

Chapter 16

MANUFACTURING

		<i>Page No.</i>
16.1	Industries	188
16.1.1	Manufacturing Companies	189
16.1.2	Size of Companies	193
16.1.3	Manufacturing and Geography	193
16.2	References	194

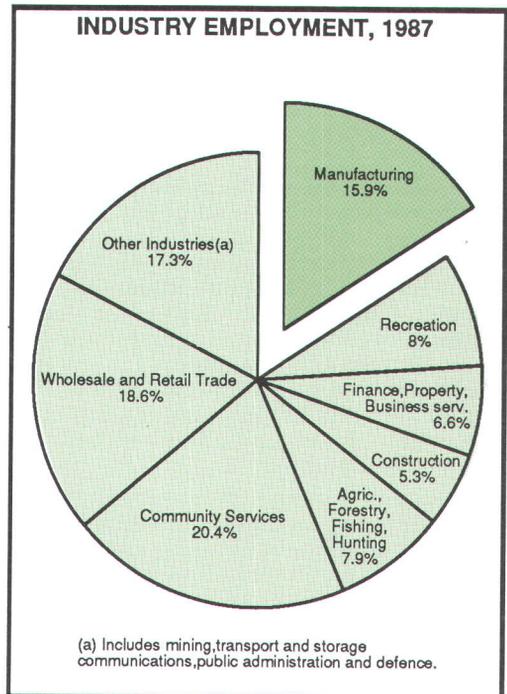
Chapter 16

MANUFACTURING

At November 1987 an estimated 26 700 persons were employed by manufacturing industries in Tasmania. This was almost 14.5 per cent of the estimated total number of people employed in the State, 184 300.

Despite a drop of about 6 000 since the early 1970s employment in manufacturing at about one in seven employed Tasmanians in 1987, was almost twice as many as were employed in agriculture, forestry, fishing and hunting, and of the order of nine to 10 times the number employed in mining.

Manufacturing's contribution to the State's economy over recent years has been consistent. During the period 1977-78 to 1983-84 manufacturing has provided between 18.2 per cent and 20.3 per cent of the State's gross domestic product. In 1983-84 it was almost three times the contribution made by agriculture, and six times that of mining; the only industry sector to exceed manufacturing in 1983-84 was public administration, defence and community services which contributed 20.2 per cent. Nevertheless, the value of manufacturing has declined slightly in real terms since 1979-80.



16.1 VALUE OF MANUFACTURING, TASMANIA

Year	Current Values	1979-80 values (a)
1979-80	653 770	653 770
1980-81	713 445	653 515
1981-82	713 091	593 810
1982-83	695 135	522 778
1983-84	837 710	590 717
1984-85	937 933	631 261

(a) Current values adjusted using the Consumer Price Index for Hobart.

In 1984-85 manufacturing produced an increase in its value over and above the rise in general price levels as measured by the consumer price index. Value added increased by 12.0 per cent over that for 1983-84 while turnover went from \$2 220 463 in 1983-84 to \$2 422 890 in 1984-85, an increase of 9.1 per cent.

16.2 MANUFACTURING, TASMANIA

Particulars	Unit	1983-84	1984-85
Establishments operating at 30 June (a)	number	558	575
Employment (b) (average over whole year) —			
Males	number	19 857	19 902
Females	number	4 640	4 592
Persons	number	24 497	24 494
Wages and salaries (c)	\$'000	414 330	442 988
Turnover	\$'000	2 220 463	2 422 890
Stocks —			
Opening	\$'000	323 638	321 354
Closing	\$'000	329 771	385 318
Value added	\$'000	837 710	937 933
Fixed capital expenditure less disposals	\$'000	61 219	52 279

(a) Excludes single-establishment enterprises with fewer than four persons employed.

(b) Includes working proprietors.

(c) Excludes the drawings of working proprietors.

16.1 INDUSTRIES

Tasmanian manufacturing industry has a significant reliance upon forests. Industries, whose raw material for manufacture is logs and timber off-cuts, in 1984-85 accounted for 37.7 per cent of the total value added by Tasmanian manufacturing industry and 35.1 per cent of the number of persons employed in manufacturing over the year. Industries included in this forest based manufacturing category are log sawmilling, resawn and dressed timber, veneers and manufactured boards of wood, hardwood chips, pulp, paper and paperboard.

The largest single industry group is that of food and beverages. This group accounts for 23.5 per cent of employment in the manufacturing sector, and contributes 22.6 per cent of the total value added.

Several industry groups increased their value added at a significantly higher rate from 1983-84 to 1984-85 than the overall increase in value added for the manufacturing industry. The most notable of these was the clothing and footwear group. In 1984-85 value added by this industry group was 66.4 per cent higher than in 1983-84. However this industry group is only a small component of the Tasmanian manufacturing industry; in 1984-85 it employed 1.5 per cent of the persons employed in manufacturing and its value added was less than one per cent of total value added by manufacturing. Likewise the other machinery and equipment group increased

16.3 MANUFACTURING, TASMANIA, 1984-85

Industry	Employment	Value added \$'000
Food and beverages	5 752	212 170
Paper, paper products	5 323	214 122
Wood, wood products and furniture	3 276	139 508
Basic metal products	3 364	n.p.
Textiles	n.p.	n.p.
Clothing and footwear	370	7 384
Fabricated metal products	1 487	38 010
Chemical, petroleum and coal products	n.p.	n.p.
Transport equipment	605	23 715
Non-metallic products	836	46 060
Other machinery and equipment	720	19 977
Miscellaneous manufacturing	374	13 170
Total manufacturing	24 494	937 933

its value added by 21.5 per cent but employed only 2.9 per cent of total persons employed in manufacturing and accounted for only 2.1 per cent of total manufacturing value added. The paper, paper products, printing and publishing industry group, which employed 21.7 per cent of all those employed in manufacturing and accounted for 22.8 per cent value added by manufacturing, increased its value added by 17.3 per cent and employment by 6.1 per cent. The wood, wood products and furniture group increased employment by 6.4 per cent in 1984-85 compared with 1983-84.

16.4 MANUFACTURING PERFORMANCE, TASMANIA, 1984-85

Industry group	% change 1983-84 to 1984-85	
	Employment	Value added
Food and beverages	-4.5	4.6
Textiles	n.p.	n.p.
Clothing and footwear	63.0	66.4
Wood, wood products and furniture	6.4	12.3
Paper, paper products, printing and publishing	6.1	17.3
Chemical, petroleum and coal products	n.p.	n.p.
Non-metallic mineral products	2.7	17.2
Basic metal products	1.2	n.p.
Fabricated metal products	-3.8	4.2
Transport equipment	-32.3	-7.9
Other machinery and equipment	8.9	21.5
Miscellaneous	-1.1	11.1
Total	1.8	12.0

16.1.1 Manufacturing Companies

Selected descriptions by the Tasmanian Development Authority.

Food and Beverages

Cadbury Schweppes Australia Ltd (Claremont): In 1921 an association of three British confectioners established their Australian plant at Claremont, near Hobart. Today, the plant is the largest cocoa and confectionery factory in Australia. The factory employs some 700 Tasmanians and specialises in moulded chocolate blocks, fancy boxed assortments, cocoa, drinking chocolate and the well known Flake and Turkish Delight bars. Some 30 million litres of fresh Tasmanian milk are used each year, most of which is collected and processed at a subsidiary dairy factory at Burnie. Large quantities of famous Cadbury Dairy Milk Chocolate are sent each year to the company's sister factory in Victoria.

Cascade Group of Companies (Statewide): The company is the oldest manufacturing company in Australia and is firmly established in the beverage industry at manufacturing, wholesale and retail levels. The Company manufactures alcoholic beverages through the only two breweries in the State: at Esk Breweries, Launceston (Boags Beer) and Cascade Brewery, Hobart (Cascade Beer). The Cascade Fruit Juices Division manufactures alcoholic cider under the brand names *Mercury* and *Van Diemen*, and also *Apple Isle* non-alcoholic cider, *Ultra-C* blackcurrant vitamin C syrup, soft drinks, pure fruit juices, fruit juice syrups, berry fruit pulps and concentrates for local and export distribution at Cascades, Hobart. The wholesaling of wine and spirits is the largest operation in the State with major outlets in Hobart, Launceston and Ulverstone. The company owns 44 hotels spread throughout the State, the majority of which are leased to individuals.

Edgell-Birds Eye Division of Petersville Industries Ltd (Devonport, Ulverstone and Scottsdale): This company is Tasmania's leading processor of frozen and canned vegetables. The annual volume of raw materials required by the Devonport, Ulverstone and Scottsdale factories is approximately 207 000 tonnes, the main crops processed being potatoes, green peas, green beans and carrots.

McCain Foods (Aust) Pty Ltd (Smithton): McCain purchased the Smithton factory of General Jones in June 1984. The factory produces frozen vegetables, of which the main brands are Copper Kettle, Pict and McCain. A new plant in Circular Head employing 100 people is planned to commence in early 1988.

United Milk Tasmania Ltd (Smithton, Edith Creek, Wynyard, Devonport, Legerwood): This is the State's largest manufacturer of dairy products and processes approximately 60 per cent of the milk produced in the State. Annual production in 1986-87 was approximately: butter (salted and unsalted), 5 700 tonnes; cheese (cheddar), 9 600 tonnes; milk powders (skim, full cream and buttermilk), 7 300 tonnes; casein (acid), 330 tonnes; whey proteins (35 per cent, 50 per cent and 75 per cent), and whey powder, 1 500 tonnes. The company also produces milk concentrates and operates retail produce/hardware stores and a farm machinery business servicing rural areas.

Paper, Paper Products

Associated Pulp and Paper Mills (Burnie, Wesley Vale, Long Reach, Triabunna): This group of companies which is a wholly-owned subsidiary of North Broken Hill Holdings Ltd, is a major Australian integrated forest products complex and Australia's principal producer of fine printing and writing papers, magazine papers and coated papers. In Tasmania, the Company operates major manufacturing complexes at four centres: *Burnie* — where it commenced paper production in 1938; present annual capacity of the Burnie pulp and paper plant is 130 000 tonnes. In addition, the company presently has three sawmills at Burnie and Wynyard through its wholly owned subsidiary company, Burnie Timber Pty Ltd, but at present, only two are operating. The company also acquired, in 1979, Tasmanian Plywood Mills Pty Ltd which is based at Somerset. *Wesley Vale* — In 1970 the first stage of an integrated pulp and paper complex was completed when the first paper machine commenced production. The machine has an annual capacity of about 65 000 tonnes of paper. Production at Wesley Vale is mainly of magazine papers. A particle board factory, run by the subsidiary Burnie Timber Pty Ltd, also operates at Wesley Vale; annual production is about 15 million square metres. *Long Reach* — APPM completed its woodchip plant and made its first export shipment in 1972. The company has long-term contracts for the export of woodchips to Japan. *Triabunna* — In 1979 APPM took over Tasmanian Pulp and Forest Holdings Ltd which operates a woodchip export mill at Triabunna and also has long-term contracts with Japan.

Australian Newsprint Mills Ltd (Boyer): Since beginning operations in 1941, this company has increased its annual production of newsprint from 27 400 tonnes to its present capacity of 220 000 tonnes in Tasmania. The company also operates a newsprint mill at Albury in New South Wales with an output of 180 000 tonnes

per annum. ANM is Australia's only producer of newsprint and currently supplies approximately 55 per cent of Australia's requirement. The Boyer plant is being constantly upgraded and its product range expanded beyond standard newsprint. This is requiring continuing capital expenditure to improve product quality and productivity involving major rebuilding of two of the paper machines. ANM is the largest company with its head office in Tasmania and indicates that there is an optimistic future for expansion of its operations in this State.

Basic Metal Products

Comalco Aluminium (Bell Bay) Ltd (George Town): Australia's first aluminium smelter commenced production in 1955 at Bell Bay, owned by the then Australian Aluminium Production Commission, a joint venture of the Commonwealth and Tasmanian Governments, with an annual capacity of 12 000 tonnes of metal. In 1961, the plant and facilities were acquired by the present company and the capacity increased in stages to 117 000 tonnes per annum, with a current employment of 1 270. Products made include rolling block, extrusion billet, foundry alloy ingot, T-bar alloy, and primary metal as ingot, T-bar, and granules. As associated company, Comalco Aluminium Powder, produces aluminium powder, aluminium paste, and high alloy metal powder briquettes.

Electrolytic Zinc Company of A/Asia Ltd (Risdon and Rosebery): Established in 1916, the factory at Risdon is the largest producer of zinc in Australia and the second largest electrolytic-zinc plant in the world. It exports an extensive range of zinc and zinc alloys to over 30 countries. The Risdon plant has the capacity to produce more than 600 tonnes of zinc per day. Apart from the zinc and zinc alloys, the Company also produces cadmium, sulphuric acid, superphosphate, and ammonium sulphate. The zinc plant supplies a large proportion of Australia's total requirements. The company has commenced a major modernisation program to be completed by 1992.

Mine production capacity at the company's West Coast mines at Rosebery is 650 000 tonnes of silver-lead-zinc-copper-gold ore per annum. The associated concentrating mill at Rosebery has capacity to treat 850 000 tonnes of ore per annum including treatment of ore from the Que River mine.

Tasmanian Electro-Metallurgical Co. Pty Ltd (Bell Bay): In 1962 BHP transferred its major alloy making from Newcastle to a green field site at Bell Bay. Expansion in 1976 gave export capacity and added ferro-silicon and manganese ore sinter to the existing product range of high

carbon ferro-manganese and silico-manganese. A significant proportion of production is being exported to steelmakers and foundries in South East Asia, the Middle East, Japan, United States of America and New Zealand. The company completed a \$57 million capital works program in 1987 to increase output by 40 per cent.

Tioxide Australia Pty Ltd (Burnie): This company is a manufacturer of titanium pigments which are used as the base white pigment in paints, enamels, plastics, printing inks, rubber, paper, man-made fibres and a number of other products. At the present time, 10 different grades of pigment are made to meet the varying requirements of user industries. The company was formed in 1937 as Australian Titan Products Pty Ltd. Plans for construction of the Heybridge plant were delayed by the Second World War and the factory was commissioned in December 1948. The initial annual output was 1 500 tonnes compared with a current capacity of 32 000 tonnes. The company has recently undergone a \$23 million capital works program increasing production to 52 500 tonnes per annum. Tioxide is the predominant supplier of titanium pigments to the Australian market and an increasingly significant supplier to South-East Asian countries. A staff of approximately 365 was employed in mid-1984.

Textiles, Clothing and Footwear

Coats Patons (Aust.) Ltd (Launceston): This company first produced yarns in Tasmania over 60 years ago. The factory produces knitting yarns, both wool and synthetic, and annual production is approximately 1.5 million kilograms.

Sheridan Textiles (Derwent Park): Formerly known as UTA Hobart, then Sheridan Domestic Textiles. It is part of the clothing, footwear and textile group of Dunlop Olympic Ltd. The Derwent Park mill commenced operations as Silk & Textile Printers Pty Ltd in 1948. Production now involves the preparation, dyeing and printing of mainly polyester/cotton percale bed sheeting along with some commission printing. The mill also manufactures a full range of quality made-up domestic bed linen and shower curtains for Australian and export distribution.

Tara Towels (Devonport): This company is a branch of Bonds Industries Pty. Ltd. specialising in the manufacture of terry towelling. The company took over National Textiles which was previously Tootal Australia Pty. Ltd.

Fabricated Metal Products

Humes Ltd (Statewide): The Company operates three divisions in Tasmania: Humes Concrete, producing pre cast concrete; Humes

Plastics, manufacturing UPVC and high density polythene pipes and fittings for a wide range of uses; and Humes—ARC, producing prefabricated reinforcement mesh and rod. *Tristeel Engineering Pty Ltd.* This company was formerly Steel Mains Pty Ltd, a subsidiary company of Humes Ltd manufacturing water, steam and oil lines up to six metres in diameter. It also produces pressure vessels, spheres, bulk storage tanks etc. A field crew operates throughout the State installing all types of structural steel, pipelines and mechanical items.

ACL Bearing Company (Launceston): This was formerly the Repco Bearing Co. which was established in 1949 to manufacture engine bearings for the Australian spare parts trade. The factory has since expanded and diversified its range of products and is now the only automotive bearing manufacturing company in Australia. The company also undertakes the manufacture of sintered products using powder metallurgy techniques.

Transport Equipment

International Catamarans Pty. Ltd. (Hobart)

International Catamarans, a partnership between a Hobart manufacturer and a Sydney

marine architect, specialises in commercial aluminium catamarans. These vessels have speeds approaching those of hovercraft and hydrofoils but construction complexity and costs are much lower. Initially, vessels were constructed with displacement hulls immediately below the load carrying superstructure. This design has been supplemented over the last three years by wave-piercing craft having more streamlined, semi-submerged hulls and a more elevated superstructure. Passenger ferries comprise the main use for the craft although utility vessels such as oil rig tenders and light defence and patrol craft are also in service.

Manufacturing began in Hobart in 1977. The success of the design led to licensing of yards in other States, and in Asia, as well as the sale and exchange of related technology in Europe and North America. Recent years have seen local production extended not to greater numbers of craft, but to larger, higher quality vessels for export, including two 470-passenger ferries for the UK market.

The local workforce of around 45 persons, including full time subcontractors and apprentices, has almost doubled since 1984. Although worldwide employment on International Cata-

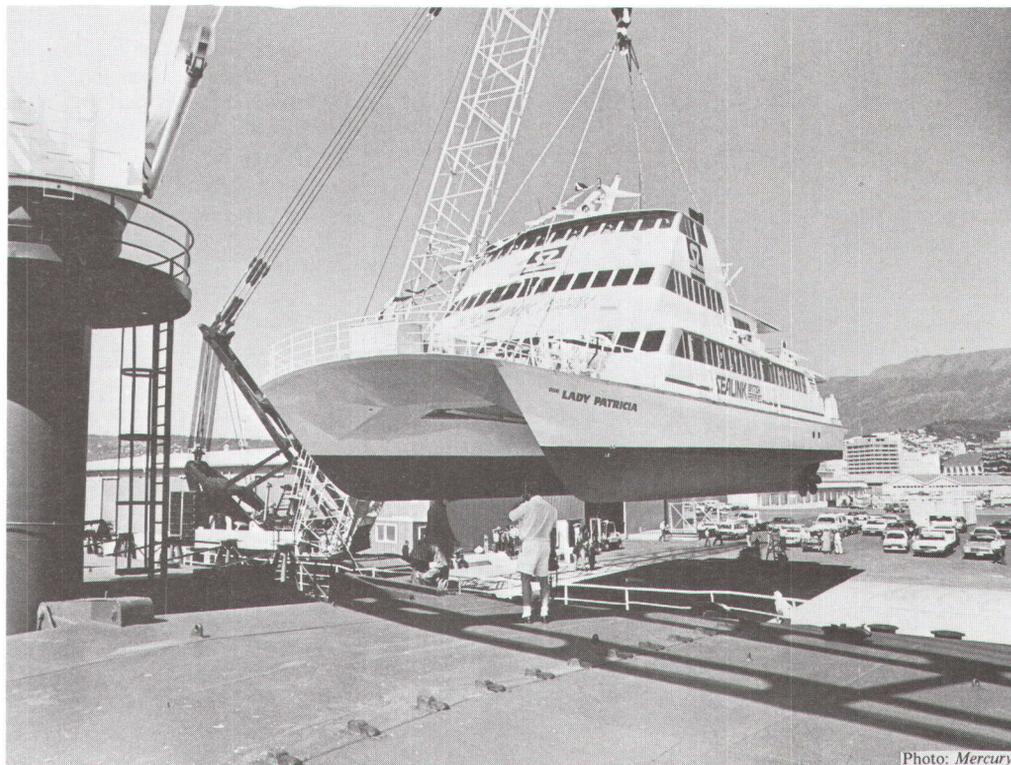


Photo: Mercury

marans designs is estimated at 1 000, growth of the enterprise locally is somewhat limited by a number of factors including availability of skilled personnel. Hobart is nonetheless seen as an ideal base from which developments can be tested and improved.

Wave-piercing models illustrate the advantages of the catamaran design generally. Streamlining allows both rapid and efficient running, with stability afforded by the breadth of the vessel. *Spirit of Victoria*, the first commercial wave-piercer, launched in mid-1985, operates as a passenger cruise vessel on Melbourne's Port Phillip Bay. An improved and slightly larger version now operates as a Queensland Barrier Reef ferry, and manufacture of a 50 metre vessel ordered for the English Channel trade has commenced. A 70 metre Bass Strait ferry of this class, currently being considered, would allow a daylight crossing and thus obviate the accommodation requirements of more conventional, but much slower, traditional ferries.

Another aspect of the company's research lies in the use of surface penetrating propellers in concert with modified hulls. Such designs would lessen the draught of catamarans, an important requirement in some situations. While still at a developmental stage, this type of concept illustrates the potential benefits of adapting an already innovative design to further applications having demonstrable demand on world markets.

Non-metallic Mineral Products

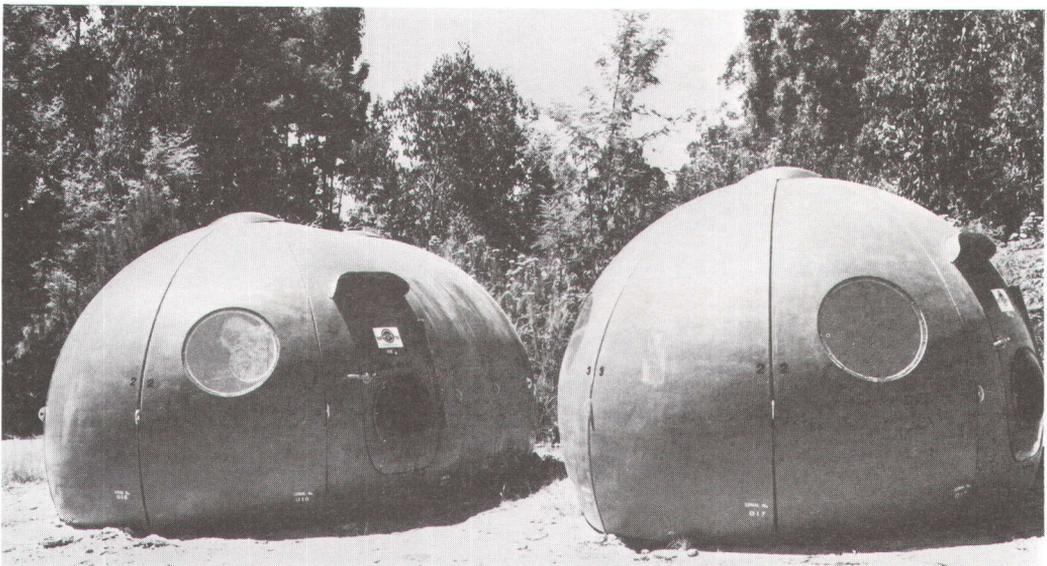
Goliath Portland Cement Co. Ltd (Railton): This company is a wholly owned subsidiary of

Goliath Cement Holdings Limited and has been involved in cement production in Tasmania since 1928. With installation, in 1980, of new plant and equipment using the most modern technology currently available, cement production capacity was lifted to 750 000 tonnes per annum. Plans are complete to install an additional plant to lift this capacity to one million tonnes per annum. The company operates its own 4000 tonne ship the *M.V. Goliath* to transport bulk cement to mainland markets. Goliath has also been exporting palletised bagged cement to Papua New Guinea and other Pacific Island destinations since 1970.

Miscellaneous

Malcolm Wallhead and Associates (Kettering): A new small firm has gained worldwide recognition for developing and manufacturing a portable shelter for use in either polar or equatorial environments. The shelter, known as the "Igloo Satellite Cabin" is of glass-fibre construction, able to be sited on irregular terrain, and can be extended laterally using additional side and floor panels. It is designed to provide safe, reliable field accommodation for at least three people, is transportable by helicopter and can be erected by two people in less than one hour.

The igloo cabin was developed in 1982 by Malcolm Wallhead and tested in Antarctica during the 1982-83 southern summer by the Australian Antarctic Division. In 1983 a second cabin was deployed in the same area and in 1984 a fully assembled cabin was airlifted and flight tested over a range of air speeds up to 60 knots.



In January 1986 the Australian Antarctic Division ordered 10 Igloo Satellite Cabins, six of which were used to establish the new Edgeworth David Station in the Antarctic. The first export order came in March 1986 from the Scott Polar Research Institute, University of Cambridge, England. This was followed later in the year by orders from the National Marine Mammals Laboratory in Washington, and ITT-Antarctic Services in New Zealand. In July the Australian Antarctic Division ordered another 13 igloo cabins ready for the 1986-87 summer season.

In December 1986 Malcolm Wallhead and Associates received several acknowledgements of their success in manufacturing and marketing the Igloo Satellite Cabin including first Tasmanian winner of the Austrade Qantas Export Award for Initiative and Enterprise, a 'highly commended' small business award, and an Export Market Development Grant. The cabin qualified for a Design Registration Certificate and patents for specific features of the igloo were sought in Australia, USA, Canada and Europe.

During 1987 the business continued to expand to the extent that a full-time fibreglasser was employed to increase production of the components and ensure a steady supply of the product throughout the year. In August, design of a tropicalised version of the igloo cabin was completed resulting in a purchase by the Papua New Guinea Electricity Commission for use in the highlands.

By December 1987 Malcolm Wallhead and Associates had manufactured 51 Igloo Satellite Cabins, 46 for use by expeditioners from Australia, USA, Japan, West Germany, France, New Zealand and Green Peace International.

Further export enquiries had been received from Japan and Sweden and the firm had plans underway for the expansion of the business and production of new polar research equipment.

16.1.2 Size of Companies

Tasmania's manufacturing sector is dominated by small firms; only six per cent of the 880 establishments have a workforce of 100 or more employees. Contrarily, almost 80 per cent of the establishments have a workforce of less than 20. If small is beautiful, then the structure of Tasmania's manufacturing sector is probably ideal. Almost all industry groups comprise a majority of firms having a workforce of less than 50; the only exception is the textile group with six companies with more than 100 employees and five companies with a workforce of less than 50 employees.

16.5 SIZE OF MANUFACTURING ESTABLISHMENTS, TASMANIA, 1985

Number of employees	Establishments	
	Number	%
Less than 4	305	34.7
4-9	259	29.4
10-19	115	13.1
20-49	110	12.5
50-99	39	4.4
100-199	32	3.6
200-499	14	1.6
500-999	2	0.2
1000 +	4	0.5
Total	880	100.0

16.1.3 Manufacturing and Geography

The principal centres of manufacturing activity in Tasmania are situated in the Greater Hobart area in the south, Launceston-Tamar valley in the north and on the Burnie-Devonport coastal strip in the north-west. This decentralisation of Tasmanian manufacturing activity reflects the spread of Tasmania's population.

In the south the main manufacturing activity includes ore refining (mainly zinc), paper manufacture, confectionery production, brewing, footwear production, hand tool manufacture, glass bottle production, and fish processing. In 1987 the processing of silicon was added to the list of significant manufacturing activities in the south.

The main manufacturing activities in the north include aluminium production, manufacture of ferro silicon and ferro-manganese alloys, wood-chip production, timber processing and textile production. On the north-west manufacturing activity is dominated by forest based industries, comprising mainly paper, sawn timber, and plywood and veneer manufacture. Other important manufacturing activity in this region includes vegetable processing, cement production, milk processing for cheese and butter, manufacture of titanium pigments for use in paint and enamel, and some textile production.

16.6 GEOGRAPHY OF MANUFACTURING, TASMANIA (%), 1985

Variable	South	North	North-West
Population	47.4	27.7	24.8
Establishments	39.1	34.7	26.1
Employment	39.5	32.1	28.4
Value added	41.6	28.6	29.8
Value added per head	\$1 840	\$2 168	\$2 524

16.2 REFERENCES

ABS Publications Produced by the Tasmanian Office:

Census of Manufacturing Establishments, Summary of Operations by Industry Class, Tasmania (8201.6), annual.

Census of Manufacturing Establishments, Details of Operations and Small Area Statistics, Tasmania (8202.6), annual.

ABS Publications Produced by Central Office, Canberra:

Census of Manufacturing Establishments: Summary of Operations by Industry Sub-division, (Preliminary) Australia (8201.0), annual.

Manufacturing Establishments: Summary of Operations by Industry Class, Australia (8202.0), annual.

Manufacturing Commodities: Principal Materials Used, Australia, (8210.0), irregular.

Production Statistics, Australia (Preliminary) (8301.0), monthly.

Manufacturing Commodities: Principal Articles Produced, Australia (8303.0), annual.

Production Bulletins (monthly), Australia —

No. 1: Electrical Appliances (8357.0).

No. 2: Clothing and Footwear (8358.0).

No. 3: Food, Drink and Tobacco (8359.0).

No. 4: Textiles, Bedding and Floor Coverings (8360.0).

No. 5: Building Materials and Fittings (8361.0).

No. 6: Chemicals and By-Products (8362.0).

No. 7: Motor Vehicles, Parts and Accessories (8363.0).

No. 8: Miscellaneous Products (8364.0).

Manufacturing Commodities: Selected Principal Articles Produced, Australia (Preliminary) (8365.0), annual.

Other Publications:

Department of Industrial Development, *Tasmanian Manufacturers Directory*, Tasmanian Government Printer, Hobart, biennial.