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Electrical Civil Mechanical

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WITH A SYNOPSIS OF THE PRINCIPAL ARTICLES

Editorial

IRON AND STEEL

The outstanding fact in connection with the amended tariff schedule giving increased protection to the industry, particularly against European competitors, is the undertaking of the local manufacturers that there will be no alteration in prices to the consumer. In the past there has been a systematic attempt on the part of industrial unions to exploit, for purposes of higher wages and better working conditions, additional protection granted to industries by way of higher customs duties. In the case of the textile industry, the employees appeared before the tariff board to support the case of the employers for increased protection against oversea manufacturers, and as soon as the increase was approved lodged a claim in the arbitration court for higher wages. The tariff board in their last report drew attention to the serious position into which the Commonwealth is drifting, and pointed out the absolute necessity for preventing the wages gap between the United Kingdom, Europe and the Commonwealth becoming still wider. It is apparent that the members of the board realise that the upward tendency of production costs in Australia cannot continue for ever; and in the case of the iron and steel industry they have endeavored to call a halt. Parliament, in granting this further protection, has shown its desire to assist the industry to obtain a larger output at a lower unit cost. It remains to be seen how the unions will take this determination, and, if they lodge claims with the arbitration court for further increases, what attitude the court will take up. The experience of the last few years has demonstrated clearly that the process of higher customs duties followed by higher wages and shorter hours is a vicious circle which has done little towards the establishment of industry on sound economic lines.

COBHAM'S FLIGHT

Although Cobham in his flight to Australia did not put up any wonderful record in the matter of time he has demonstrated, as the Smith brothers and Parer had done previously, that flying to Australia from Great Britain is quite feasible and will in the course of a very few years become a recognised means of transit across the globe. When he reaches England after the return journey he will have completed three notable Empire flights. Three years ago he piloted Sir W. S. Brancker to India and back, while last year he flew from England to Cape Town and back. His present flight will on completion be a world's record both in regard to the distance of 32,000 miles, and the fact that the same engine will have been used throughout. It is noteworthy that the engine used on Cobham's seaplane is the same one that he used on his flight to South Africa last year. A short description of the Siddeley-Jaguar engine was published in the last issue of this journal. He left England on June 30, and on the first day flew nearly 1,200 miles to Naples. At Athens there was a delay of several days owing to illness. Then on July 5 between Baghdad and Basra, the real catastrophe of the trip occured. Elliott, the mechanic, was shot by an Arab sniper and died at Basra. This tragic event caused a loss of nine days. A further five days were lost near Rangoon owing to a gale necessitating a landing. The last stage of the journey was a 500-mile flight over the open sea from Timor to Darwin which was reached on August 5. Melbourne, the terminus of the flight, was reached on Sunday, August 22. The actual flying time was 156 hours. When commercial services are inaugurated, which Mr. Cobham states will be within five years, it is anticipated the journey will be completed in 10-12 days. In January next a start is to be made with regular flights to India, so that an extension to Australia is only a matter of time.

Commercial aviation has already made considerable progress in Australia, regular services being conducted in Western Australia (said to be the longest in the world), Queensland and from Adelaide to Sydney with a connection to Melbourne. The visit of Mr. Cobham has undoubtedly given a stimulus to aviation; he has expressed a favorable opinion as to the suitability of the Australian climate and physiography to flying and has expressed the opinion that every town should have its aerodrome.

With its immense distances and sparse population, Australia certainly offers plenty of scope for the development of air mail and passenger services. It may be years yet before the north-south transcontinental railway is built, and with the appointment of the North Australia Commission to handle the development of that part of our Commonwealth, some more speedy means of transport than now exists is a necessity. Why not an aerial service? It would do much to open up the "dead heart of Australia."

THE PETROL TAX ON MOTOR VEHICLES

The Automobile Association of Great Britain is advocating the adoption of the petrol tax which was introduced in 1909 and repealed in favor of the horse power tax in 1921-22. After six years' continuous opposition to the horse power tax the association is hopeful that the petrol tax will be re-introduced, the chancellor of the exchequer in his budget speech having declared himself in favor of it. Under the present act the owner of an 11.9 h.p. car pays £12 per annum whether the car is driven 2,000 or 20,000 miles in a year, and it is claimed that motorists should pay according to the extent to which they use the roads. In the United States to-day 45 of the states have a petrol tax.

The position in Australia now is that there is a double tax in New South Wales, Victoria and Queensland. There is a tax based on weight and power of a vehicle, averaging probably £6/10/- per annum, and on top of this a 2d. per gallon tax has been added to all petrol imported. The states collect the former and the Commonwealth gets the petrol tax. It was the intention of the Commonwealth to allocate the petrol tax for the construction of developmental roads on the basis of £1 for every 15/- spent by the states, but the larger states have refused to accept the allocation. The next move is awaited with interest.

Personal

Mr. G. D. Balsille, city engineer of Launceston, visited Melbourne and Sydney last month.

Mr. H. Ord has been appointed engineer and secretary to the Glenlyon, Vic., shire council.

Mr. R. S. Tucker, of Devonport, Tas., has been appointed engineer to the Morwell, Vic., shire council.

Mr. Kenneth Beaton, engineer to the Canoblas, N.S.W., shire, died suddenly at Orange last month. He was 63 years of age.

Mr. L. R. H. Irvine, shire engineer, Bellingen, N.S.W., has been appointed assistant engineer to the N.S.W. main roads board.

Mr. L. B. Hutton has been appointed engineer to the Southland power board, Invercargill, N.Z. Mr. Hutton was assistant engineer.

Mr. G. B. Vickers has been appointed divisional engineer for the British Imperial Oil Co. in Queensland. He will be located at Brisbane.

Mr. Norman Wilson, chief engineer of the Australian Cement Co., Fyansford, Vic., has been appointed engineer of the Broken Hill South mine.

Mr. F. de la Mott has been appointed surveyor-general in the Victorian lands department in succession to Mr. G. L. Pinniger, retired.

Mr. W. I. Muntz, engineer to the Byron shire, Byron Bay, N.S.W., has accepted appointment as engineer to the municipality of Ryde, Sydney.

Mr. P. Lingford has resigned his position as engineer to the Wodonga shire, having accepted the position of shire engineer at Rutherglen, Vic.

Mr. H. R. Forbes Mackay, general manager of the Sydney city council electricity supply department, returned to Sydney by the Moldavia last week.

Mr. Ewen H. Mitchell, naval architect, London, and formerly general manager, Cammell, Laird and Co., Birkenhead, is at present on a visit to Australia.

Mr. E. W. Priddle, engineer to the Amaroo shire, Cumnock, has resigned having accepted a similar position with the Abercrombie shire, Rockley, N.S.W.

Mr. G. Hobler, chief engineer of the Commonwealth railways, has been appointed a member of the Northern Australian commission at a salary of £1,500 per annum.

Mr. W. J. Thompson, a governing director of John Thompson Water Tube Boilers Ltd., Wolverhampton, Eng., who has been on a visit to Australia, sailed for the East last week.

Mr. L. A. Hooke, deputy general manager of Amalgamated Wireless (Australasia) Ltd., who has been on a business trip to Fiji and New Zealand, returned to Sydney by the Aorangi on July 23.

Mr. J. Field, junr., who for 12 years has been employed as a draughtsman at Thompson's Engineering Works, Castlemaine, Vic., has been appointed lecturer in mechanical engineering at the university of Tasmania.

Mr. G. H. Rowney, who recently resigned, after acting as engineer to the Wollondilly, N.S.W., shire council for 12 years, was entertained by the residents of The Oaks and employees of the shire council, and received presentations.

Mr. S. H. Watson, superintendent at Adelaide, and Mr. F. B. Harvey, train controller at Adelaide, will shortly leave on an educational tour of South Africa, Great Britain, Europe, Canada and U.S.A. to study railway matters in those countries.

Mr. G. Oliver Smith, B.Sc., B.M.E., who has been acting as city engineer of Hobart for the past 15 months, on probation, has now been formally appointed to the position. The council has expressed itself as highly pleased with the good work done by Mr. Smith in connection with the reconstruction of the city streets.

Mr. E. J. Muntz, who has been engineer of the Ripon shire, Vic., for 26 years, has been appointed by the Victorian country roads board to act as engineer in charge of a section of the Melbourne-Stawell highway, with Beaufort as the headquarters of the section.

Mr. Frank Vibert, M.C.E., latterly of the Reinforced Concrete and Monier Pipe Construction Co., has commenced practice at Temple Court, Melbourne, as a consulting and architectural engineer specialising in the design of reinforced concrete and steel structures.

Mr. John Boyd Cramsie has been elected chairman of the metropolitan meat industry board, N.S.W., for a period of five years at an annual salary of £2,500. The other members of the board appointed are Messrs. J. P. Osborne and A. D. Kay, at salaries of £1,500 each per annum.

Mr. A. C. Waters, manager of the Walsh Island dockyard, is going to Great Britain to consult with the admiralty authorities in regard to the design and equipment of the floating dock of 15,000 tons lifting capacity which is to be constructed by the N.S.W. government. The estimated cost is £410,000, of which the Commonwealth will contribute £135,000.

Mr. W. F. Slade has been appointed machine shop foreman in the S.A. railway workshops at Islington. Before coming to Australia several years ago, Mr. Slade had considerable experience in British engineering works and was responsible for the erection of a large gun shop in Scotland for the British ministry of munitions during the war. Latterly Mr. Slade has been employed in the Sunshine, Vic., engine works.

Mr. A. E. Aughtie, city engineer of South Melbourne, has been granted six months' leave of absence and a bonus of £1,000 to enable him to take a holiday overseas. Mr. Aughtie has been at South Melbourne for 25 years, and the generous treatment accorded to him is a recognition of the valuable services he has rendered to the municipality. At the same time the expenditure will be worth while, as the engineer will come back with new ideas to help him in his work.

Mr. G. D. Mudie, A.M.I.E.Aust., who holds the degree of bachelor of engineering at the Adelaide university and the fellowship diploma of the school of mines, has been appointed town clerk and surveyor to the Hindmarsh corporation, S.A. Mr. Mudie is 30 years of age and a returned soldier. On completion of his university course, he entered the engineer-in-chief's department. He was subsequently transferred to Lock 1 and Lock 3 on the Murray river works. For the past two years he has held the position of engineering assistant with the Adelaide city council and has had considerable experience in all branches of municipal engineering.

The engineering staff of the Christchurch, N.Z., drainage board, has been increased by the appointment of three assistant engineers under Mr. Jas Cullens, chief engineer. The new members of the staff are: Messrs. C. F. Marshall Smith, B.E.(N.Z.), B. B. Swinburn, formerly with the Wanganui-Rangitikei power board, and A. D. Goodwin, B.A., formerly consulting engineer to the Dargaville borough council.

Mr. H. G. Tolley, A.M.Inst.C.E., has been appointed to fill the position on the South Australian irrigation commission rendered vacant by the resignation of Mr. R. Horsfield. He served his cadetship with the Victorian state rivers and water supply commission, and was engaged on the construction of the Waranga reservoir and canal, 1903-1905. In 1909 he joined the public works department of New South Wales, and in 1912 studied irrigation and other matters in U.S.A., Great Britain, Italy and Egypt. He served with the engineers during the war and rose to position of chief engineer of a division. In 1923 he was appointed chief engineer to the Renmark Irrigation Trust No. 1. It is not proposed to fill the other vacancy caused by the resignation of Mr. S. McIntosh.

Mr. R. Horsfield, of the South Australian irrigation commission, has been appointed a member of the Victorian state rivers and water supply commission to fill the vacancy caused by the death of Mr. J. S. Dethridge. Mr. Horsfield was previously engaged as an engineer with the Victorian commission until he accepted the South Australian position. He has taken part in the construction of several important works for the supply of water for irrigation purposes, and was closely associated with the late Mr. Dethridge in the carrying out of important works. During his career in South Australia he helped to reorganise the country water supply policy, and was also closely identified with that of soldier settlement. Prior to his employment by the Victorian water commission Mr. Horsfield had a lengthy experience in municipal work.

The Sydney city council has agreed to the retention of Messrs. Preece, Cardew and Rider as inspecting engineers for the electricity supply department in London, upon the following terms: (1) A retainer of £250 per annum, which covers incidental matters outside actual inspection work, and including, where necessary, the certifying of accounts and issue of payment certificates. (2) Inclusive charge of 1½ per cent for inspection of all plant and materials, such charge to be based on the f.o.b. value. (3) A charge of 1 per cent on the contract price for the inspection of cables. (4) Actual cost of travelling expenses to be refunded for inspections outside the United Kingdom, also repayment of cablegram costs. Either party may terminate the agreement by giving one month's notice in writing.

Mr. E. A. Owen, formerly on the staff of the Bendigo, Vic., sewerage authority and more recently assistant engineer to the Tweed, N.S.W., shire council, has received an appointment as a civil engineering draftsman with the Victorian electricity commission.

Mr. S. G. Moore, engineer in chief of the Bendigo, Vic., sewerage authority, recently submitted a report in regard to the proposed alteration of the treatment works. He estimated that the cost of alterations to two of the present tanks would be £115, and the additions thereto £3,735, making a total of £3,850 for the tanks. He estimated that the filters and humus tanks would cost £9,000 additional. No decision was arrived at consequent on the carrying of a motion advocating the appointment of a consulting engineer.

ADELAIDE UNIVERSITY ENGINEERING SCHOOL

A fine block of buildings to house the physics and engineering departments was officially opened by the premier of South Australia (Hon. J. Gunn) on August 17. It is a two-storied structure with a frontage of 311 ft. and a depth of 52 ft., built in reinforced concrete. It was designed by the government architect (Mr. A. E. Simpson) in consultation with Professor Kerr Grant (physics) and Professor R. W. Chapman (engineering), and provides all the accommodation necessary for carrying on the work of the two departments. Its cost was £50,000. This is the first of the group of university buildings of which the government has borne the whole of the cost.

The opening of the new building coincided with the celebration of the jubilee of the university. The first classes in engineering at the Adelaide university were started about 1890, as evening classes in electrical engineering. At that time the university could not grant degrees in engineering and the authorities had to be content to give the men who qualified the degree of bachelor of science. It was not till 1911 that the degree of bachelor of engineering was authorised. Up to date 137 students had obtained engineering degrees and at present there were about 100 students. Professor Chapman, the occupant of the engineering chair, has been connected with the university from the very beginning, but it was not till 1907 that his status was raised from lecturer in mathematics to professor of engineering.

The Hon. L. L. Hill, in the course of a speech, said that the engineering school under Professor Chapman had turned out many capable engineers. He also referred to the Angas Engineering Scholarship, established by the Hon. J. H. Angas. Eighteen awards had been made, and of these scholars all but four were now in Australia. On the physics side, he said, there were two men who might be claimed as their own, Professor Sir William Bragg and his illustrious son, Professor W. L. Bragg.

INSTITUTION OF CIVIL ENGINEERS

On July 23 members of the Institution of Civil Engineers, New South Wales, visited the works of R. Fowler Ltd., pottery manufacturers, Marrickville. Among those who accepted the invitation were:—Messrs. A. Peake (hon. sec.), E. A. Amphlett, C. R. Bickford, G. M. Blair, R. J. Boyd, C. A. C. Colton, H. H. Dare, R. E. Dickinson, A. J. Debenham, A. E. Flavelle, R. D. Fitzgerald, W. Hutchinson, G. A. Julius, E. S. Maclean, L. H. Nutter, G. Pickering, F. J. Pigott, R. Y. Smith, G. Sutherland, and A. E. S. Temple. They were met upon arrival by Messrs. R. Fowler, managing director, R. R. Moss, director, J. H. Hocart, commercial manager, and H. Nelson, works manager.

The works cover an area of 16 acres. The principal output is sanitary fittings, but cement pipes, domestic ware, fire bricks, glazed bricks, insulators, tiles, fuse boxes, and conduit piping are also produced. It is claimed to be the largest establishment of its kind in the world. An installation which attracted considerable interest was a pottery kiln, used primarily for the baking of Bristol ware. It has an overall length of 330 ft., and the accommodation provides for 51 trolleys which progress at the rate of one inch per minute. The heating is so arranged that it is not until approximately a distance 220 ft. has been travelled that the hottest point, 1,200 deg. C. is reached, after which the heat was recuperated. In order to counteract the excessive temperature affecting the cast iron frames of the trolleys, also the steel wheels and roller bearings there is a series of three water circulating pipes.

A subsidiary company, R. Fowler Vianini Ltd., whose specialities are reinforced and non-reinforced concrete pipes, and concrete lining of iron pipes, occupies a site adjoining R. Fowler Ltd. Members here saw in operation the Vianini process of lining cast iron water mains with cement mortar, per medium of special equipment supplied by Ateliers de Constructions Mecaniques, Vevey (Suisse). It was stated that the Metropolitan Water, Sewerage and Drainage Board, Sydney, has placed orders for lining 5,665 cast iron pipes, ranging in diameters from 24 in. to 36 in., of a total length of 67,980 ft. for use in connection with water supply at Waterloo, Waverley, Potts Hill, Enfield, Ashfield, Wattle Hill and Woollahra, while in addition, contracts have been received from the Concord and Mosman municipal councils.