOYED RELIEF FUND—DETAILS OF EXPENDITURE AND REPAYMENTS.

	Expenditure.	Repayments.
	£ s. d.	£ s. d.
Roads and bridges	8,273 19 1	3,947 4 8
Harbours and rivers	55,842 6 3	71,581 5 1
Country towns water supplies	4,282 17 11	.....
Emergency Relief Works—Shire and Municipalities.....	.....	160 1 1
Stormwater drainage works	11,848 11 11	3,690 7 7
Buildings generally	103,701 2 5	2,027 7 0
Miscellaneous minor works.....	92,782 0 2	744 9 7
National Emergency Services	98,625 17 3	.....
£	375,356 15 0	82,150 15 0

Net Expenditure £ s. d.
293,206 0 0

PAYMENTS MADE BY OTHER DEPARTMENTS FOR WORKS AND SERVICES CARRIED OUT.

Department.	Expenditure.
	£ s. d.
Aborigines Welfare Board	2,530 2 0
Agriculture	988 1 3
Allied Works Council	669 7 3
Attorney-General and Justice	31 8 0
Australian Red Cross Society	13,401 10 0
Broken Hill Water Board	454 13 4
Charcoal Production Board	209 10 8
Chief Secretary	179 17 9
Child Welfare	3,700 7 4
Commonwealth Government	200 0 0
Education	76,732 15 1
Explosives	42 4 7
Forestry Commission	2,058 10 8
Government Insurance Office £455 5 1	
Accident Pay 652 3 8	
	1,107 8 9
Government Motor Garage	75 0 0
Government Printer	2,778 2 7
Government Stores	711 6 2
Homes for Unemployed Trust	38 4 10
Hong Kong Government	3 4 2
Hospitals Commission	61 19 9
Housing Commission	2,796 19 4
Hunter District Water Board	39 6 11
Interior	92 12 8
Labour and Industry	1,327 8 5
Lands	263 8 9
Licenses Reduction Board	28 18 9
Local Government and Housing	1,611 13 11
Main Roads	169 2 11
Maritime Services Board	82 13 1
Mines	1,692 10 0
Milk Board	1,085 14 5
National Emergency Services	6,797 3 9
Police	53 3 1
Premier's	871 6 2

	£ s. d.
Brought forward	122,885 16 4
Prices Commission	27 10 9
Prisons	20 3 8
Public Health	3,149 19 4
Public Trustee	4,444 0 6
Public Service Board	14 8
Registrar-General	32 5 4
Repatriation Commission	53 5 7
Resumed Properties	1,637 9 3
Supply and Development	3 7 0
State Electoral Commission	12 3 1
State Lotteries	131 1 8
State Superannuation Board	5 14 5
State War Effort Co-ordination Committee ...	1,232 8 3
Sydney University	10,324 10 11
Taxation	16 17 5
Treasury	44 0 1
W.A.N.S. Headquarters	9 6
Water Conservation and Irrigation Commission	371 14 7
Workers' Compensation Commission	11 9
N.S.W. Government Engineering and Shipbuild- ing Undertaking	8,636 2 11
	£153,030 7 0

FINANCIAL ASSISTANCE TO MUNICIPAL AND SHIRE COUNCILS.

The expenditure in this connection during the year was £1,632 0s. 0d., made up as follows:—

Consolidated Revenue: Unemployment Relief Fund:	
Works, Grants, etc.:	£
(1) Roads and Bridges	807
(2) Harbours and Rivers	Cr. 170
(3) Miscellaneous Minor Works	995
Total	£1,632

Details of expenditure are shown in the appendices to this report.

GRANTS MADE AVAILABLE TO MUNICIPAL AND SHIRE COUNCILS IN RESPECT OF NATIONAL WORKS DURING THE FINANCIAL YEAR 1942-43.

Municipal Councils.

Council.	Work.	Consolidated Revenue—Unemployment Relief Fund Works, Grants, etc.		
		Roads and Bridges.	Harbours and Rivers.	Misc. Minor Works.
		£ s. d.	£ s. d.	£ s. d.
Albury	Aerodrome and Alexandra Park .....	.....	.....	54 6 9
Blackheath	Aerodrome .....	.....	.....	0 10 7
Gerriongong	Tar surfacing Berry Beach road	C.R.1 12 4	.....	.....
Gerriongong	Berry Beach road	C.R.10 0 0	.....	.....
Gosford	Breakwater and wharf, Koolewong Waterfront road, and foreshores reclamation.	0 6 6	C.R.170 11 5	.....
Greater Newcastle City	Heaton Park improvements .....	.....	.....	388 2 4
Hurstville	Tar surfacing Georges River Feeder road	C.R.577 6 0	.....	.....
Katoomba	Cliff drive extension	C.R.329 16 4	.....	.....
Narrandera	Aerodrome .....	.....	.....	17 15 3
Orange	Reconstruction of Edward street	1,500 0 0	.....	.....
Taronga Zoological Park Trust ...	Park improvements .....	.....	.....	500 0 0
		£ 581 11 10	C.R.170 11 5	960 14 11

**GRANTS MADE AVAILABLE TO MUNICIPAL AND SHIRE COUNCILS IN RESPECT OF NATIONAL WORKS
DURING THE FINANCIAL YEAR 1942-43.**

Shire Councils.

Council.	Work.	Consolidated Revenue—Unemployment Relief Fund Works, Grants, etc.		
		Roads and Bridges.	Harbours and Rivers.	Misc. Minor Works.
		£ s. d.	£ s. d.	£ s. d.
Dumaresq	New England National Park roads	C.R.35 0 1	.....	.....
Hastings	Kew-Laurieton road	106 4 8	.....	.....
Holbrook	Woomargama-Dora Dora road	C.R.36 1 0	.....	.....
Manning	Hannam Vale Crown Sub-division roads	188 5 3	.....	.....
Murrumbidgee	Motor Camp at Wyangala Dam .....	.....	.....	34 8 3
Turon	Reconstruction of Hill End-Bridle Track road	2 5 5	.....	.....
Yarrowlumla	Captains Flat road	35 13 0	.....	.....
Yarrowlumla	Foxlow-Hoskingtown road	C.R.35 13 0	.....	.....
		£ 225 14 3	.....	34 8 3

APPENDIX II.

Electricity.

CONSTRUCTION.

POWER STATIONS.

Yanco.

A new office for the Power Station Superintendent and a men's accommodation room was completed. The new generator switch-house is practically complete.

New switchgear of the truck type to replace the original obsolete and dangerous equipment has been delivered and is in course of being connected. The feeder switchgear has been placed in a building erected for that purpose, and the extensive three-core cable work for the new layout is also completed.

Burrinjuck.

A steel screen for the inlet to No. 2 Power Station was manufactured and placed in position. The construction of the tail race for No. 2 Power Station was suspended owing to the shortage of labour.

Port Kembla.

Work was commenced on the removal of existing condensing plant and foundations in the turbine room to make way for the new 7,500 kW. turbine alternator and steam raising plant for which tenders have been called.

The new ash conveyor belt was installed and an additional spare belt obtained and Tenders were called and an order placed for a duplicate coal elevator and conveying plant. The automatic boiler control on No. 7 unit was installed and gave satisfactory test results. The condensate piping and valves were completed for No. 7 unit.

The "dualock" bus zone relay protection scheme was put into service to safeguard the 350 mVA switchgear, and provision has been made by the installation of a terminal structure, cables and control board for the two new high capacity feeders for Wollongong.

Wyangala.

Tenders have been called for a 7,500 kVA water turbine alternator.

132 KV INTERCONNECTOR.

Goulburn Control Station.

The permanent control and relay panels are still in the course of manufacture. A third staff cottage was completed in November, 1942.

Burrinjuck Substation.

Construction of the 132 kV terminal substation has progressed slowly owing to delay in delivery of equipment and to shortage of labour. Two 132 kV circuit breakers, two 66 kV circuit breakers, 132 kV lightning arresters and the main control board were erected, and work was begun on the control and high tension electrical connections. A start was

made on the modifications of No. 1 Power Station equipment, required for the remote control of this station from the Substation. The steel towers for the 66 kV lines between No. 1 Station and the Terminal Substation were erected, and stringing of the conductors almost completed.

The main transformers were put into service to energise the Burrinjuck-Goulburn section of the 132 kV Interconnector at 132,000 volts, the Switching arrangements at Burrinjuck being temporary pending completion of the Substation.

Transmission Line.

The Goulburn-Burrinjuck Section, previously operating at 66,000 volts, was operated at 132,000 volts, thus completing the 132,000 volt interconnection between Port Kembla and Burrinjuck.

SYDNEY-PORT KEMBLA INTERCONNECTOR.

Port Kembla Substation.

With the exception of the 66,000 volt circuit breaker this substation has been completed.

Sydenham Substation.

Completion of this work awaits the delivery and erection of the 66,000 volt circuit breaker.

COWRA-ORANGE TRANSMISSION LINE.

Cowra Substation.

This substation was completed and put into service in November, 1942.

Transmission Line.

The 66,000 volt line from Cowra to Orange was put into service and the Koorawatha-Cowra line was changed over from 11,000 volts, at which pressure it had operated since 6/12/'36, to 66,000 volts.

WYANGALA-COWRA TRANSMISSION LINE.

Preliminary investigations were made in connection with the location and construction of the 19 miles transmission line between Wyangala Substation and Cowra Substation.

TRANSMISSION LINES AND SUBSTATIONS GENERALLY.

The pole structures for the 6,600 volt Port Kembla-Wollongong double-circuit feeder were erected and are now ready for stringing the conductors.

Eighty per cent. of the work of re-insulating the pin insulator section of the 33,000 volt outer ring, Port Kembla Division, was completed.

The whole of the electrical installation to No. 3 Jetty at Port Kembla has now been completed with the exception of the plug receptacles to the cranes. The reconstruction of the No. 4 Jetty Substation and the electrical installation of this jetty was commenced.

Work on the reconstruction of the Port Kembla Distribution Depot buildings was commenced and is proceeding.

OPERATION AND MAINTENANCE.

POWER STATIONS.

Yanco.

Operation of the power station was generally satisfactory throughout the year and routine maintenance was carried out on all plant. Due to war-time activities in the food production industries the average output increased by 9 per cent. over the previous year.

Burrinjuck.

The two power stations operated satisfactorily. In addition to normal maintenance, No. 4 Turbine was given a major overhaul.

Due to water restrictions the plant was operated for some 13 hours a day only, but discharge from the Dam progressively increased until 5th September, 1942, when the power available could not be fully utilized by the Undertaking and arrangements were made for the surplus to be absorbed into the Metropolitan area. Full output continued during the irrigation season which ended in April, after which the output was limited by reduced water discharge. The energy generated throughout the year was 89 per cent. greater than for the previous year.

Port Kembla.

Operation of the power station was satisfactory. No major plant failures occurred and the boilers and generators were subject to normal routine overhaul.

Owing to the increased output from Burrinjuck the energy generated during the year was 36 per cent. less than for the previous year.

Statistics.

Generated.	1942-1943.
Burrinjuck	96,219,100 kWh.
Port Kembla	56,424,116 "
Yanco	11,481,111 "
 Purchased.	 1942-1943.
Sydney	1,605,342 kWh.
A.I. & S. & S.P.C. Co.	7,720 "
 Total Generated and Purchased	 165,737,389 kWh.

Used in Stations.

Burrinjuck	139,860 kWh.
Port Kembla	2,122,431 "
Yanco	479,588 "
	2,741,879 "

Sold.

Bulk	68,788,402 "
Industrial	46,801,513 "
Miscellaneous	3,516,969 "
Retail	1,199,172 "
Sydney	14,214,340 "
Yanco	11,001,523 "
	145,521,919 kWh.

System Losses (Excluding Yanco) .. 12.8 per cent.
Station Maximum Half-hour Demand, kW:

Burrinjuck	20,400
Port Kembla	21,600
Yanco	2,675

Station Annual Load Factors per cent.

Burrinjuck	54
Port Kembla	30
Yanco	49

The energy sold was 17.2 per cent. more than last year, most of the increase being due to export of surplus power to Sydney. Excluding Sydney, the increase in energy sold was 5.7 per cent.

TRANSMISSION AND DISTRIBUTION.

The operation of the system and, in particular, the 132 kV Interconnector, continued to be satisfactory. Maintenance was confined mainly to routine work except that in the Port Kembla Division replacement of the old type OB Insulators and steel crossarms was carried out; maintenance schedules in this area were not completed owing to pressure of defence and reconstruction work.

The system was paralleled with the Railway Department's System at Orange for the first time for testing purposes. Good performance has been obtained with the operation in parallel with the Metropolitan and Southern Electricity Supply systems through the Port Kembla-Sydney Interconnector. High storage level at Burrinjuck Dam and the consequent higher discharge enable the output at the time to be stepped up. The demand on the Southern Electricity Supply system would not have absorbed the additional power, but the surplus was transferred through the interconnector to the Metropolitan Area and thus permitted advantage to be taken of the favourable conditions for hydro electricity generation.

AIR RAID PRECAUTIONS.

An additional 114 air raid warning installations have been installed while installations in portion of the North and South Coast Areas are progressing. Routine maintenance is carried out on all air raid warning equipment and efficiency of the system as revealed by the bi-weekly tests has proved to be satisfactory.

COMMERCIAL.

SOUTHERN ELECTRICITY SUPPLY.

Extensions.

Generally speaking the shortage of manpower and materials throughout the year have made it impossible to carry out any extensions of the supply lines except for defence purposes.

New Rates.

Notwithstanding the new reduced Supply Rates, revenue from bulk consumers showed a slight increase. Reduced rates, together with the reduction in the Rural Service Charges resulted in the revenue from retail supplies dropping from £21,500 to £19,500.

Establishment of Goulburn Office.

During the year the field administration of the Southern Electricity Supply was established at Goulburn, and the financial operations of the Undertaking are now assembled in that office with the exception of certain matters which can be handled more conveniently in either the Port Kembla or Cootamundra District Offices. The whole of the Undertaking's relations with the public as regards accounts and service are handled at Goulburn.

Financial.

Notwithstanding the application of reduced bulk and retail rates and rural service charges, the revenue for the undertaking as a whole increased and the net profit was £79,217, £26,000 more than the previous year.

The increased revenue and profit was due largely to certain temporary war-time conditions—high revenue from industrial consumers remained constant and the requirements of defence establishments and of the Department's bulk consumers were substantial. Also the sale of surplus hydro-electricity to the Metropolitan Area was a considerable factor and some items of maintenance expenditure were necessarily deferred owing to manpower and materials shortages and restrictions on transport.

It will be appreciated with regard to the profit of £79,217 that it is desirable to provide adequate reserves to meet the inevitable recession of some revenues after the war and to provide for less favourable years in hydro-electric generation and to make good the arrears in maintenance work.

WORK FOR OTHER DEPARTMENTS, &C.

Work in connection with the development of the State.

The department's administrative activities relating to the electrical development of the State have included such matters as engineering, economic, commercial and administrative advice to Local Government Bodies and franchise holders, work in connection with the obtaining of the Governor's approval as required under the Local Government Act for agreements of various types, the raising of loans and the installation of additional generating plant. Investigations have been conducted and reports prepared on various matters receiving the attention of the Electricity Advisory Committee.

The Department assisted the Coonabarabran Shire Council, following on the destruction of its power station by fire, by making available an officer and obtaining a mobile generating plant for the council.

Additional Generating Plant.

Investigations were conducted and appropriate recommendations made regarding the plant requirements of the Dubbo Lighting Company and the Forbes and Parkes Municipal Councils.

DEFENCE WORKS.

The Department has performed a considerable volume of work for the Commonwealth Government in connection with electricity supply and services to military establishments throughout the State. Such work included design and constructional supervision of distribution lines, sub-stations and reticulations and the negotiation of agreements to cover supply of electricity and general maintenance of reticulations and services, as well

as advice to local supply authorities in cases where the additional load created by such establishments had placed a demand upon local generating facilities in excess of its effective capacity.

The Department has also carried out investigations and submitted reports to the Commonwealth Government on matters concerned with the release of materials and electricity supply matters generally and has given technical assistance to the Prices Commissioner in matters relating to electricity charges.

SYDNEY ELECTROLYSIS COMMITTEE.

The Department has again throughout the past year correlated the interests of the Sydney Electrolysis Committee in the steps taken to minimise the corrosion of underground structures caused by electrolysis, the investigative and field work having been carried out by the Technical Sub-Committee.

A limited amount of new protective equipment has been installed and the existing equipment has been maintained and adjusted as required to meet any changes occurring.

APPENDIX III.

HARBOURS AND RIVERS.

The total expenditure on construction and maintenance amounted to £666,020 6s. 3d., as detailed hereunder:—

Harbours and Rivers Work	£271,693	16	8
Dredge Service Work	208,249	10	11
Miscellaneous Work	223,157	19	4
Total	£703,101	6	11

HARBOUR WORKS.

During the year, improvement works at Coff's Harbour, Newcastle and Port Kembla were continued. Designs were completed for the extension of the Coff's Harbour Jetty in conjunction with the Extension of the Timber Storage Depot, and tenders invited for the supply of the necessary materials. Repairs to the storm damage at the Port Kembla eastern breakwater were put in hand and various improvements to the port facilities carried out.

At Newcastle, the Floating Dock was transferred to Carrington and placed in commission, construction work on behalf of the State Engineering and Shipbuilding Undertaking was continued, the establishment of a new district depot was commenced, designs for new tie-up berths were completed, and designs for additional cargo shed accommodation were put in hand.

Wharves, Jetties, Breakwaters and Training Walls along the coast were maintained generally to the extent permitted by the funds available and materials procurable. Fuller particulars of these works are given later.

DREDGING.

The quantity of material dredged during the year totalled 3,086,532 tons at an average cost of 13.738d. per ton, compared with 11.163d. per ton for the preceding twelve months. The expenditure for the year amounted to £208,249 10s. 11d., of which £67,256 1s. 0d. was expended on dredge repairs.

DEFENCE WORKS.

A number of coastal defence works, the nature and location of which are not disclosed for security reasons, were carried out during the year, costing £125,917 17s. 2d.

RIVER ENTRANCES.

During the year, the more important of the river entrances were worked by bar dredges and were maintained at a fairly satisfactory depth in view of the time that dredges were available at each port. The bar harbours generally are subject to seasonal changes in depth and direction of entrance channel, and are also dependent to a large extent on the volume of upland waters for periodical scourings.

Particulars of depths at Low Water Spring Tides of bars and crossings at the various river entrances are detailed hereunder:—

Entrance.	Maximum.		Average.		Minimum.		Days at Minimum depth.	
	Bar.	Crossing.	Bar.	Crossing.	Bar.	Crossing.	Bar.	Crossing.
Tweed	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.		
Richmond	9 0	10 9	5 9	8 1	3 11	6 0	2	1
Clarence	11 6	10 0	9 10	9 1	7 0	8 3	1	1
...	16 0	11 0	11 9	9 8	8 3	8 3	1	3
Nambucca	...	*18 6	...	*17 9	...	*16 0	...	*6
Pilot Station closed down on 27th July, 1940.								
Macleay	9 6	11 6	8 2	10 8	7 3	9 6	3	1
Hastings	7 0	6 0	6 0	5 3	5 0	4 0	1	1
Camden Haven	7 3	6 3	5 10	6 0	4 6	5 9	2	2
Manning	9 0	4 0	8 4	3 4	7 6	2 9	1	2
Cape Hawke ...	6 0	9 0	3 8	8 0	2 0	5 6	...	3
Lake Macquarie	5 0	7 0	3 11	6 6	3 3	6 0	4	1
Crookhaven ...	13 6	8 6	13 6	8 6	13 6	8 0	...	2
Bateman's Bay	9 3	...	6 6	...	5 6	...	...	...
Moruya	9 0	7 6	8 4	6 7	8 0	4 9	...	1
Wagonga	7 0	7 0	5 5	7 0	3 9	7 0	1	...

* North Channel.

GENERAL MAINTENANCE.

The expenditure on the maintenance of the various harbour and river work (excluding dredging) amounted to £21,471 12s. 11d. Difficulty was experienced in securing materials and labour as a result of war conditions.

TWEED RIVER.

No construction work was carried out. Operations of the Dredge *Harwood* involved 23,301 tons of material at a cost of £2,433 3s. 4d.

BYRON BAY JETTY.

General maintenance of the jetty and facilities was continued. Repairs to the jetty consisted of the renewal of defective piles, girders, wales and fenders, and the moorings were overhauled. Materials for the re-wiring of the electrical installation were coming to hand, and some re-wiring of cranes was carried out. Total expenditure, £2,443 18s. 11d.

RICHMOND RIVER.

The Bar Dredge *Jupiter* removed 165,758 tons at the entrance. Maintenance of up-river channels was carried out by the stationary Dredge *Coraki*, 14,542 tons of material being removed. Expenditure, £9,451 6s. 3d.

CLARENCE RIVER.

The Bar Dredges *Hermes* and *Jupiter* dredged 123,850 tons at the entrance. Maintenance of up-river channels was carried out by the stationary Dredge *Maclean*, 70,710 tons of material being pumped ashore. Expenditure, £9,972 13s. 8d.

WOOLGOOLGA.

Work was carried out on the moorings at a cost of £297 15s. 3d.

COFF'S HARBOUR.

Eastern Breakwater.

Construction work on the breakwater, comprising concreting of core wall and the placement of 40-ton and 10-ton concrete blocks was completed, bringing the completed length of the breakwater to 1,530 feet. Expenditure, £3,655 13s. 3d.

Jetty.

The jetty was strengthened and maintenance repairs to the jetty, rail tracks and cranes carried out. The renewal of defective piles, girders and other timbers and the substitution of capwales and corbels for defective headstocks, have considerably improved the stability of the structure, consistent with requirements for future use of the jetty. Expenditure £1,978 0s. 0d.

Designs and preliminary construction arrangements for an extension of 300 feet to the jetty in conjunction with an extension to the timber storage depot are well advanced preparatory to making an early commencement.

NEWCASTLE HARBOUR.

Submarine Rock Removal.

No work was carried out during the year.

Dredging.

A total of 2,198,010 tons of material was dredged from within the harbour, the dredges engaged upon the work and the amounts removed being the ladder Dredges *Hunter* (869,950 tons), *Juno* (557,350 tons) and *Pluto* (428,900 tons), the Bar Dredges *Neptune* (214,700 tons) and *Antleon* (5,500 tons), and the Grab Dredges *Minmi* (31,960 tons) and *Wallsend* (89,650 tons). Expenditure, £118,685 5s. 0d.

Wharf Maintenance.

Owing to urgent demands on plant and personnel for other work, only repairs of an urgent nature were carried out to wharves, the total expenditure for the year on the maintenance of wharves and plant being £6,872 5s. 7d.

District Depot.

Considerable progress was made with the establishment of the new district depot at Carrington, necessitated by the taking over of the previous depot at Dyke End by the State Engineering and Shipbuilding Undertaking, and a start was being made on the transfer of stores, plant and other facilities from the Dyke End. The work carried out consisted of the dismantling at Walsh Island and transfer to and erection at Carrington of a steel-framed building, fitted with an overhead travelling crane. The provision of services and the construction of road access and wharfage were commenced and a 3-ton steam travelling crane was installed. Expenditure, £8,075 14s. 6d.

Transfer of Floating Dock to Throsby Creek, Carrington.

The dredging of a new basin for the dock, the construction of timber anchorages ashore and the reclamation of adjacent Crown land by depositing ashore dredgings from the basin was completed. The dock was transferred from Walsh Island, moorings laid and shore booms placed with very little interruption to dockings. The dock was placed in commission at this site on 8/5/43. Total expenditure to 30/6/43 was £63,386 6s. 9d.

State Engineering and Shipbuilding Undertaking.

Assistance was rendered in the establishment of the Undertaking, by constructing earthworks, drainage, road works, building foundations, water and other services, machine foundations, foundations and groundwork for building berths, fitting-out wharf (75 per cent. complete), and foundations for fitting-out crane. Expenditure, £96,078 3s. 3d.

Waratah Quarry.

The Department's quarry at Waratah was re-opened for supplying sandstone ballast to the various construction works at the Dyke End and Carrington.

Southern Breakwater.

Railway sidings, which had been established at the base of the Breakwater for construction purposes, were transferred to the Department of Railways at a valuation of £400.

The breakwater was damaged slightly by storms and repairs of a minor nature were carried out at a cost of £653 17s. 9d.

Harbour Improvements.

Designs were completed for two new tie-up berths, Wickham, each 500 feet long, and tenders were invited for the supply of the materials required in each case.

Preliminary designs were put in hand for widening of the Cattle and Timber wharf, and additional cargo shed accommodation at a number of wharves.

SYDNEY HARBOUR.

Dobroyd Dredging.

Dredging continued under contract until January, when the work was closed down following the removal of the dredge to a defence project. Expenditure, £2,536 7s. 8d.

Charity Creek.

Repairs to the wall were effected and a tidal flap on one of the stormwater channels renewed. Expenditure, £539 12s. 1d.

Lane Cove Weir.

Approximately 1,064 cubic yards of heavy sandstone ballast were placed on the downstream side of the weir to form a mattress and reduce scour, and 200 cubic yards of clay and gravel mixture were placed on the upstream side to reduce leakage through the weir. Expenditure, £1,047 0s. 4d.

BOTANY BAY.

Cook's River Improvements.

A large "Bucyrus" steam dragline excavator was transferred from Newcastle for work in connection with the improvements scheme, downstream from River Street, Canterbury. Extensive repairs and reconditioning of the machine were carried out and were nearing completion at the end of the year. Expenditure, £4,536 11s. 10d.

Cook's River Breakwater.

Repairs to the tiphead were carried out with concrete blocks and concrete cast *in situ*, also as required over the whole length of the breakwater. Expenditure, £829 13s. 4d.

Cook's River Training Walls and Flood Gates.

A commencement was made on repairs to 500 lineal feet of the training wall on the left bank of the river adjacent to Shea's Creek Junction. Expenditure, £42 1s. 7c.

Carss Park Reclamation.

The dredge *Macksville* continued operations and during the year deposited 59,840 tons of material on the reclamation area. The concrete section of the southern sea wall was raised and repairs to the ballast base of the northern sea wall were effected. Expenditure, £12,139 14s. 9d.

Kurnell Jetty.

Four braces were renewed and the decking and eastern landing repaired. Expenditure, £117 4s. 6d.

Dredging of Cook's River and Tributaries.

The dredges *Como*, *Gosford* and *Cook's River* carried out further dredging operations in Cook's River, Shea's Creek and Tempe Basin throughout the year. The total quantity of material removed and placed ashore was 109,729 tons. Expenditure, £12,139 14s. 9d.

PORT HACKING.

Gunnamatta Bay Reclamation.

Minor repairs were carried out to the sea wall. Expenditure, £315 18s. 8d.

WOLLONGONG HARBOUR.

A number of minor works mostly of a maintenance nature were carried out in the harbour consisting of the renewal of a fender and capping on the stone wall at the cargo shed, repairs to hand-railing of pierhead, repairs to breakwater, the construction of a concrete safety wall, repairs to and partial renewal of iron hand-railing near the site of the old coal bins. Expenditure, £96 11s. 11d.

PORT KEMBLA.

Eastern Breakwater.

In the repairs to the breakwater which was considerably damaged in October, 1942 by a severe storm at the sea end, and at several places along the seaward slope, the Gillan's Hill quarry was re-opened.

During May, 1943, further damage to the breakwater was sustained as a result of another severe storm. Additional plant was put into commission and consideration was being given to the use of concrete blocks of about 40 ton weight on the seaward slope to increase the stability of the work.

Prior to these storms the breakwater had been completed to a length of 3,729 feet, but was reduced by them to water level from 3,270 feet to 3,370 feet and from 3,410 feet to the tiphead, as well as being damaged throughout its length.

Of the total quarry production of 14,295 tons of stone, 4,985 tons was placed in the breakwater. The balance was unsuitable for use in the breakwater and was utilised in the approaches to No. 4 Jetty, the construction of rail sidings between Nos. 3 and 4 Jetties, and the construction of a sea wall along the foreshore between A. I. & S. and No. 3 Jetties.

Total expenditure on the re-opening of the quarry, the repairs to breakwater and the construction of the sea wall was £4,955 1s. 4d.

The total output from the quarry since serviceable stone was first available to the end of the year was 1,189,252 tons, costing £293,768 1s. 11d. at a unit rate of 60.50d. per ton.

No. 1 Jetty (Coal Loading).

Repairs to piles, waling, girders decking and timber structures were effected and coal loading plant operated satisfactorily. Expenditure, £1,396 10s. 6d.

No. 3 Jetty (New).

The construction of the floodlight tower was completed, and the new lighting system put into operation. The delivery of the two 20-ton cranes had been still further delayed by war conditions. Shipping made frequent use of both sides of the jetty and utilised its own gear for handling cargo pending receipt of the cranes. Further tar surfacing was carried out on the road giving access to the jetty from the Wollongong-Port Kembla Road.

Total expenditure on jetty improvements, £10,376 3s. 1d., including progress payments of £5,257 14s. 1d. for 20-ton cranes.

The Electrolytic Refining and Smelting Co. of Aust. Pty. Ltd., constructed and placed in operation a new pumping station at the base of the jetty, including a 16-inch diameter rising main. Expenditure on repairs, £209, was incurred.

No. 3 Jetty (Old Jetty).

An amount of £476 13s 9d. was expended on the dismantling of the jetty which proceeded throughout the year as labour became available. At the end of June, only that portion of the jetty beyond low water mark remained. Timber valued at £210 2s. 6d. was salvaged. The Electrolytic Refining and Smelting Co. of Aust. Pty. Ltd., removed its pumping station and pipe line from the jetty.

No. 4 Jetty.

The jetty has been in constant use throughout the year. Piles, girders and decking were renewed and fenders. Several fenders were converted to the new design and are proving satisfactory. Expenditure, £2,022 5s. 5d., excluding progress payments on the new 5-ton crane.

Electrical Services to Jetties.

Considerable improvements were being made to the electrical services to the jetties. The floodlighting of No. 3 Jetty was completed and a brick substation, which had been erected on the approaches to that jetty during the previous year, was put into operation. Another brick substation was in course of erection at the base of No. 4 Jetty. Provision was being made for the rewiring and relocating of electrical circuits on Nos. 1 and 4 Jetties, the placing of transformers along the sides of Nos. 3 and 4 Jetties to enable the use of low voltage light clusters for night-loading operations, and for welding and power outlets on Nos. 1 and 3 and 4 Jetties. These improvements will bring the electrical installations into line with the S.A.A. code and increase the safety of working conditions.

Quarry Workshops.

Repair work to locomotives, cranes, etc., was maintained continuously, as well as considerable additional repair work to heavy plant engaged upon defence works.

A concrete floor was provided and guards placed on machines. A locker and wash room was erected for the convenience of loco men and erection of a similar building for the workshop employees is to be undertaken. Expenditure on improvements amounted to £1,608.

Facilities for Waterside Workers.

The mess, sanitary and first-aid facilities at Jetties Nos. 1 and 3 and 4 were completed and placed in commission. Expenditure, £578 5s. 8d.

Haulage and Shipment.

Operations for the year are summarised on the following trade and shipping return. A feature of the year's operations was the amount of week-end and holiday work necessary to prevent delays in the movement of shipping.

PORT KEMBLA TRADE AND SHIPPING RETURN, YEAR 1942-43.

Vessels entering Port Kembla.	Arrivals.	Net Registered Tonnage.
Overseas	145	405,254
Coastal	145	56,758
Interstate	186	315,979
	476	777,991

PRINCIPAL EXPORTS, YEAR 1942-43.

Item.	Tonnage.	Value.
		£
Cargo coal	83,049	83,049
Bunker coal	25,037	25,037
Coke	141,863	141,863
Copper	1,409	140,949
Silica bricks .....	.....	.....
Acids .....	.....	.....
Fertilizers	3,173	45,200
Manufactured metals	10,960	1,069,379
Finished products—iron and steel	304,042	2,509,142
Refined antimonial lead	1,516	50,755
Copper sulphate	740	29,595
Galvanised iron	18,981	451,204
Lead concentrates	19,245	153,930
Zinc concentrates	44,151	331,132
Benzol .....	.....	.....
Munition alloys	115	9,095
Bearing metals	41	10,788
Printing metals	11	619
Totals	654,333	5,051,737

PRINCIPAL IMPORTS, YEAR 1942-43.

Item.	Tonnage.	Value.
		£
Blister copper	4,435	751,640
Cathodes	11,233	1,123,292
Scrap copper	169	13,696
Copper residues	447	11,279
Slimes.....	262	129,713
Silica	3,066	4,172
Matte	1,911	114,975
Phosphate rock	21,175	105,440
Pyritic ore .....	.....	.....
Bags and packing material .....	.....	.....
Lead	3,460	80,600
Zinc ingots	715	14,593
Carbide	50	1,425
Refined copper .....	.....	.....
Cadmium	10	4,480
Benzine and power kerosene	25,526	359,825
Zinc sulphate	63	865
Antimonial slag	2,203	89,765
Iron ore, etc.	892,146	1,140,147
Stores	14	302
Soft lead	1,359	31,928
Copper ores and concentrates	544	19,110
Gold ore and concentrates	58	7,157
Gold residues	149	27,102
Zinc	2,196	52,080
Lead products	24	482
Coal	15,782	26,945
Totals	986,997	4,111,013

FINANCIAL.

	£	s.	d.
Revenue for period 1st April, 1942 to 31st March, 1943	54,312	16	2
Expenditure for period 1st April, 1942 to 31st March, 1943	60,379	15	3

SOUTH COAST.

ULLADULLA.

The jetty and appliances were maintained generally, and necessary repairs and renewals effected. The works carried out consisting of repairs to rail track, recovering and replacing stone coping and parapet, where carried away by heavy seas, reconditioning fencing, repairs to the cargo shed and foundations, renewal of timber flooring of three rail trucks and painting of the 3-ton crane. Expenditure, £269 4s. 10d.

BATEMAN'S BAY.

The Bar Dredges "Antleon" and "Latona" removed 58,850 tons of sand from the entrance to the Clyde River at a cost of £5,566 10s. 6d.

MORUYA RIVER.

The Bar Dredges "Antleon" and "Latona" removed 97,250 tons of sand from the channel and crossing at a cost of £11,512 9s. 9d.

BERMAGUI.

Work effected comprised the renewal of seven piles and 3,600 super feet of decking, repairs to fenders, the erection of a drinking trough for cattle, repairs and renewals at the cargo shed, overhaul of moorings. Expenditure, £485 4s. 6d.

TATHRA.

Repairs included the renewal of defective piles, kerbing shores, decking, bracing and waling, repairs to fenders, cargo shed and cattle race, also two new water tanks were provided. Expenditure, £815 5s. 3d.

MERIMBULA.

The work carried out comprised of maintenance of the jetty and facilities consisted of the renewal of defective decking and rail track, repairs to fenders, provision of new buffer plates and the overhaul of the moorings. Expenditure, £202 0s. 10d.

TWOFOOLD BAY.

The maintenance jetty and facilities at Eden was continued generally, the work consisting of the renewal of defective decking and piles, the replacement of some rail track, repairs to sea wall and overhaul of the moorings. Expenditure, £512 9s. 2d.

DOCKS: MAINTENANCE AND TRANSACTIONS.

NORTHERN RIVERS.

The docks on the Tweed, Richmond and Clarence Rivers were satisfactorily maintained throughout the year at a cost of £1,867 14s. 7d.

The transactions for the year were as follows:—

Item.	Ashby Dock, Clarence River.	Rileys Hill Dock, Rich- mond River.	Terranora Dock, Tweed River.
Number of government vessels docked	4	1	.....
Gross tonnage of government vessels docked	496	60	.....
Number of private vessels docked	1	1	.....
Gross tonnage of private vessels docked	120	55	.....
	£ s. d.	£ s. d.	£ s. d.
Revenue earned (dock dues etc.)	218 14 0	86 17 6	.....
Expenditure on docking private vessels†	43 13 6	52 14 9	.....
Cost of dock maintenance	511 9 8	*1,192 5 4	163 19 7

* Includes £532 13s. 7d. for boiler replacement.

† Amounts repaid to the Department by the owners of the vessels docked.

SWAMP DRAINAGE.

There were forty-nine Drainage Unions and ten Drainage Trusts at the end of the year, including one new union, Tyagarah Swamp Drainage Union, constituted during the period and two unions not functioning, Kiss Lagoon and Taloumbi Swamp.

By reason of repayment of capital indebtedness, three Drainage Trusts became unions during the year and are included in the number of unions given above. They are Mooball and Crabbes Creek, North Casino Swamp and Newrybar Swamp.

A proposal for the constitution of a new union to be named Breakfast Plains Drainage Union was receiving attention.

HYDROGRAPHIC SURVEYS.

Hydrographic surveys of berths and channels in Newcastle Harbour were carried out continuously throughout the year.

Hydrographic surveys were also made at Port Stephens (partial) and Port Macquarie.

AERODROMES IN WESTERN DIVISION.

Routine maintenance was carried out at Tibooburra and Ivanhoe landing grounds. Expenditure, £60 9s. 3d.

SERVICES FOR OTHER DEPARTMENTS.

Maritime Services Board.

General maintenance of wharf and jetty appurtenances at ports other than Sydney.

Department of Main Roads.

Survey, investigations and supervision of roads, bridges and ferries in the Western Division.

Department of Lands.

Investigations and inspections concerning leases, special purchases and permissive occupancies affecting the interests of the Department.

Water Conservation and Irrigation Commission.

Inspections and investigations in connection with Water Right applications.

River Murray Commission.

Operation and maintenance of locks and weirs.

N.E.S. Department.

The construction of trench, pillbox and Anderson type air raid shelters for State schools and floating population was continued in the Newcastle, Metropolitan and Port Kembla areas.

Other States.

The Bar Dredge "Hermes" was engaged upon urgent dredging of channels in another State for a period of six and a half months. Expenditure, £10,755 3s. 11d.

COASTAL CAMPING RESERVES.

The programme of improvements to coastal camping reserves was completed. Expenditure, £194 10s. 11d.

APPENDIX IV.

WATER SUPPLY AND SEWERAGE.

By far the greater part of the water supply, sewerage and stormwater drainage work carried out by the Department has been on behalf of the Commonwealth Government in connection with defence establishments of various kinds. The programme has been most extensive, with many of the projects of considerable magnitude. Valuable information was also supplied to the Australian Military Forces and the Royal Australian Air Force for use in intelligence work and in case of emergency. On several occasions the Department assisted the Allied Forces in various ways.

Construction of civil works has been restricted because of difficulty in obtaining supplies of material and equipment, which had largely to be diverted to defence needs and priorities. Overriding supervision of works constructed by Councils has been continued, whilst much work is now being executed direct for Councils in the way of investigation, design and construction.

Other activities included the design and construction of domestic services for public hospitals and institutions, research into modern methods of water purification and sewage disposal, and report to various technical committees.

Excluding the metropolitan areas of Sydney and Newcastle, there are now 167 towns and villages with reticulated water supplies and fifty-eight towns with sewerage systems, an increase of three water supplies and two sewerages over the previous year.

Water Supplies Administered by the Department.

The Department continues to control and administer the headworks and trunk distribution systems of the water supplies of Junee and South West Tablelands.

COUNTRY TOWNS WATER SUPPLIES.

WORKS COMPLETED BY THE DEPARTMENT.

Jerilderie.—Timber weir with upstream clay apron and downstream rock filled timber cribs across Billabong Creek to form storage for the water supply and renewal of the existing structure.

Cobar.—Renewal of existing rising main with 8-in. fibrolite pipes.

Louth.—Small rubble dam to raise river level for pumping plant.

Narromine.—Weir of driven timber piles and sheathing with upstream clay apron and downstream rock filled timber cribs across Macquarie River to form storage reservoir.

Portland.—Augmentation by a bore in Back Creek.

WORKS COMPLETED BY COUNCILS WITH OVERRIDING DEPARTMENTAL SUPERVISION.

Armidale.—Filtration plant; additional trunk main from Puddledock; reticulation and service reservoir.

Gloucester.—Augmentation by pumping from Barrington River—new rising main and pumping station.

Inverell.—Augmentation by concrete dam forming storage reservoir in Macintyre River with pumping machinery, filtration plant, rising main and extensions to the reticulation.

Leeton.—New filtration plant.

Nyngan.—Augmentation by channel from Macquarie River, via Gunningbar Creek to existing storage in Bogan River; filtration plant; additional service reservoir, pumping station and rising main.

Pambula District Hospital.—New scheme completed and placed in operation.

WORKS UNDER CONSTRUCTION BY DEPARTMENT.

Baradine.—New supply.

Binnaway.—New supply.

Broken Hill.—Filtration plant at Mica Street and duplication of pumping machinery at Stephen's Creek.

Dubbo.—Concrete weir.

Forbes.—Filtration plant.

Gunnedah.—New pump well.

Menindee.—Two timber weirs.

Peak Hill.—Augmentation including filtration plant.

Wilcannia.—Timber weir.

Institutions.

District Hospitals.—Water treatment plants at Bingara District Hospital and Tamworth Base Hospital, and a water supply at Hastings District Hospital, Port Macquarie.

WORKS UNDER CONSTRUCTION BY COUNCILS.

Adelong.—Supply from Adelong Creek.

Armidale.—Augmentation from Gara River.

Finley.—Filtered supply from Berriquin.

Molong.—Raising height of Borenore Dam.

Northern Riverina.—District scheme.

Southern Riverina.—District scheme.

Uralla.—Filtered supply from Kentucky Creek.

INVESTIGATIONS.

District Schemes.—Further investigation continued into schemes for Central Tablelands, Fish River, Macksville-Bowralville, Shoalhaven District and Snowy River.

New Schemes.—Proposals for Baradine, Binnaway, Calarie, Gulargambone, Maclean, Merrygoen and Kandos-Rylstone.

Augmentations.—Proposals for augmentations and improvements to existing supplies investigated at Armidale, Bundanoon, Coonabarabran, Goulburn, Grenfell, Mittagong, Molong, Orange, Parkes, Scone, Singleton, Taree and Werris Creek.

Committees, etc.—List of water supply works compiled for the Post War Reconstruction Department. Reports furnished on catchment areas, rainfall data, erosion, silting and applications for leasehold and alienation.

SEWERAGE—DEPARTMENTAL WORKS COMPLETED.

Dubbo.—Additional imhoff tank unit and filter bed added to treatment works at Dubbo.

Pambula District Hospital.—Complete sewerage scheme placed in operation.

UNDER CONSTRUCTION.

Broken Hill.—Scheme in partial operation, but construction suspended for duration of war.

Gunnedah.—New scheme complete except for pumping machinery.

Kempsey.—New scheme. Construction suspended owing to war conditions.

Kyogle.—New scheme under construction.

Narrabri.—New scheme complete except for pumping machinery.

Gulgong District Hospital.—New scheme under construction.

Mittagong Farm Homes.—New scheme under construction.

Investigations.—Further report furnished on proposal for a joint scheme at Coolangatta, Queensland, and Tweed Heads. Investigation made into effluent disposal at Mittagong and improved pumping at Windsor.

WATER SUPPLY & SEWERAGE: PURIFICATION TREATMENT.

WATER SUPPLY.

Investigation made into filtration plant for Uralla. New filtration plants inspected and placed in operation at Muswellbrook and Peak Hill. Inspections made of plants in operation at several country towns.

Institutions.—Investigations made into provision of water supply at Milton-Ulladulla Hospital and an augmentation at Gunnedah District Hospital. Proposed treatment of water supplies investigated at Armidale Teachers' College, Berry Training Farm, Goulburn District Hospital, Gosford Farm Home, Grenfell District Hospital, Kyogle District Hospital and Moree District Hospital.

SEWERAGE.

Existing works inspected and operation tested of sewerage works in forty-seven country towns.

Institutions.—Reports submitted on proposed sewerage installations at Bankstown District Hospital and Mittagong Farm Homes. Investigations made into schemes for Gosford Farm Homes, Milton-Ulladulla Hospital, Moruya District Hospital and Tweed District Hospital. Inspections made of completed systems at several Hospitals Schools and other Institutions.

STORMWATER DRAINAGE.

Most of the work was confined to maintenance and repairs.

Cook's River.—Summer flow section of main channel between Beamish Street and George's River Road cleared of silt to prevent accumulation of stagnant water.

Cup and Saucer Creek.—Extension of drainage work in Canterbury Municipality by a section of open channel between Fore Street and Cook's River Main Channel.

Duck Creek.—Extension of drainage in Granville. Three-cell culvert at Berry Street completed and coffer dam and flood gates near mouth of creek were removed.

Mascot West.—About 900 feet of channel walls built up with filling and clay backing to prevent overtopping by high tides.

Punchbowl Road.—Repairs to channel walls in Perry Park.

Sefton Park.—Restoration work in Woods Road.

Toongabbie Creek.—Extension to previous work by length of 180 feet of concrete open channel.

Wolli Creek.—Concrete channel near Bexley Road, Canterbury, cleared of silt.

FISH RIVER WATER SUPPLY.

Consideration has been given to a proposal of a district scheme for providing adequate domestic and industrial water to several towns, including Glen Davis, Portland, Wallerawang, Lithgow, Lidsdale and Oberon, with possible extension to other centres. The source of supply will be a storage reservoir on Fish River near Oberon, from where the water will be distributed through a system of trunk mains and reticulations.

Investigation and design have reached the stage where construction may be commenced as soon as finance has been arranged between the various interested bodies. The estimated cost of the scheme is £800,000.

RIVER MURRAY WATERS ACT.

The following works previously constructed by this Department have been maintained, operated and controlled during the year, in terms of the River Murray Waters legislation, under which these responsibilities are vested in the Minister for Public Works as Constructing Authority:—

Murray River.—Hume Reservoir (N.S.W. Section). Lock 10, Wentworth. Lock 15, Euston.

Murrumbidgee River.—Weir No. 5, Redbank. Weir No. 7, Maude.

APPENDIX V.

ARCHITECTURAL AND PUBLIC BUILDINGS.

Quite apart from normal activities the Department has given the Defence Authorities the benefit of its knowledge and experience in architectural and building works. Owing to the scarcity of available builders willing to accept contracts of any magnitude, it was found necessary to depart from ordinary contract procedure by arranging with certain builders to carry out a number of works on the "cost, plus fixed fee" basis, in addition to others by day labour.

Works carried on during the year under review, at the anticipated completed costs noted, are as under:—

SUBSIDISED HOSPITALS.

	£
<i>Parramatta District Hospital.</i>	
New Building and Alterations to existing buildings	80,000
<i>Narrabri District Hospital.</i>	
New building	60,000
<i>Bathurst District Hospital.</i>	
Alterations and additions	51,750
<i>St. Catherine's and Sacred Heart Hospital, Cootamundra.</i>	
New buildings	50,000
<i>Lithgow District Hospital.</i>	
Alterations and additions	42,500
<i>Balmain District Hospital.</i>	
New Ward and alterations to existing building	42,000
<i>Canterbury District Hospital.</i>	
Alterations and additions	35,000
<i>Wollongong District Hospital.</i>	
Alterations and additions	35,000
<i>Ryde District Hospital.</i>	
Additions	30,000
<i>Royal North Shore Hospital.</i>	
New Operating Block and remodelling Kitchen Block	24,000

CONTRACTS LET.

Blue Mountains District Anzac Memorial Hospital.

Erection and completion of new quarters for nurses, conversion of present nurses' quarters into maternity blocks, erection and completion of new laundry and boiler room, new children's solarium and alterations and additions to existing operating block and laundry.

	£
Building contract	29,659
Engineering services	10,057
Total	£39,716

Marrickville District Hospital.

Extensions and additions, providing for a new two-storey block housing kitchen and dining rooms and operating theatres and alterations to existing buildings.

	£
Building contract	14,171
Engineering services	3,184
Total	£17,355

Wyalong District Hospital.

New quarters for nurses £12,278 |

Cessnock District Hospital.

Remodelling and extensions to main building.

	£
Building contract	6,374
Engineering services	2,754
X-Ray apparatus	2,541
Total	£11,669

Dubbo District Hospital.

	£
Alterations and additions to boiler house, etc.	1,941
Steam raising equipment	6,012
Cooking unit	896
Total	£8,849

Goulburn District Hospital.

	£
New children's ward.	
Building contract	5,577
Engineering services	1,253
Total	£6,830

<i>Tamworth Base Hospital.</i>	£
Water softening plant	764
Laundry machinery	1,228
Steam raising plant	3,888
Total	£5,880

SKETCH PROPOSALS.

<i>Balmain District Hospital.</i>	£
Developmental schemes	42,107
<i>St. George District Hospital.</i>	
Outpatients' block	40,000
<i>Royal North Shore Hospital.</i>	
Extensions to nurses' quarters to provide for an additional 50 beds	22,700
<i>Nepean District Hospital.</i>	
Additions	8,650

EDUCATION DEPARTMENT.

The following building works commenced in the previous financial year have been carried on:—

Technical Colleges.

	£
<i>Wollongong—</i>	
New workshops—Estimated completed cost	50,000
<i>Granville—</i>	
New workshops—Estimated completed cost	20,000
Diploma block—Estimated completed cost	30,000
<i>Sydney (St. George Branch)—</i>	
Engineering workshop—Estimated completed cost	32,000
<i>Wagga Wagga—</i>	
Workshop block—Estimated completed cost	12,000
<i>High School.</i>	
<i>East Maitland Boys—</i>	
New building and alterations to existing building—Approximate completed cost	41,770

CHILD WELFARE DEPARTMENT.

<i>Gosford Farm Home for Boys—</i>	
New sub-institution—Estimated completed cost	24,000
Working Drawings were prepared for:—	
<i>Hay High School—</i>	
New manual training room and home science unit—Estimated cost	8,782

SKETCH PLANS.

Sketch plans for the following works have been prepared:—

Wollongong Technical College:

Developmental scheme; estimated cost, £500,000.

Lithgow Technical College:

Developmental scheme; estimated cost, £250,000.

Wagga Wagga Technical College:

Developmental scheme; estimated cost, £200,000.

Maitland Girls' High School:

Developmental scheme; estimated cost, £75,443.

Ashfield Junior Technical School:

Proposed manual training and science block, £26,500.

Parramatta High School:

Additional class rooms and assembly hall, £21,560.

Bingara Public School:

New building—Amended scheme, £20,100.

Parramatta Domestic Science School:

Assembly hall, £18,000.

Cessnock Technical College:

New buildings, £15,000.

St. George Girls' High School:

Assembly hall, £13,250.

MISCELLANEOUS WORKS.

Housing Schemes.—In co-operation with the Commonwealth Government, further work has been carried out at Lithgow; twenty more cottages have been erected, also two dormitories for females, and a recreation room at the Hostel.

Defence Works.—Building works under Defence Works programme have been completed.

Engineering and Shipbuilding Undertaking, Newcastle.—The architectural works commenced last year have been brought to a point nearing completion. The buildings provide for general administrative offices and for the accommodation of the workmen. Anticipated final cost, £25,000.

Sketch Plans.—State motor garage—proposed extensions to repair shops, etc. Estimated cost, £9,000.

National Emergency Services.—Various works designed to provide protection in public buildings and hospitals and to provide First-Aid Posts in school buildings were completed and brought up to the requirements of the "British Air Raid Shelter Code." Schemes for the protection of the "floating population" were also implemented and revised.

APPENDIX VI.

DEFENCE WORKS CO-ORDINATION AND LOCAL
GOVERNMENT ENGINEERING.

An important aspect of this Branch's activities during the year under review was the co-ordination of the construction of all engineering services carried out by State Departments or instrumentalities and Shire and Municipal councils as part of the unprecedented defence works programme.

In this connection the Branch functioned as a section of the State War Effort Co-ordination Committee which had been set up by the Premier for the purpose of allocating works required by the Commonwealth to be constructed by State Authorities. The Branch's activities in this regard included the selection of the Constructing Authority, the issuing of the original and progressive instructions, the making of applications to the Federal Authorities for additional funds, inspections where necessary during construction, assisting in the provision of plant and labour, and arranging in some cases for the supply and release of materials or plant not obtainable in the open market.

Co-ordination was also a prominent feature of an extensive work in the Riverina, which was constructed to provide a depot capable of assembling and repairing large numbers of aeroplanes which might be damaged in the South Pacific war theatre. This was undertaken as a matter of utmost urgency and all of the major State Constructing Authorities co-operated in the construction, which was completed in record time. The branch maintained an officer continuously on the site to ensure co-ordination of activities between the authorities engaged on the construction of the engineering services and the Commonwealth Authorities and their contractors in the erection of buildings, etc.

With regard to the lesser works carried out by the various State Authorities, including Councils, instructions were issued and contact was made by the augmented engineering staff during construction, either by inspection or correspondence, as the circumstances demanded. The branch furnished on behalf of the Committee periodical returns showing the progress achieved in respect of these works.

It should be noted that in addition to co-ordination activities of the branch, the Department was selected as the Constructing Authority for the whole of some major works and portion of others. These works will doubtless be covered by reports of the branches directly concerned. Details of the projects carried out some of which were of great magnitude occupying extensive areas and involving the expenditure of millions of pounds are as follows:—

DEFENCE WORKS.

Munition Factories, Etc.

Construction of three munition factories, two in the Metropolitan and one in the Newcastle area, was continued and completed except for a few minor items. A very large munition factory in the Riverina was commenced early in December, 1942, and as it was allotted high priority, every effort was made to complete the engineering services. This was achieved with the exception of certain construction which could not be completed owing to the shortage of large size drain pipes. The Branch's activities embraced surveys, construction of tramways, concrete structures, earthworks (including mounds), cleanways and drainage in water supply and sewerage services; the expenditure on these four works during the year was £1,743,127.

Aerodromes, Air Force Depots, Etc.

A large R.A.A.F. Aerodrome Construction programme was undertaken comprising twenty-five projects, the majority of which were completed. The total estimated expenditure on these works was £2,750,000, of which the Department's expenditure was £1,844,029.

The aerodrome construction generally comprised felling and removal of timber on runways and flight strips, levelling of the runway strips, quarrying, transporting, spreading and final consolidation of gravel preparatory to surfacing, the construction of taxiways, hideouts and in some cases, the provision of splinter-proof pens and surfacing and extensive drainage schemes.

In addition, as part of the Inland Ferry Route to the Aircraft Depot, two aerodromes were constructed in the far west in close collaboration with the United States Army; one at Bourke was constructed by the Department and the other by the Cudgegong Shire Council. Soil cement pavements, an innovation in Australia, were chosen for these locations as being the most suitable, having in mind local conditions. The Department's expenditure at Bourke during the year amounted to £155,520.

Excavation for and concrete construction at large aircraft fuel storage tanks was undertaken by the Department in a few localities under arrangements with the major petrol companies which had contracts with the Commonwealth authorities for the erection of the storage tanks. Expenditure under this heading was £40,349.

Gun Emplacements.

One of the major works undertaken by the Branch with the assistance of the Main Roads Department was the construction of permanent fortifications in the Illawarra District. The amount expended was £164,050.

The Department's activities at this location embraced the quarrying of 23,000 cubic yards of rock excavation and 18,000 cubic yards of concrete emplacements below ground with elaborate bomb-proof protection.

Miscellaneous Defence Works.

In connection with the erection of large stores to house war materials, the Department's organisation was requisitioned to provide engineering services. Some of these establishments covered very extensive areas and the earthworks, provision of road access, drainage, concreting of floors, etc., constituted a major work. In addition, various services in connection with military camps were undertaken.

A characteristic feature of the branch's activities was the assistance rendered to Federal Authorities in the carrying out of miscellaneous works required from time to time. Frequently in connection with some of the larger projects already mentioned, various minor services were performed by the Department which were not covered by the orders issued to other authorities. In some cases, also, the Department undertook earthworks for other authorities to assist them in the completion of their section of the work. This applied particularly in regard to railway extensions and sidings, where the Department carried out the earthworks, leaving the track work to the experienced employees of the Department of Railways. In addition, per medium of the various District Officers, smaller works were undertaken as and when required to meet the wishes of the Federal Authorities, often as at very short notice. The total departmental expenditure upon miscellaneous works was £340,481.

Mobile Workshop.

This workshop, established under the control of the Branch, was located at several of the larger aerodromes where it remained for periods of some months to undertake repairs to various plant units owned by the Department, other Departments, Allied Works Council, Councils or private contractors. The unit played an important part in the speedy construction of these works in enabling the plant to be operated to a maximum by avoiding delays which would have occurred had it been necessary to transport the units to the Metropolitan area for repairs.

Civil Constructional Corps Camps.

With the establishment of the Civil Constructional Corps, and the determination of camping conditions and accommodation, the Branch developed a standard of camp construction which was accepted by the Allied Works Council. Forty-eight camps were erected to house employees of this Department, other Departments, and private contractors to the Allied Works Council. A flying gang was organised to carry out the construction of these camps in the shortest possible time, a feature of the organisation being the selection of suitable men, having in mind the necessity for the mobility of the gang. It is estimated that the total expenditure on camp erection was £56,135.

Assistance rendered by Municipal and Shire Councils.

In the carrying out of these defence works, the branch received unflinching support and co-operation from the Local Government bodies, such assistance ranging from the loan of plant and staff to the actual construction of major works, in some cases situated at a considerable distance from the headquarters of the Shire. Engineers from various Councils were loaned to the Department for lengthy periods to assist in the co-ordination of defence works and/or supervision of their construction. Much of the success achieved is undoubtedly due to the untiring efforts of these officers and the assistance rendered by Councils generally cannot be over-emphasised.

LOCAL GOVERNMENT WORKS.

Owing to the urgency of defence requirements, the Local Government works carried out during the year were considerably below pre-war levels. The difficulty of obtaining materials and labour, coupled with the fact that the staffs of many Councils were wholly or partly engaged upon defence

works, prevented any extensive development of Local Government works. However, inspections were undertaken in a number of cases by Head Office staff and District Engineers in connection with some of the Grant-Loan Programmes which still remained incomplete. Following the flood rains towards the end of the year, inspections were made to permit of a comprehensive report being furnished to the Local Government Department.

SURVEYS.

During the year the survey staff of the Department was principally engaged on the setting out of engineering services on three major munition factories in the State, on the construction of twenty-seven (27) aerodromes and dispersal strips, and the establishment of sundry other works in connection with the prosecution of the war.

Investigations were carried out for the establishment of stores in the Blue Mountains and Metropolitan areas for use by the U.S.A. Services of Supply.

Surveys for the design and subsequent subdivision of areas for housing projects were carried out at Bathurst, Lithgow, Orange, Newcastle, Cowra, Rutherford and Glen Davis.

Water Supply surveys were carried out for the towns of Binnaway, Coonabarabran and Baradine, and sewerage investigations made in connection with Burnside Homes, Lady David-

son Home, Baulkham Hills Hospital and Mittagong Boys' Farm Home. Check surveys were made of work-as-executed information on forty (40) metropolitan stormwater channels prior to action being taken to vest these channels in the ultimate maintaining authority.

Surveys and investigations were made for the design of a hydro-electric plant at Wyangala Dam and for the construction of a proposed electricity transmission line from Wyangala Dam to Cowra.

Contour surveys were made for the design of technical college buildings at Lithgow and for the proposed erection of an Industrial School for Girls at Thornleigh.

Investigation surveys were made for the Department of Public Health of unhealthy building land at Mascot and Lane Cove.

Further resumption surveys were carried out for the acquisition of easements in connection with electricity transmission lines from Goulburn to Canberra, Cowra to Orange, Kiama to Nowra, Galong to Burrowa and Cowra to Canowindra. Resumption surveys were made for water supply weirs at Menindee, Dubbo and Narromine, and for sewage treatment works at Broken Hill, and minor surveys were carried out in connection with lands vested in the Minister.

APPENDIX VII.

ENGINEERING DESIGN.

Considerable engineering design work has been undertaken by the Department both in respect of the usual Departmental operations and works for other departments, including many of a defence character. The major design work performed by the Department is summarised hereunder:—

Design and Drawing and/or Investigation.

Water supply, sewerage and stormwater drainage for Air Force, Military and Munition establishments.

Engineering and Shipbuilding Undertaking, Newcastle.

Floating Dock, Fitting-out-Wharf, Launch Basin, Administrative Building, Electrical Substation and Low Voltage Rectification.

Extension of Jetty and provision of Loop Line at Coff's Harbour.

New cargo sheds at No. 2 Silo Wharf, Lee Wharf, the Inflammable Liquids Wharf, and extension to the Cattle Shipping Wharf, Newcastle.

Southern Electricity Supply.

Control of 132 kV Substation and Nos. 1 and 2 Power Stations, Burrinjuck; installation of 7,500 kVA hydro-electric unit at Wyangala; extension of Cowra Substation; installation of 7,500 kW steam turbo alternator at Port Kembla Power Station; extensions to Yanco Power Station.

Water supply in connection with a Mulwala project, Fish River water supply scheme, Tocumwal project, Snowy River water supply scheme.

Sewerage treatment works for Public Institutions and District Hospitals.

Lachlan Swamp stormwater drainage, Centennial Park, as a means for mitigation of local flooding.

Public Institutions and Buildings.

BRIDGES.

Examinations and reports:—

Cockburn; Cabramatta and Canley Vale; Canterbury; Copmanhurst; Kyogle; Macleay Municipal and Shire Councils, and National Park Trust; Ryde; Turon; Wallarobba; Yanco.

HARBOUR WORKS.

Drawings, Estimates and Specifications.

Floating Dock Anchorages, Newcastle; Gray Street Dolphins, Newcastle; Fitting-out-Wharf and Launch Basin, Newcastle.

Preliminary Designs and Estimates.

Cargo Shed and Road Works, No. 2 Silo Wharf, Newcastle.

Cattle Shipping Wharf Extensions, Newcastle.

New Cargo Sheds, Lee Wharf, Newcastle.

New Cargo Sheds, Inflammable Liquids Wharf, Newcastle.

Self-Propelling Dredge for National Park Trust.

Inspections.

Periodic inspections at Clyde Engineering Co. Ltd. of the 20 and 5-tons electric cranes for Port Kembla.

Departmental Works.

(a) Plans, specifications and estimates and/or reports for augmentations or new works in connection with the following major works:—

Armidale; Berry; Broken Hill; Baradine; Bathurst; Binnaway; Carroona; Coonabarabran; Deniliquin; Dubbo; Forbes; Gloucester; Gundagai District Hospital; Gunnedah; Hastings District Hospital; Junee; Merriwa District Hospital; Milton-Ulladulla District Hospital; Mittagong; Molong; Orange; Parkes; Peak Hill; Portland District Hospital; Fish River Scheme; Ryde Memorial District Hospital; South West Tablelands; Taree-Wingham; Wilcannia.

(b) Contract or Quotation Plans and Specifications are prepared for pumping machinery for Armidale, Broken Hill, Cowra Soil Conservation Station, Coonabarabran, Dubbo District Hospital, Forbes, Lithgow Housing Scheme, Milton-Ulladulla District Hospital, Mulwala Project, Taree-Wingham and Southern Electricity Supply.

Subsidised Works—Reviews.

Reports, estimates, plans and specifications submitted by Consulting Engineers for Councils or by the Councils themselves:—

Bombala; Bowral; Boorowa; Central Tablelands; Condobolin; Cooma; Finley; Gulargambone; Kempsey; Mullumbimby; Muswellbrook; Narrabri; Uralla; Wauchope; Walcha; Wellington.

SEWERAGE.

Departmental Works.

(a) Plans, specifications and estimates and/or reports:—

Bankstown District Hospital; Gulgong District Hospital; Inverell District Hospital; Mittagong Farm Homes; Ship Building Undertaking, Newcastle.

(b) Plans and/or specifications for pumping machinery:—

Gulgong District Hospital; Griffith High School; Muswellbrook Military Camp.

Subsidised Works—Reviews.

Reports, estimates, plans and specifications submitted by Consulting Engineers for Councils, or by the Councils themselves:—

Cooma; Dungog; Grafton; Gosford; Gunnedah; Goulburn; Grenfell; Kyogle; Blue Mountains Shire; Mittagong; Narrabri; Temora; Tumut; Windsor.

STORMWATER DRAINAGE.

DEPARTMENTAL WORKS.

(a) Plans and estimates for:—

Lachlan Swamp, Centennial Park, Mascot West, Junee, Clay Cliff Creek, Finlayson Creek, Powell's Creek, Cook's River, Haslem's Creek.

(b) Works-as-Executed plans for:—

Gardner's Road, Kensington Park, Greenacre Park, Maitland Avenue, William Street, Gunnamatta Bay Reclamation, Kurri Kurri, Hawkesbury College, Lime Kiln Bay, Mosman Bay, Tarban Creek, Nepean River Bank, Bunnerong Road, Boronia Park, Duck Creek, Ascot Racecourse.

Plans and estimate for bridges and culverts:—

Bardwell Park.

Gornall Avenue.

Southern Electricity Supply, Wyangala Power Station, access.

East Pagewood (Work-as-Executed).

Iron Cove (Work-as-Executed).

Brighton Avenue (Work-as-Executed).

SUBSIDISED WORKS.

(c) Plans, estimates and specifications submitted by Consulting Engineers for Councils or by Councils themselves:—

Botany, Canterbury, Grafton, Greater Newcastle, Lidcombe, Lithgow, Marrickville, Nepean, Queanbeyan.

ELECTRICAL.

DEPARTMENTAL WORKS.

Southern Electricity Supply.—Design drawings, specifications, etc., for Burrinjuck Substation Control of the 132 kV Substation, including remote control of No. 1 and No. 2 Power Stations from the Substation.

Control Station Goulburn.—Permanent relay panels and the 50-ton Transformer Lifting Gantry.

Wyangala Power Station.—A 7,500 kVA Hydro-Electric unit designed to function as a generator or as a synchronous

condenser, 32-ton Power House Crane, 6.6/66 kV Substation, Circuit Breakers, Air Break Switches, Lightning Arresters, Post Insulators and Cables.

Cowra Substation.—Extension of the Substation to provide interconnection with Wyangala Power Station.

Port Kembla Power Station.—7,500 kW Steam Turbo Alternator and Auxiliary Equipment, 85,000 lb. Steam Raising Plant and duplicate Coal Loading Equipment.

Yanco Power Station.—Switchboards and connection, schematic and cable route diagrams for four generating units, switchgear control and panels, extension to the Power Station buildings to form a control and switch room.

N.S.W. Government Engineering and Shipbuilding Undertaking.—11,000 volt substation, Main low voltage Switchboard and 50-cycle Distribution Switchboards and low voltage 50-cycle reticulation.

SPECIAL INVESTIGATION SECTION.

Structural Design and Investigation.

Administrative Building, Government Engineering and Shipbuilding Undertaking, Newcastle.

Narrabri District Hospital Additions.

Bathurst District Hospital Alterations.

Granville Technical College.

Lithgow Technical College.

Sydney University Hydro and Aero Dynamics Laboratory.

St. Margaret's Hospital.

Richmond Main Colliery Coal Bin.

Load Test, Parramatta District Hospital.

Model Investigation, Wyangala Dam, Southern Electricity Supply.

APPENDIX VIII.

SURVEY DRAFTING.

General survey drafting recording heliographing, photostat-copying, plan mounting and plan registration were carried out in connection with the following types of work:—

	1941-42.	1942-43.
Country towns sewerage	1	8
" " water supply	20	24
Stormwater channels	26	82
" " Vesting Act, 1941	25	31
Harbours and rivers	13	19
Roads	3	3
Electrical constructions	8	6
Port Kembla.....	9	6
Glen Davis	8	31
River Murray Waters Act	6	7
Swamp drainage	4	1
Naval and military defence works	41	57
National Emergency Services	9	2
Authorisation descriptions	13	8
Education—School sites	79	35
Local Government—		
Alteration to boundaries of constituted area	13	7
Urban and building areas	7	3
Residential districts.....	41	13
Completion of works	8	2
Proclamation of national works	2	...
Sketches.....	10	5
Search and Investigation—		
Certificates of identity	285	284
Technical descriptions accompanying certificates	78	80
Search sketches	137	65
General drafting—		
Resumptions, etc.	241	383
Descriptions (technical)	396	330
Descriptions—Proclamation of Catchment district	1	...
Detail sheets	19	8
Plans and sections	774	650
Names of streets	113	70
Printing and plan registration—		
Helios	66,458	87,993
Mounting	2,614	3,132
Photostats	11,432	9,420
Plan registrations.....	6,300	5,250
Field and Level Book registrations	1,100	820
Plans issued and returned	40,800	41,900

APPENDIX IX.

TESTING AND INSPECTION.

The estimated value of materials tested and inspected prior to despatch was £632,507, as follows:—

	£
Valves, hydrants, etc., 1,109 items	6,847
Cement—4,113,933 bags (paper)—171,414 tons	625,660
	<u>£632,507</u>

Valuation cannot be given to the material represented in the tests of iron and steel bars, etc.

Private firms and individuals in addition to Commonwealth and State Government Departments and Councils have utilized the facilities for testing provided by the Department.

Cement Testing.—Certificates numbering 1,119, covering the sampling, testing, analysis and issue of 4,113,933 paper bags of cement were despatched to the various manufacturers. Fees totalling £6,620 were charged for this service.

Newcastle Inspection.—The number of valves, etc., inspected and despatched was 1,109, the fees totalling £260. Gas meters were inspected on behalf of the Department of Local Government.

Physical Testing.—Reports numbering 730 covering tests of concrete cubes, sand and gravel, cast iron, steel and bronze bars, wire ropes, etc., were issued, fees totalling £982.

Chemical Tests and Analyses.—Thirty-eight reports covering tests and analyses of coal, water, sand, gravel, concrete, alloys, etc., were issued, fees charged amounting to £548.

APPENDIX X.

ENGINEERING AND SHIPBUILDING UNDERTAKING,
NEWCASTLE.

Considerable progress has been made both in regard to the development of the dockyard and the variety and volume of orders fulfilled. Details are briefly as under:—

FLOATING DOCK.

The Floating Dock was moved from Walsh Island to the new site at Carrington on 26th April, 1943.

Seventy vessels aggregating 389,070 tons were docked at Walsh Island site and twenty vessels aggregating 86,007 tons after the Dock was moved to Carrington. In addition, fifty vessels have been repaired at wharves in the Harbour.

REPAIR SLIPS AT WALSH ISLAND.

Eighteen vessels were slipped and repaired at Walsh Island.

DOCKYARD.

Administrative Offices Construction.—These offices are practically complete and have housed the complete staff since the beginning of June, 1943.

Workmen's Accommodation Building.—This building is complete except for canteen kitchen equipment.

Engineering Shops.—These shops are nearly complete except for extension of the boiler shop rendered necessary to meet the demands of the Allied shipbuilding programme, and the equipping of tool room and store in No. 2 Bay.

Joiners' and Pattern Shop.—This shop was completed except for a 50-ft. extension still to be constructed.

Shipyard Construction Shops.—These have been practically completed.

Fitting-out Wharf.—The Fitting-out Wharf, together with 40-ton Crane, is in an advanced stage of construction and will be available for fitting-out the naval vessel referred to below:—

ORDERS RECEIVED AND PROGRESS OF WORK.

A naval vessel ordered just prior to the close of the previous period, is in an advanced state of construction, and arrangements are in hand to officially launch this vessel in July next.

Additional orders have been received from the Department of the Navy for two frigates, including construction by the Dockyard of the main propelling machinery.

The Australian Shipbuilding Board, placed an order with the Dockyard for twenty (20) 125-ft. long twin-screw ocean-going vessels for use by the Allied Forces. In order to accelerate production, portions of these vessels will be constructed by other engineering firms in the Newcastle District.

Two of the vessels have been launched and are in process of being fitted out. The remainder will be launched at short intervals.

TURNOVER.

The turnover in regard to the various sections of the Dockyard's activities during the period from 1st March, 1942 to 31st March, 1943, totalled £347,700 made up as follows:—

	£
Repairs in conjunction with the Floating Dock	117,898
Harbours and Rivers—Dredge Service	78,243
Australian Shipbuilding Board, including orders for Allied Services	65,277
Department of the Navy	36,578
General	49,704
	<u>£347,700</u>