

# PWH in Australia

Peter Jungen, Germany

PWH in Australien  
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オーストラリアの穀物ターミナルにおけるコントロール・システム

澳大利亞穀物集散站的操控系統

أنظمة التحكم المستخدمة لمحطات الحبوب في أستراليا

## 1. The PHB Weserhütte Group

PHB Weserhütte Aktiengesellschaft, shortly PWH, has three divisions in the Federal Republic of Germany (Cologne, Bad Oeynhausen, St. Ingbert) and numerous subsidiaries and associated companies throughout the world (Australia, Brazil, Germany, France, England, Spain, Austria, South Africa, USA).

In 1980, PWH emerged from an amalgamation of Pohligh-Heckel-Bleichert Vereinigte Maschinenfabrik AG, Cologne and Weserhütte AG, Bad Oeynhausen.

The PWH Group employs worldwide a workforce of approximately 7,000 of which 3,500 are in Germany. In 1980, the Group achieved a turnover of 820 million DM; at the present time the orders on hand total around 1.3 · 10<sup>9</sup> DM. The main field of activity of the PHB Weserhütte Group is systems and equipment for bulk material handling. With more than 100 years of experience, self-owned design offices, manufacturing facilities, erection teams and subsidiaries or associated companies in many parts of the world, the Group ranks internationally as one of the leaders in this sector of industry. Systems and machinery from PWH help to mine, prepare, stockpile, reclaim, homogenize and convey valuable raw materials. PWH supplies equipment for opencast and pit mining and is active in the mineral and quarry industries, the cement industry, in the chemical and fertilizer industry, supplies power station equipment, port installations and is also active in the field of offshore installations.

## 2. Development of PWH Companies in Australia

PWH gained a foothold in Australia at a time when the reputation of the Fifth Continent as one of the world's most important and richest suppliers of raw materials was not as evident as it is today.

In 1969, the then Eisenwerk Weserhütte AG was awarded a contract for the construction of a trunk conveyor line for the Northern Territory Nabalco-Gove bauxite opencast mine which was the world's largest at that time. For the purpose

of handling this project a subsidiary, Weserhütte Otto Wolff Pty. Ltd., was established in Sydney. This company was — and still is — a pure engineering and contracting enterprise, that is without its own manufacturing facilities. The main sub-contractor for this Nabalco contract was Eglo Engineering Pty. Ltd. who have manufacturing facilities in Melbourne, Port Kembla, Newcastle and Silverwater. PWH, then under the name of Weserhütte, became a shareholder in Eglo by acquiring a substantial interest which was increased in the following years.

In 1969, Pohligh-Heckel-Bleichert, Cologne, the other partner of the merger, likewise started with a direct market development in Australia by founding the Sydney-based PHB Engineering Pty. Ltd.

This launch into the Australian market — one could say for obvious reasons — was systematically improved over the following years. The contract for the Gove bauxite opencast mine was followed between 1970 and 1973 by further major orders for conveyor systems, stackers and stockpiling facilities among others for the iron ore opencast mines and stockyards in Goldsworthy, and Robe River as well as a bauxite shiploader for Comalco.

In 1974/75 a foothold was established in the field of black coal: a bulk handling and transport system comprising stackers, bucket wheel reclaimers and shiploader were supplied to Australia's largest black coal export port, Port Waratah near Newcastle, New South Wales. By this time Australia was clearly emerging as a major international exporter of raw materials.

In 1976, lignite, in which Australia is particularly rich, was opened up as a market for PWH. Large capacity belt conveyor systems and other mining equipment for lignite opencast mines in Victoria were planned, constructed and delivered.

The Australian subsidiary of PWH received an important order for the construction of a large-scale conveyor system in 1978 which was placed by the Utah Mining Company for the Goonyella opencast coal mine. This has been considered a further important milestone in the black coal sector whose significance was gaining momentum. In 1980, this area of the market experienced further encouraging expansion through a large order for the extension of the Port Waratah coal exporting facility for which further stockyard equipment and shiploaders were delivered following completion of the first expansion phase. Thus PWH has supplied the entire

stockyard and shiploading machines to the largest black coal exporting port in Australia.

In 1980, PWH in Australia set up a subsidiary in Perth to cover the business activities in Western Australia. Up to this time the Western Australian market had been handled jointly by the parent company from Germany and through the Sydney based head office of PWH. A growth in demand in Western Australia necessitated a local office with particular emphasis in the field of mobile crushing units. Contracts for two such units have been awarded since setting up the Perth subsidiary.

Over the years cooperation between Eglo and PWH Australia has been intensified. Eglo gained access to the market for material handling systems through the association with PWH. The company in general achieved a very positive development in various fields of activity. Part of Eglo's growth was contributed by the association with PWH. From 1978 onwards, a joint venture office in Melbourne is handling major contracts for material handling plants, for example, in 1980 involving the construction of conveyor systems for the State Electricity Commission of Victoria.

In addition to these activities in the field of materials handling, Eglo succeeded in specializing in the petrochemical and offshore marine industry. In the meantime Eglo has

achieved substantial turnover in this field. Today, PWH is Eglo's main shareholder.

The positive development of trading activities in Australia on the material handling sector prompted PWH to consider desirable the formation of a close partnership with another Australian manufacturing company in order to gain access to manufacturing capacities where a bottle-neck could arise at present and in the future, and to enhance its product range. It has been for this reason that through its Australian holding company PHB Weserhütte, in 1981, acquired an interest of now about 20% in Sydney based Malco Industries Limited (about 570 employees, turnover about A \$ 24 mio) with works in Sydney (largest independent foundry in Australia) and Adelaide. This acquisition is covered by an approval of the Australian Government for PHB Weserhütte to take up a holding of up to 45% in Malco Industries Ltd. As before the materials handling systems business will be handled through PHB Weserhütte Sydney, as far as engineering and contracting is concerned. Malco will manufacture and market special machinery, equipment and components for crushing, screening and materials handling. Both companies will cooperate under the leadership of PWH in certain instances and areas if this appears reasonable. Malco will also take a licence on PWH scrapers.

Fig. 1: Stockpile arrangement of Port Waratah Coal Export Facility, showing PWH bucket wheel reclaimers and stackers



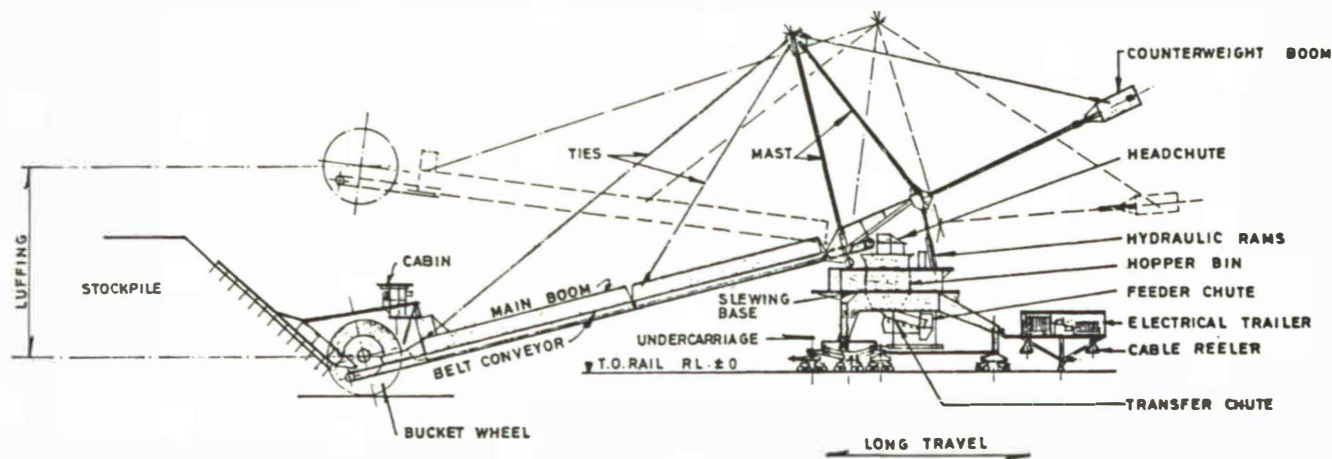


Fig. 2: General arrangement drawing of PWH bucket wheel reclaimer at Port Waratah

### 3. Brief Analysis of PWH's Australian Activities in the Field of Material Handling

An analysis of the main activities of the PWH associates shows that about 75% of orders received relate to the sector of coal mining and handling whereas approximately 15% is in the field of machinery and equipment for bauxite handling. The remainder covers systems for iron ore, pellets, nickel, fertilizers, cement etc.

In the field of black coal mining and handling, which up to the present time has taken about a fifty percent share of orders received by PWH in the sector of coal mining and handling, the stockyard machines and port installations at Port Waratah dominates the scene. A milestone in the PWH activities in the Australian black coal industry, not only from the order value but from a technological point of view, was the supply of a shiftable belt conveyor system of 10 km length, an order awarded by the Utah Mining Company for the Goonyella opencast mine.

Since 1976 the PWH companies have been supplying plants and machinery, which include extensive conveying systems, spreaders and auxiliary opencast mining machinery, for the development of lignite deposits. Special mention should be made to the plants for lignite opencast mines in Victoria (Loy Yang and Yallourn) for which PWH received major contracts awarded by the State Electricity Commission of Victoria.

A traditionally important field of activity for PHB Weserhütte have been coaling installations for power stations, good examples being the extensive orders for coaling installations at Wallerawang and Eraring power stations in New South Wales, booked in 1978.

The PWH programme for coal mining and handling thus covers the complete transportation chain from lignite and black coal opencast mining equipment through to the various stockyard systems (bucket wheel machines, drum reclaimers, scraper reclaimers) to the shiploader and includes the power station coaling installation.

For the mining and storage of bauxite PWH has supplied opencast mining equipment (conveyor systems and mobile crushing units) as well as stockyard machinery. Special mention should be made here above all to the opencast

bauxite mine at Gove in Arnhem-Land. PWH supplied for Gove — which launched the company in Australia — the complete material handling complex.

For the handling of ore, pellets, fertilizers and nickel PWH has supplied in Australia conveyor systems, stackers, drum reclaimers and shiploaders.

In all about two thirds of the order value to date falls in the sector of machinery and plant for opencast mining and power station coaling installations and about one third in stockyard facilities and port handling installations.

A breakdown on a regional basis shows that since the commencement of PWH activities around 50% of the order volume originated from the States of Queensland, New South Wales and the Northern Territory while Victoria and Western Australia are gaining more importance now.

### 4. Survey of Major Orders Received by PWH in Australia (Material Handling)

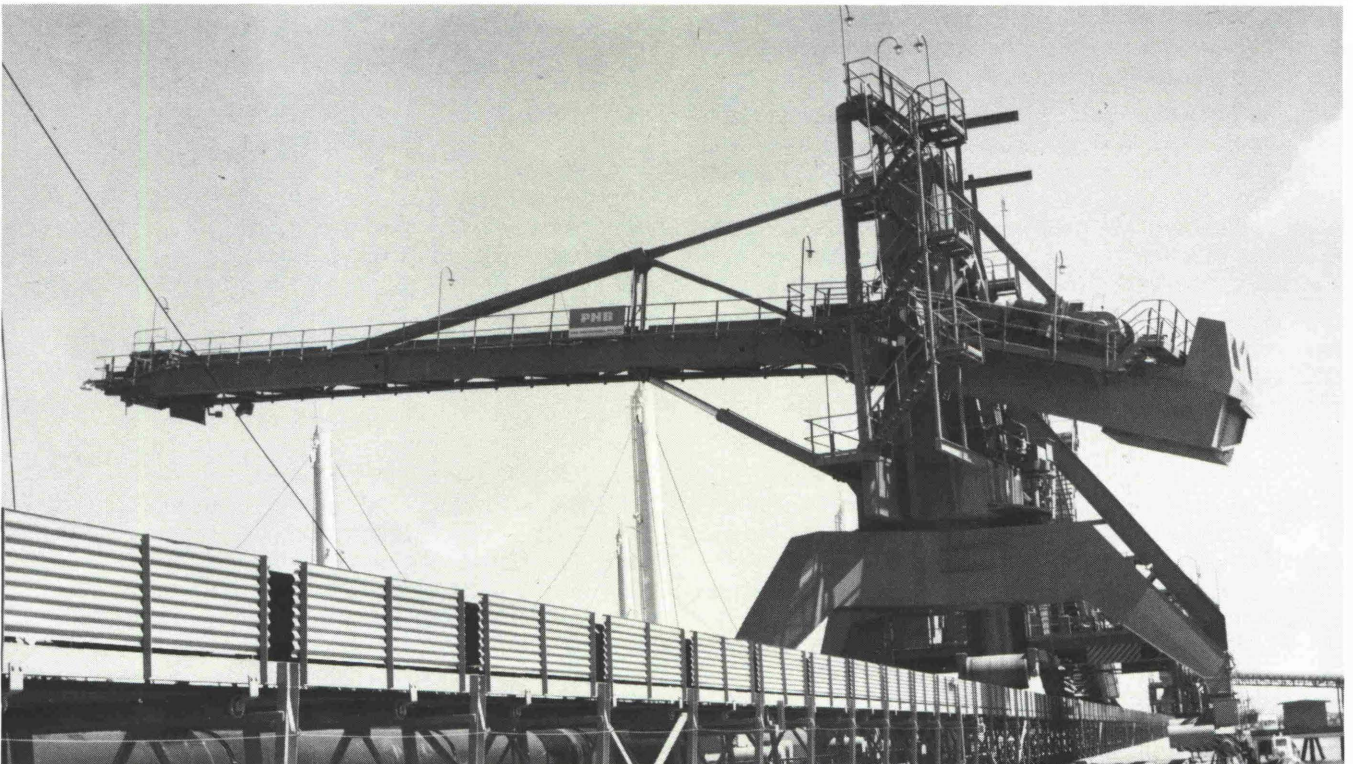
1969	Gove	Conveyors/blending stockyard/shiploader
1970	Weipa	Shiploader
1971	Robe River	2 Stackers/conveyors
1972	A.I.S.	Conveyor system
1972	Goldworthy	1 Hydraulic stacker
1974	A.I.S.	Barrel reclaimer stacker
1974	Port Waratah	2 Shiploaders
1974	SEC-V	2 Compound walking mechanisms
1975	Port Waratah	2 Bucket wheel reclaimer 3 Stackers
1975	SEC-V	1 Crawler mounted stacker
1978	Thiess	Stockyard equipment
1978	Mt. Newman	Stacker/conveyors
1978	Wallerawang	Coal handling conveyors
1978	Utah	Shiftable conveyor system WFM
1978	Eraring	Coaling conveyors
1978	SEC-V (JV)	Shiftable conveyor system with transport crawler
1979	SEC-V (JV)	Conveyors; stationary
1979	Cape Cuvier	Shiploader
1979	Alcoa	Stacker
1979	Alcoa	Reclaimer
1979	Alcoa	Conveyor design



Fig. 3: Port Waratah shiploaders supplied by PWH

1979	Alcoa	Mobile crusher	1980	Port Waratah	Stacker/reclaimer/shiploader
1979	Alcoa	Filter, delkor	1980	Ardlethan	Filter
1980	Wivanhoe	Cranes	1980	SEC-V (JV)	Conveyors; stationary
1980	Port Waratah	Upgrading (stacker/reclaimer)		79/333	
1980	Alcoa	Conv.-filter, delkor	1980	Wagerup	Belt filter
1980	SEC-V (JV)	Conveyors; stationary	1980	QCL	Shiploader erection
	79/516		1981	Worsley	Crusher
1980	Warkworth	Stacker/scrapper	1981	Warkworth	Stacker
	Mining		1981	BHP Stockton	Scraper with stacker
1980	QL-Nickel	Stacker/scrapper	1981	Worsley	Impact mill

Fig. 4: PWH bauxite shiploader for Comalco at Weipa, North Queensland



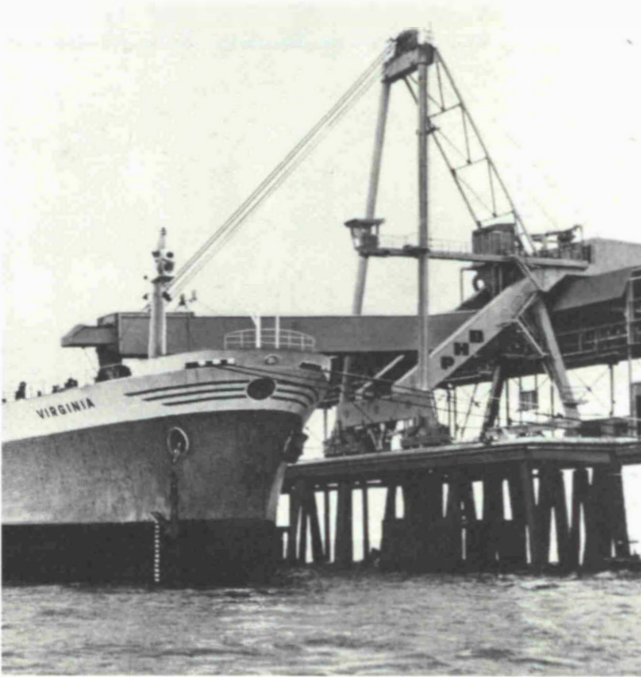


Fig. 5: PWH bauxite shiploader for Nabalco at Gove, N.T.

## 5. Development Tendency for the Future

The ever-increasing worldwide shortage of oil and energy, which above all led to a growing demand for coal in the industrial countries of the West and Japan, unleashed what many people call a resource boom in Australia that in particular concentrates on the exploitation of black coal and lignite. Proven coal reserves are stated with  $1.8 \cdot 10^9$  t and deposits of around  $14 \cdot 10^9$  t are still supposed to lie beneath the earth. Black coal deposits which can be worked economically, and others which are potentially economic, can be found above all in Queensland and New South Wales, lignite in Victoria. Important lignite deposits have furthermore been discovered in Western Australia.

In order to meet the increasing export demand for steaming coal and the inland demand for lignite which is chiefly used to fuel thermal power stations and to a minor degree destined for coal liquefying purposes (the world coal study prognoses up to the year 2,000 an increase of the coal output in Australia to 326 million tons coal equivalent) new deposits will have to be worked and tremendous capital expenditure for coal storage, blending and for port handling equipment will be necessary.

An important impact on the demand for material handling equipment can be expected from the planned increase in the Australian aluminium smelting capacity to 850,000 t by 1985 (1980: 350,000 t) because this will lead to a major increase in the exploitation and handling of bauxite.

The principal activities of Eglo Engineering will centre around the engineering and fabrication of production platforms for offshore oil and gas production and onshore petroleum production, near shore marine structures, materials handling, petrochemical industry as well as workshop fabrication of related heavy equipment.

PWH has now been in Australia for over 10 years and feels completely confident to help to the development of the Australian minerals and mining activities. To emphasize this it is the policy of PHB Weserhütte to employ local personnel to manage the Australian companies.

In the past PWH has contributed substantially to the exploitation and handling of Australian raw materials which are so important for the development of industry worldwide. PWH will further contribute to the resource industry in Australia due to its structure which not only has at its disposal the necessary engineering knowledge but also the manufacturing capacity. In Australia, PWH can not only solve individual problems but is capable of offering the complete transport system for mining, storage, blending and port handling of mineral resources and coal right up to the consumer (i.e., power stations in the case of coal).

The companies affiliated with PWH in Australia at present have a total workforce of around 2,300 with a turnover volume of about A \$ 140 million.

Fig. 6: Thiess Bros. Pty. Ltd. Blackwater Mine coal handling plant including PWH travelling, slewing and luffing stacker and two portal scraper reclaimers

