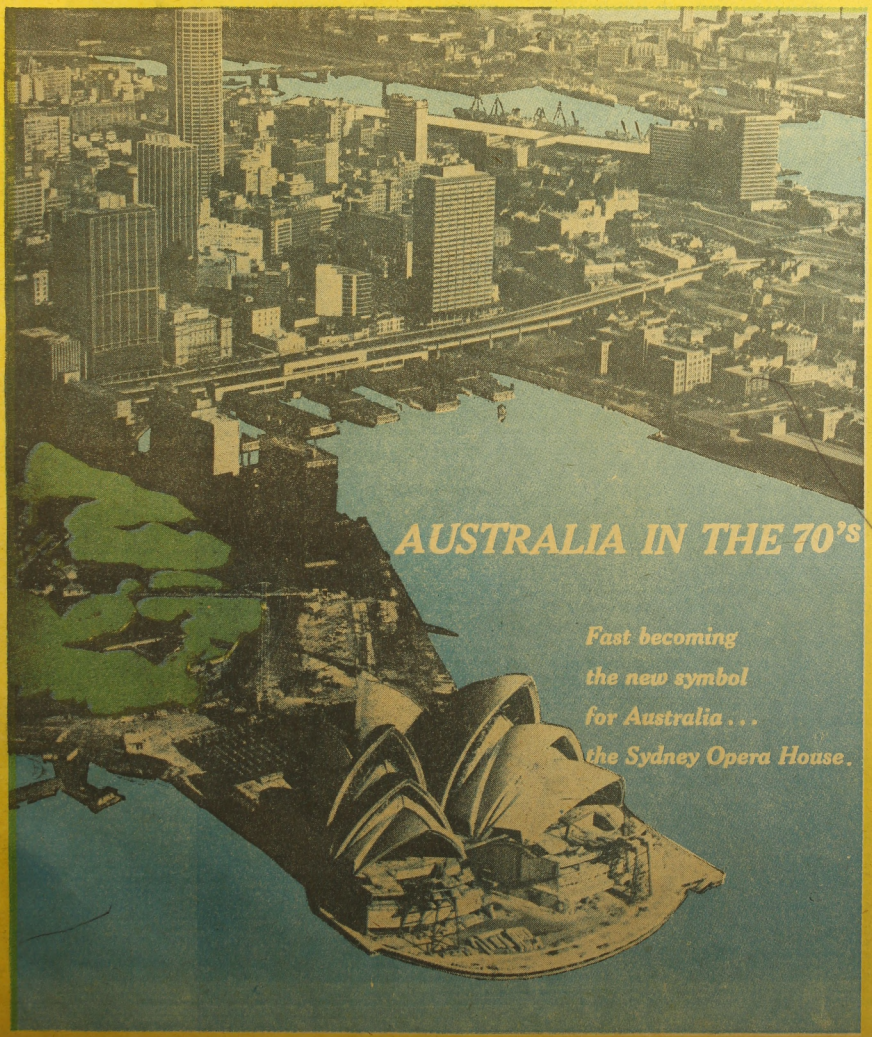
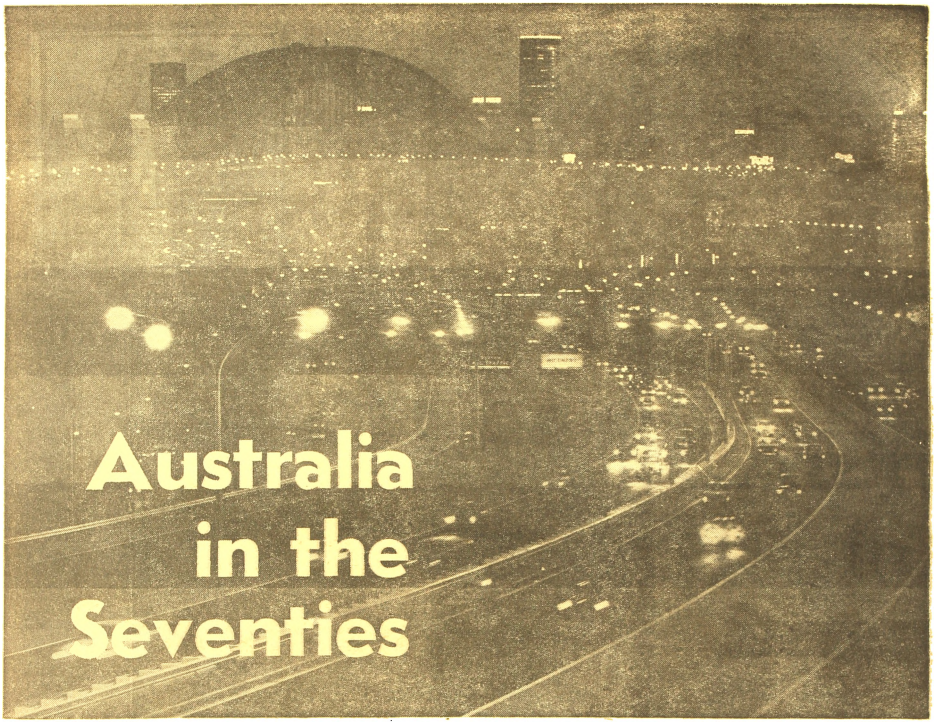
The Philippines Herald
NOVEMBER 12, 1970

AUSTRALIAN SUPPLEMENT





Australia in the Seventies

Sydney by night — with the blaze and bustle of Warringah Expressway

"The Lucky Country" they called Australia in the Sixties. What will the catch-phrase be in the Seventies?

The island continent has just completed a decade of economic growth, unprecedented in this century, and trends indicate that Australia's high growth rate of the Sixties could accelerate in the Seventies.

The structure of the Australian economy is changing more drastically and more rapidly than the economies of most other countries in the world.

The traditional picture of Australia as a land of sprawling sheep stations, waving wheat crops and bounding kangaroos is not so much inaccurate today as it is unrepresentative.

Australia is still one of the great agricultural producing and exporting nations of the world — but today she is much more than this. The country is one of the fastest expanding industrial nations in the Asian region — and one of the newest and richest sources of mineral deposits in the world.

The dominating feature of the Australian economy in the Seventies will be minerals, as it was in the late Sixties. All past projections of export earning from minerals and metals have fallen far below actual sales and the latest estimate, based on existing contracts, is close to $A2,000 million annually by the mid-1970's. In 1968/69 it was $A759 million. This year it will hit the $A1,000 million mark — $A200 million above the figure predicted two years ago to be reached in 1972.

What is more remarkable is that less than a decade ago Australia had an embargo on the export of iron ore because of the scarcity of known reserves. Now, these are officially estimated at 20,000 million tons. However, Mr. Russell Madigan, managing director of Hamersley Iron Pty. Ltd., one of Australia's largest iron ore mining companies, estimates that the Pilbara area of Western Australia alone contains about 100 million million tons of ore — enough to meet world demands for 140,000 years!

But it is not only the "mountains of iron" that are adding muscle to the economy. Australia has the world's largest reserves of bauxite (the raw material for aluminium;) she is the world's largest producer of lead, and third in zinc output, outside the Soviet bloc; she ranks first in the production of rutile (used to make the heat-resistant metal for moon rockets) and zircon; she has large deposits of coal, nickel, phosphates, manganese, natural gas and petroleum.

The bulk of the minerals now exported are in the raw state — ore as opposed to metal — and there is concern in Australia that she should not become one giant quarry for the rest of the world.

A few companies are already processing ore into metal, others are erecting processing plants while others are investigating the possibilities.

Each ton of iron ore, or bauxite, or copper, or nickel concentrates processed to one stage further multiplies its earnings many times over. Processed even further to refined metal, export earnings would be even greater.

The Sixties saw the beginning of the mineral bonanza. The Seventies should see the growing trend towards the establishment of fully integrated processing plants for this new-found wealth.

Although overshadowed by mineral development in the last decade, Australia's manufacturing industries made rapid progress in the Sixties and today its scope ranges from household appliances to factory machinery, from base metals to precision instruments, from heavy engineering equipment to complex electronic devices.

This sector of the economy now directly employs 28 percent of the work-force and its output contributes a similar percentage to the Gross National Product (G.N.P.). In the past 10 years annual production has more than doubled to $A7,000 million.

An indication of the maturity of the country's manufacturing capabilities was the design and building in Australia of the racing car engines that powered Jack Brabham to victory in the Formula One World Championships two years running — in 1966 and 1967. Last year Peter Revson drove to first place in the Indianapolis "200" and fifth place in the Indianapolis "500" with the help of his Australian designed and built engine.

Certain characteristics of the Australian manufacturing industry are epitomized by what has happened in the petrochemical field. This industry is less than 10 years old, yet Australia is already virtually self-sufficient.

This growing self-sufficiency in various fields is likely to continue in the Seventies and in one field, petroleum, it is estimated that Australia will be producing 70 percent of its requirements by the end of this decade.

A recent observation by a German industrialist after visiting

Message of the Trade Commissioner

I am pleased to take this opportunity to let you know about current trading activities between the Philippines and Australia and what steps are currently being done to further our mutual efforts to develop reciprocal trade.

Next week, a Tasmanian government trade mission will visit Manila to explore the possibilities for joint venture projects in the fields of agriculture, dairying and cattle raising — they will be here for three days.

From December 2nd to 5th, the Chemical Industries Trade Mission, about which I have already announced the details, will be in Manila.

Detailed plans for these two missions are now well advanced. However, businessmen wishing to meet with members of either of these 2 missions may still do so if they will contact the Trade Commission without further delay.

It is most heartening to give special mention to the Philippine Trade Mission, which is being sponsored and organized by the Chamber of Commerce of the Philippines and which will visit Australia from the 30th of November until the 14th of December. It is to be hoped that this will be the forerunner of many more selling missions from the Philippines, not only to Australia, but to other countries with whom you trade.

In the new year, the Trade Commission will be moving to its new location in the China Bank Building in Makati. The new offices and facilities will enable us further to cope with the increasing demands in the commercial and economic fields. The new location will also make possible the installation of a permanent display area for the Australian products which are currently available in the Philippines.

I hope that this special supplement of the **Philippines Herald** will help lead to a closer understanding of the efforts Australia is making towards the economic, industrial and agricultural development of the Philippines, and Australia's continued confidence in the future of your great nation. — **F. W. GLUTH**, Australian Government Trade Commissioner.

F. W. GLUTH

Australia sums up present progress: "Australia is on the move; big things are happening both in raw materials and in industrialization."

Although agriculture appears to have been relegated to third place in this push towards creating an urbanized industrial society, this is illusory. Agriculture has been, and will continue to play a very important part in the economy. In fact, the sale of Australia's farm products overseas financed the country's rapid industrialization in the Sixties. This sector still provides just under 60 percent of the country's foreign exchange and this reliance on the output of the Australian farmer will continue in the Seventies.

Last year rural production contributed 9 percent to the G.N.P. with a gross value of around $A4,000 million, nearly half of which was exported.

Even with the vagaries of world prices for primary produce, more often down than up, and varying seasonal conditions including droughts and bushfires, Australian farmers increased their volume of rural output by 45 per cent in the Sixties. Paradoxically, workers have been gradually drifting away from the farms to the cities until today only eight percent of the workforce is on the land, compared with 11 percent at the beginning of the Sixties.

Increased mechanization has been the farmers' answer to this shrinking labour force. The use of Australian cultivators, seeding and planting machinery has increased rapidly. In 10 years the number of tractors on rural holdings rose from 225,000 to 325,000. More than 90 percent of wheat is now handled by bulk methods.

This drift of the land is expected to continue in the Seventies which will see the machine together with agricultural science increasing output as well as opening up new lands for pastoral and agricultural development.

But what will all this mean to the average Australian in the Seventies?

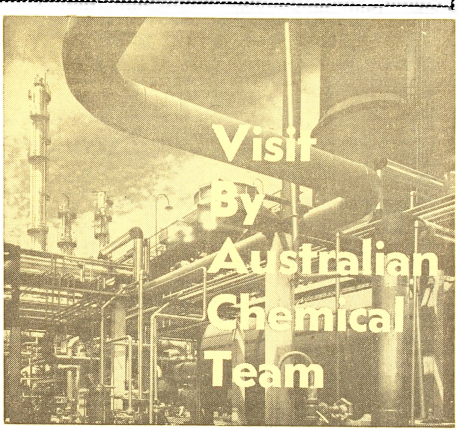
According to one of Australia's leading banks, in a projection into the future based on current trends, Australians will become even more motorized than they are now. From the one car for every three persons in the country now, the "two-car" family will become more commonplace in the Seventies. With it will come the "two-house" family — the family residence close to work and school for the weekdays, and the cottage by the sea, in the country or in the mountains for the weekend and holidays.

In the consumer field, it was refrigerators, transistor radios and television sets in the Sixties. In the Seventies there is likely to be a wider acceptance of food freezers and air conditioners. But the main impact (in terms of spending) will be the introduction of colour television to Australia in the Seventies.

One interesting aspect of the bank's projection for the Seventies is the changing buying habits of Australians. Spending on durable goods, such as cars, furniture, electrical goods, hardware etc., is expected to rise from an average growth rate of 5.4 percent a year during the Sixties to 9.2 percent in the Seventies. On the other hand spending on non-durables, such as food and clothing is expected to continue its downward path. Although actual spending grew slowly in the Sixties it has not been keeping pace with the G.N.P. and only comprised 24 per cent last year. It is expected to drop to less than 30 percent of the G.N.P. by the end of the Seventies.

Overall the Australian economy in the Sixties took time to get moving because of the 1961 recession and then expansion was curtailed in the mid-sixties by drought. However, in money terms the country's G.N.P. rose at an average yearly rate of eight percent. The increase could be as high as 9.5 per cent this decade. Prices will probably account for up to 3.5 percent of this increase, resulting in an average annual real rate of growth of around six percent, compared with 4.9 percent in the Sixties.

By international standards the Australian economy appears to be in a state of rude health. True, there are signs of strain now emerging, but when one considers all factors these stresses are of a transitory nature — mere twinges in the joints of a growing youth who is rapidly approaching adulthood.



An $A11 million olefines plant operated at Botany (Sydney) by ICIANZ Ltd. In the year 1969-70 the Australian chemical industry exported products worth more than $A136 million.

A 16-member Chemical Industries Trade Mission from Australia now touring South East Asia, will reach Manila on December 2.

Organized by the Australian Department of Trade and Industry, with the support of the Australian Chemical Industry Council and the National Council of Chemical and Pharmaceutical Industries, the mission comprises representatives of companies making and exporting a vast range of industrial and other chemicals.

Headed by Mr. W. S. Duffield, the mission follows previous ventures in 1965 and 1967. Mr. Duffield was also the leader of the 1967 mission.

Other stops on the South East Asian tour are Djakarta, Singapore, Taipei, Seoul, Tokyo, and Hongkong.

The Australian chemical industry, which in 1969-70 registered exports worth $A136 million, plans to increase overseas outlets during the 1970s to help accommodate an expected doubling of production.

At present, a quarter of Australia's chemicals exports goes to Asia.

The industry employs more than 55,000 people and produces such diverse products as alkalis, acids, heavy organic chemicals, petrochemicals, explosives, pharmaceuticals, cosmetics, polymers, fibres, paints, plastics and fertilizers.

It exports organic and inorganic chemicals to 48 overseas countries including Britain, Fiji, France, Hongkong, India, Italy, Kenya,

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Australian Chemical Team Visit

(Continued from page 3)

New Zealand, Philippines, Africa, Spain, Sweden and the U.S.A.

Export sales growth enables Australia to operate chemicals plants closer in size to overseas competitors.

Domestic sales of chemical products in Australia last year exceeded $A687 million. More than $A70 million of the $A109 million worth of raw materials used last year by companies who are members of the Australian Chemical Industry Council were of Australian origin.

With the use of discoveries in Australia of oil and natural gas, which provide feedstock for the production of petrochemicals, the percentage of Australian raw materials used will increase to more than 75 per cent.

The growing pattern of production has resulted in an inter-relationship being built between major Australian chemical producers such as the Altona petrochemical complex near Melbourne in Victoria, and the Shell Chemical-ICI-ANZ ventures in New South Wales.

Ethane from Bass Strait in southern-eastern Australia will be feedstock for a 100,000 tons a year extension to ethylene capacity at the Altona petrochemical complex.

Mr. John Gorton, the Australian Prime Minister, in September

WILLIAM DUFFIELD

this year opened a $A33 million oil and gas fractionation plant built by The Broken Propriety Co. Ltd. and Esso Exploration and Production Australia Inc. at Long Island Point, Westernport Bay, in the southern State of Victoria.

The plant, about 45 miles from Melbourne, separates and stores natural gas liquids transported by a 118-mile (190-kilometer) buried 10-inch (25.4-centimetre) pipeline from its $A47 million treatment plant at Longford, in Gippsland.

Crude oil and natural gas produced from the offshore fields in the Gippsland basin is transported to the Longford plant by a pipeline network of submarine and onshore pipelines.

Adjacent to the new plant at Long Island Point are storage facilities for crude oil transported by a 28-inch (71.1 centimetre) pipeline from Gippsland.

The Long Island Point plant is designed to produce initially a total of 17,000 barrels a day of propane and butane, as well as 6,000 barrels a day of ethane, with planned expansion to 4,000 barrels a day of raw product feed.

Chemical plants, producing new locally made products and saving millions in dollars in foreign exchange, enter the manufacturing fields every year.

Pointing to the growing strength of the chemical industry in Australia, a large number of plant extensions and new projects were either started or completed last year.

These expansions have enabled new or expanded production of cumene phenol, formaldehyde and UF syrup, water-extended polyyester, polypropylene, BR latex and epoxy, high density PE, vinyl acetate monomer, isocyanates and polyols, polystyrene, polyolefines, ethylene, vinyl chloride monomer and fibre glass.

New plant under construction at the end of 1969 was valued at $A22 million — more than double that under construction a year previously. Projects underway this year include:

- A polypropylene plant at Clyde, Sydney, built by Shell Chemical (Aust.) Pty. Ltd., which is scheduled to come on stream late in 1970.
- A new plant, also scheduled for completion late this year, to increase the facilities for production of vinyl acetate monomer and acetaldehyde, built by CSR Chemicals Pty. Ltd. at Rhodes, Sydney, at a cost of $A6 million.
- Australian Fibre Glass Pty. Ltd. have completed a three-stage expansion of facilities costing $A4 million.
- A $A12 million plant will be erected for Bayer Leverkusen Ltd., at Kooranang Island, Newcastle, NSW, to manufacture isocyanates, particularly TDI and MDI, as raw materials for polyurethane rigid and semi-rigid foams.
- A new plant is planned and will be completed during 1971 for the manufacture of propylene glycol by Dow Chemical Australia Ltd., as base material for the production of PPG and the Voronal range of polynols for the urethane market. Dow also was expanding its production facilities for styrene monomer this year.
- Primal Chemicals Pty. Ltd. has built a new plant adjacent to the existing plant at Point Henry, Geelong, Victoria, to produce base materials for the expansion of the manufacturing range.
- Monsanto Australia Ltd. completed this year new polystyrene facilities at West Footscray, Victoria.
- The expansion of the Hoechst Chemical Australia Ltd., high density polyolefines plant at Altona, Victoria, from 12,000 to 18,000 tons was completed in the middle of last year and is now in full production. A further expansion is now in an advanced state of planning, and products from these facilities should be on the market by the end of 1971.
- To meet the continually expanding market for PVC, a further extension of the ICIANZ Ltd. vinyl chloride monomer plant has been made at Botany, NSW.

The Australian chemical industry spent close to $A4.5 million on research and development in 1969, a 19 per cent increase on the previous year.

Recent figures released by the Australian Chemical Industry Council indicated that exports of industrial chemicals and synthetic resins last year by Council members exceeded $A16 million. This represented an increase of some 27.2 per cent compared with exports in 1968.

Domestic sales of industrial chemicals and synthetic resins increased by 12 per cent on the previous year, gaining a record $A271 million.

Australian Consultants Offer Their Services

The advisory and supervisory services of Australian professional consultants today are being used all round the world on projects in areas as widely separated as South East Asia, Africa, South America and the Middle East.

Urban and regional planners, surveyors and quantity surveyors, engineers, architects and agricultural consultants have for the past five years contributed substantially to developmental changes in these areas.

This Australian survey party moves through some rugged terrain in Queensland to help set up a microwave link.

Significant works includes highways in Thailand and Hong Kong, wharves in the New Hebrides, hospitals in Irak and Borneo, and water supply installations in Indonesia and Vietnam.

Australian agricultural consultants are working in Kenya, Thailand and South America; a feasibility study has been completed for the development of a beef industry in Western Samoa. In South-East Asia an Australian group is participating in a regional transport study; mining consultants are working in a number of countries; and management and industrial consultants are advising on the development of industries in South-East Asia.

In overcoming the unique problems of her environment, Australia has developed skills and techniques which have particular applications to countries now developing their own resources and expanding their industries. It is in this area of activity that Australian professional consultants are making a significant contribution.

Two years ago the Australian Professional Consultant's Council (APCC) was formed to advise the Government and the professions on the export of these services, and also to help harness Australian consultancy resources for the tasks at hand.

Within the structure of the APCC are independent, private enterprise companies which do not have a vested interest in any one method of construction or type of contract. This means they are free to offer their clients objective opinions as to the most suitable and economical way of going about a job.

Because they are independent, they can also negotiate and administer contracts and invite competitive tenders on behalf of their clients.

The council has 150 member firms, with an immediate staff availability of 4,000. The number of poly-professional groups embracing all the planning and construction skills is increasing daily. These groups are able to advise on any survey and construction project, within or outside Australia.

THE ENGINEER

Australia's consulting engineers offer services in all of the engineering disciplines — civil, mechanical, electrical, structural, chemical, mining and transportation.

Within these broad categories many consultants are operating in such specialized fields as soil mechanics, foundation engineering, air conditioning, hydro-electric, water supply, sewerage, and bulk material handling. In addition, there is an increasing demand for engineering services in planning and related economic matters.

Of all the developments which have taken place in Australia in recent years mining and the discovery

of oil have captured the public imagination to the greatest extent. All of the major firms in these fields have commissioned consulting engineers.

The vast Snowy Mountains hydro-electric scheme turned the flow of rivers to get greater use from them for both farm production and power generation. Australian engineers who worked on this and other large development projects are now advising on similar overseas undertakings financed by the United Nations Development Programme, The World Bank or the Asian Development Bank.

ARCHITECTS

Each year Australia spends more than $A1000 million on building. Architecture has developed to the stage where the largest and most complicated buildings are being designed and constructed.

The country's 4000 architects design for the tropical conditions of the north, the hot dry inland regions, and the snow country of the southern alps, as well as for the more temperate areas.

Because it is a big country with development projects often in remote areas, architects are accustomed to carrying out work at considerable distances from their offices. Australian architects have already undertaken work in other countries, including the Middle East, Hong Kong, Malaysia, Fiji, Singapore, Thailand, New Zealand and New Guinea.

The Australian architect offers his clients his skill in analyzing their requirements and thus in establishing an exact brief, and then his talent in designing the complete building which will fully satisfy those requirements. He offers his experience of building materials and methods, his skill in preparing the contract documents, and his integrity in administering the building contract.

THE TOWN PLANNER

The growth of the city and regional planning profession has been very rapid in Australia during the past 20 years. Effective town planning legislation now exists throughout the country and plans have been prepared for all metropolitan cities and for many smaller cities and towns.

The country's rapid economic development has provided many opportunities for Australian planners to develop their skills in a variety of fields, and a growing group of consultant firms is working in the profession.

The projects they undertake range from comprehensive schemes of redevelopment in the central areas of large cities, through the design of residential and industrial estates and the preparation of statutory planning schemes, to the planning of new towns.

Their work is not confined to the physical aspects of these projects, but begins with initial feasibility studies and continues through to encompass the problems of finance and administration.

THE QUANTITY SURVEYOR

Quantity surveying in Australia is a well-established profession and quantity surveyors are integral members of the building design and construction team.

Training of quantity surveyors is available in universities and technical colleges.

Quantity surveyors are building economists who, by virtue of their specialist training and experience, have developed a full knowledge of construction economics which enable their services to be used in all form of buildings, civil engineering works, land use generally, and town planning.

They provide advice on probable project costs. Cost planning and analysis is then developed, enabling a budget to be established and schemes designed and erected within an approved expenditure.

Advice is given on tendering procedures and contractual arrangements, and bills of quantities are prepared in forms most suited to particular circumstances.

THE SURVEYOR

Australian surveyors are independent professionals who provide services of the highest precision.

Geodetic surveys are used for scientific purposes and civil engineering projects, using electronic measuring equipment. Engineering and topographic surveys are used for civil engineering, mining, forestry, and town planning mostly using vertical aerial photography.

A large area of development where the surveyor is an integral member of a group of professional consultants is in ground surveying related to civil engineering. Multi-storey buildings in particular exercise his skill throughout the course of the contract because of the high precision required in checking verticality and

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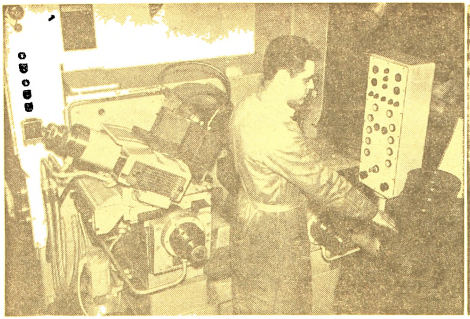

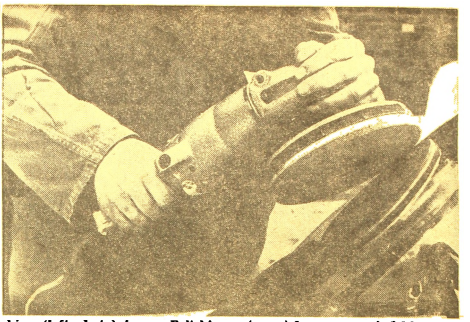

The Australian automotive spare parts and components industry has grown quickly in recent years and development has been such that exports are made to more than 80 countries. Highly efficient tooling is essential and the machine (left photo) increases the production in the turning of clutch pressure plates by performing the turning in one operation instead of two. Polishing out scratches on car windshields is made easy with special pads and powders designed by an Australian glass worker (right).

Australia Can Easily Supply Parts Of Any Car

Australia's development as one of the most highly motorized countries of the world probably springs from three main causes:—

- The huge area of its Continent which makes virtually impossible a closely knit public transport system;
- Strong competition between locally-based and international companies;
- The spectacular success of Australia's own car, the Holden, first produced in 1948 and now represented by a third of all the cars on Australian roads.

The country's automotive industry started in the 1920's and today has developed into a highly advanced multi-million dollar business. The car has become part of the Australian way of life and there is currently one vehicle for every three persons.

Allied with the demand for vehicles has been spectacular growth of the automotive components and spare parts industry. Each year it produces about half a million different products worth in the order of more than $500 million.

The Australian parts industry has become a long way since 1922-23 when there were only 172,745 vehicles on register and most parts were imported.

By the mid-1960's the motor vehicle industry had lifted its purchases of material and components to over $A370 million annually.

In volume terms this included 248,000 tons of steel, 11 million forgings, 9,285,000 sq. ft. of safety glass, 2,858,000 gallons of paint products, 72 million sq. ft. of upholstery material, 84 million pieces of rubber components and 1,993,994 tyres.

The industry comprises at least 4000 supplies with almost 200 major manufacturers and at the end of 1967 employed more than 20,000 people.

Estimates show that Australians spend over $A2,200 million annually on buying, operating and maintaining their vehicles. Not only do they constitute a highly sophisticated market but the extremely adverse conditions of some Australian roads combined with climatic conditions and service under which vehicles operate, impose quality requirements higher even than those for United States and Europe. A product to win acceptance in Australia, has to be tough, reliable and top quality.

Exports have played an increasingly important part in the success of the industry. Australian-made components are exported to more than 90 countries in Europe, North America, Africa, South East Asia, New Zealand and the Pacific Islands.

In growing volume, exports of components and spare parts include such items as transmissions, engines, electrical systems, fly wheel gears and brake and clutch parts.

There is also a whole range of accesories exported. They include garage equipment such as hoists, lubrication equipment, jacks, air and water hose reels, tyre gauges, external sun visors, heaters and demisters, windscreen washers and safety belts.

The Australian automotive components and spare parts industry occupies a unique position in the world. It actually makes parts for cars that are never seen on Australian roads.

It is all part of its flourishing export business with the industry supplying parts for cars which are popular in overseas countries. In many cases the industry has had to develop specialized machine tools and techniques to meet the overseas demand.

One of the industry's leaders, a Melbourne based company (a) has grown from humble beginnings in the early 1920's as a one-man engine re-conditioning business to an automotive giant employing nearly 12,000 people.

The firm exports to 107 countries and has branches in at least seven—Canada, Hongkong, England, New Zealand, Singapore, Switzerland and the United States of America.

Its products, which range from pistons, main bearings, brake parts

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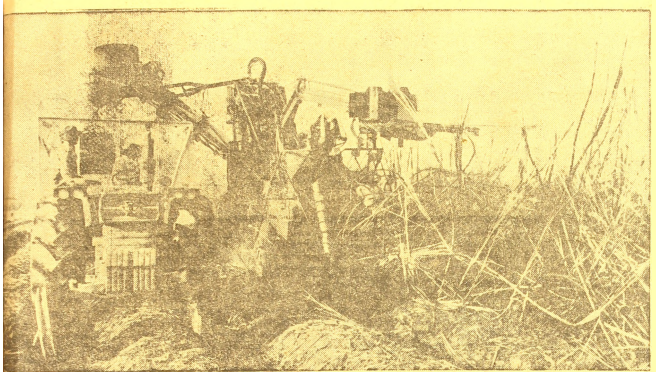
More than two million pistons are manufactured in automotive spare parts and components factories in Australia. An operator is supervising one of the finishing stages in piston production.



MF7077

MF201 working in Jamaica. The harvester is shown operating in a crop never before cut by a machine. The banks are 18 inches high. Output averaged 120 tons per day.

Success Stories

Read about some of the performances that prove the superiority and reliability of the MF201 Cane Harvester

The MF201 self-propelled cane harvester is an "estate-sized" machine that has clearly demonstrated its remarkably high output in a wide variety of crop conditions. For instance, in San Pedro, Mexico this year, an MF201 averaged over 200 tons per day in fields never previously cut by a machine. In Jamaica, another MF201 averaged 120 tons per day in a field of short rows, numerous cross drains and a litter of stones, wire and posts on the surface.

In 10½ weeks, in Madagascar, another MF 201 cut 20,000 tons at an average of up to 450 tons per day for an estimated cost of 80 cents (U.S.) per metric ton. In every export area in which the MF 201 has worked, its acceptance has been such, that repeat orders for the machine have followed. And in Australian canefields, comparative performance figures show that at its introduction in 1969, the MF201 averaged 50 per cent. more output than all other Australian machines. In a competitive trial with three other machines, harvesting heavy 2-year cane, the MF201 cut 51 per cent. of the total crop — more than the others combined!

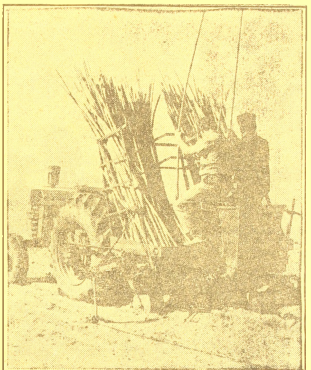
Further proof of its success is shown by grower preference in the big cane (60 to 90 tons per acre), irrigated crop areas of Queensland. There the MF201 outsells all others three to one. Contractors show their preference for it too, by a similar majority and there is a good reason for this when you consider that on contract work, the machine has consistently cut 200 tons in 4 hours, day after day, with complete reliability.

The MF201 has put up convincing proof of its output and ability to handle crops in any condition. It will harvest upright, sprawled, down or tangled stands and takes all the cane leaving the barest minimum on the ground.

With regard to cleaning ability, the MF201 has proven itself best by test! Exclusive 6-stage cleaning cycle handles all crop conditions to return the maximum of clean, chopped cane. Operators will like the handling qualities of the MF201 too. Its hydrostatic transmission with infinitely variable speeds is a revelation in speed control and in addition, it provides positive braking.

There's a lot more about the MF201 to interest you, so why not take the first step towards finding out the full story by contacting your local Massey-Ferguson distributor or writing direct to: Massey-Ferguson (Export) Limited, Banner Lane, Coventry, U.K.

MASSEY-FERGUSON



This MF20 saves time, cuts costs and does a better job of planting cane setts.

Here are 7 reasons why.

1. Does the complete planting operation — setts are cut, dipped in fungicide solution, positioned in furrow, and covered.
2. Setts are "force-fed" into the planting furrow — an exclusive feature.
3. Setts planted overlap, butt-to-butt, or spaced.
4. Soil engaging parts feature extremely rugged construction to handle the roughest conditions.
5. Labour saving is between 50 per cent. and 70 per cent.
6. One or two-man operated models available with capacities of 4 to 5• and 8 to 10• acres per day. (1.62 to 2.02• and 3.24 to 4.05• Hectares.)
7. The MF20 offers you the ideal method of planting a cane crop with mechanical harvesting in view.

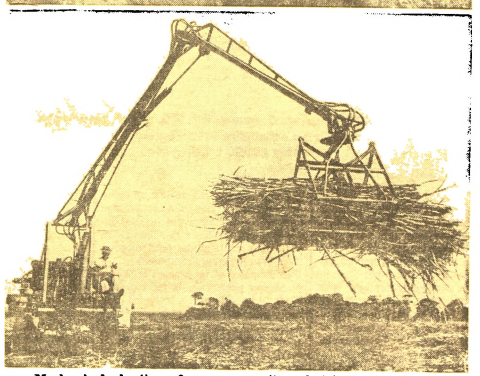
For complete details, contact your local Massey-Ferguson distributor or write direct to: Massey-Ferguson (Export) Limited, Banner Lane, Coventry, U.K.

MASSEY-FERGUSON

AUSTRALIAN CANE-FARMING MECHANIZATION

Australian production of sugarcane reached a record 18,413,000 tons in 1968/69, an increase of 1.6 million tons over the previous best in 1967, and double the output of 1961.

Handling of this ever-increasing annual crop would not have been possible without the remarkable progress in mechanical harvesting and loading made throughout the 1960's.



Mechanical planting of sugar cane (top photo)— the machine cuts the cane stalks into short lengths and buries them in furrows. The machine also buries insecticide to protect the cuttings and fertilizer to help cane grow. Lower photo shows mechanical handling in Bundaberg cane field, Queensland.

Australian canefarmers and agricultural engineers between them have developed such a variety of implements and machines that today the entire cycle from planting to loading the cut cane is virtually fully-mechanized.

This high degree of mechanization on the farm helps account for the exceptionally high Australian average yield of one ton of raw sugar to every seven tons of cane (overseas average is one ton of sugar for every ten tons of cane)

Australian has 8485 cane-farms, 34 mills, six bulk-handling sugar ports and six refineries — the achievement of 105 years' work

Season	Total Crop Harvested m. tons	Mech. Harvested m. tons	% of total crop
1961	9.02	0.48	5.4
1963	11.50	1.55	13.4
1965	13.55	5.30	39.1
1967	15.72	9.20	58.6
1968	17.41	12.47	71.6

The average cane-farm is about 85 acres. Each cane-farmer has available to him the following range of equipment, which he either owns or hires depending on the size of his crop:—

- Standard farming implements, including tractors, ripper, disc harrow, full set of toolbar equipment, tiller, trash rake, drain plough, breakpusher, root rake, grubber, fertilizer applicator, cultivator;
- Specialized cane-farming equipment: disc ratooner, stubble shaver, planter, harvester, loader.

Disc Ratooner:
This implement has individually-adjustable gangs of discs permitting an infinite variety of settings to allow a wide range of operations in the ratooning of cane crops.

Stubble Shaver:
Stubble-shaving, recognized for many years as the best method of putting cane land into order after harvesting, is done by means of special implements — available either as power takeoff units or ground wheel drive units — designed to cut off stubble and force ratoon shoots to develop with deeper eyes, ensuring heavier crops

Cane Planter:
Cane planters have been designed to carry out the complete planting of cane in one operation. They can be either dip-type or spray-type, single-row or double-row. An Australian invention, the cane planter digs its own furrow, cuts the planting stalk into two or three-eye setts, sprays each sett with fungicide then plants it, fertilizes it and covers it up. It is a two-man operation, with one driving the tractor and his partner attending to the planter. A single-row planter can do 3½ to 4 acres per day.

Harvester:
The Australian-designed and made mechanical harvester is the secret of the ever-increasing efficiency of Australian cane-growing. Its wholehearted acceptance by cane-growers throughout the cane-belt (a 1300-mile stretch of the north-eastern seaboard from northern NSW to North Queensland) is revealed by the figures:—

Over 12,473,000 tons of cane were mechanically harvested in Queensland (which produces more than 95% of Australia's total crop) in 1968, representing 71.6% of the crop.

There were 3.27 million more tons mechanically harvested in 1968 than in 1967, an increase of 13%. In 1969 it is estimated that more than 80% of the crop will be mechanically harvested. The rate of progress in mechanical harvesting can be gauged from the table:

The number of mechanical harvesters in use rose from 109 in 1961 to 1622 in 1968 and will reach 1819 in 1969, on present indications.

There are two types of mechanical harvester:
(a) *Chopper type:*

This machine gathers the crop, either standing or lodged, removes the tops, cuts the cane off at ground level, conveys the cane up to and through a set of chopping knives, where it is chopped into billets of uniform length (12 to 14 inches) and delivers these billets, cleaned of dirt and trash, into a transport bin or truck for immediate dispatch to the mill.

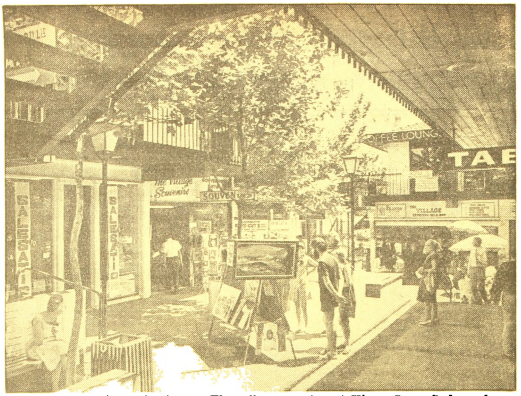
The harvester is mounted on a tractor and is driven by the tractor PTO (power take-off) shaft. In normal conditions a rubber-tyred tractor of at least 50 PTO horsepower is required.

The standard chopper harvester of the make most commonly used in Australia (commanding 53% of the market in 1968) consists of a heavy duty main frame which carries the harvesting system attached to a massive heavy duty tractor subframe.

The harvester is raised and lowered by twin hydraulic rams directly connected to the tractor hydraulic system, and is carried on a heavy duty rear axle extension. The hydraulically-activated, independently-controlled topper unit, which is adjustable for tilt, is mounted on the harvester main frame and is fully controlled from the operator's seat.

The cane is gathered into the specially-designed mouth by two hydraulically-driven auger-type crop-lifters. These rotating crop-lifters raise and gather lodged cane into the mouth. For straight-standing cane the crop-lifters can be turned off. Special floating shoes with adjustable points are fitted at the lower ends of the crop-lifters. These shoes ensure that all cane stalks being harvested go

(Continued on page 13)



Kings Cross Village Centre — The village centre at Kings Cross Sydney, has won the Civic Design Award of the Royal Australian Institute of Architects for two-level design. The architects Devine, Enby & Stowe of Nth. Sydney, set out to capture the unique character of Kings Cross.

Australian Consultants Offer Their Services

(Continued from page 7)

in using the modern instruments developed for this purpose.

THE AGRICULTURAL CONSULTANT

Offering a wide range of skills acquired in an environment which both physically and financially has demanded efficienty to survive, agricultural consultants generally have a university degree in agricultural science, and have also specialized in the wide range of associated skills which are necessary to build a strong rural economy.

Consultancy services in: finance and management, soil conservation and land use, crop husbandry, animal husbandry, pasture development and management, and the use of irrigation resources are available. Allied to this expertise is the provision of agro-economic studies.

Institutional bodies of world repute provide resources for the planning, execution and operation of such large scale projects as river basin development. An Australian Organization has been selected by the Food and Agriculture Organization to undertake such a major project in Ethiopia and has already begun the task.

Australian agricultural consultants have been active overseas, particularly as advisers to United Nations Development Programme projects in Africa, Asia and South America.

Additional information and literature on Australia's consultancy services are available from Australian Trade Commissioners, High Commission or Embassies in most countries.

Supply Parts

(Continued from page 8)

to clutches, propeller shafts and gaskets, are fitted as original equipment to virtually every popular car made in Australia.

The company also makes garage equipment and machinery for reconditioning engines. Its garage machinery ranges from wheel balancing equipment to battery chargers and precision tools.

As well as being one of the largest suppliers of replacement parts the firm makes a range of accessories including rear vision mirrors, reflectors, safety belts, luggage racks and car fans.

The world's largest tyre manufacturer (b) also traces its origins in Australia back a long time — 43 years. It has now grown to a vast complex making not only tyres but fan belts, brake linings, batteries and shock absorbers. It has two factories near Sydney and close to Melbourne, employing a total of 2,700 people.

The firm exports tyres to the United States, home of the parent company. A nation-wide strike in U.S. tyre factories several years ago, forced the firm to ask its subsidiaries to ship surplus production to the U.S. The quality of the Australian-made tyres found ready acceptance and the firm has been shipping to America, at the rate of 2,000 tyres a day, ever since.

A manufacturer which invaded the Australian motor scene only 10 years ago, has had an equally successful run.

The company (c), which makes windscreen wiper arms, blades and motor air horns and mirrors started from scratch in 1959. Its products are now fitted as original equipment to nearly every Australian made car and the firm has a commanding position in New Zealand. It is also looking to the South Pacific and South East Asia to expand its markets.

Australian spare parts and accessories are fast gaining a worldwide reputation for quality, reliability and technical sophistication. The industry is confident and the keynote is on expansion both at home and overseas.

Australian Cane-Farming Mechanization

(Continued from page 10)

into the machine.

The harvesting system consists of a revolving base cutting disc, floating primary feed roller, roller conveyor system, chopping system (two knives rotating at right angles to the motion of the cane) and a slewing elevator with a six-foot grid section in the lower end which assist with removal of dirt. An extractor mounted above this grid section draws air through it at a rate of 13,000 cu. ft. per minute through the tumbling cane, to clean it. At the dropping point at the top of the elevator a heavy duty trash extractor unit, moving 320,000 cu. ft. of air per minute, removes any other loose leaf, trash, dirt etc.

This chopper harvester can handle 25,000 tons in a 25-week season. It will fill a four-ton bin in two minutes. An auxiliary power unit fitted to the machine will increase capacity considerably.

Overall length is 18 ft 6, height 15.0, width when fitted to tractor maximum 11.0 (depends on tractor), weight 3 tons 15 cwt.

(b) *Wholestalk type:*

Tractor-mounted like the chopper harvester, this machine simultaneously tops and cuts the cane at ground level, then lays it to one side flat on the ground to be picked up later by hand or, as is most likely these days, by mechanical loader.

A special "down cane pick-up" is available for handling sprawled or tangled crops. A specially-designed base cutter ensures clean ground cutting even in extremes of ridge or hollow.

Mechanical Loading:

Mechanical loading has developed to virtually the maximum possible since 1961, when just over half the crop was mechanically loaded. In 1968 98.6% of the crop was mechanically loaded.

Front-end loaders handled 56% of the crop in 1963 but have lost favor gradually and handled only 23.5% of the crop in 1968. Jib-type loaders have meanwhile steadily increased in popularity, handling 24.4% of the crop in 1968. (Chopper harvesters "loaded" the remainder of the crop).

The jib-type loader, operated by one man, is a tractor-mounted elbow-action hydraulically-operated rotatable boom grab. Slewing is effected by foot pedals, leaving the operator's hands free for boom and grab manipulation.

The rotatable grab head permits the turning of the bucket or grab to dig or pick up in the most favourable position. Operation calls for considerable manual dexterity and co-ordination of hand, foot and eye; operators acquire pride in their skill with these machines and at the annual Innisfail Sugar Festival a special contest is staged for them, in which contestants have to load and unload several tons of wholestick cane, being judged on both speed and efficiency.

This versatile machine can be equipped with special attachments for trench and channel digging, drain-cleaning, bulk-handling and other practical farm applications when not being used for cane-loading.

A large-capacity, diesel-powered, self-propelled four-wheel drive, four-wheel steer loader is also available.

In operation, the felled cane is bundled by a two-pronged attachment on the end of the tractor. With the forward motion of the tractor, the prongs slide under the cane.

As the cane piles up under the pressure, the grab is brought down to lift up the bundle. Design of the grab is such that when it is positioned over the loose bundle and the operator activates the lever closing the grab, the fingers of the grab barely skim the ground, gradually working the cane into a neat bundle inside the grab. This avoids picking up dirt and extraneous matter, which could happen if the fingers dug into the soil.

The standard loader has an overall length of 25 feet 2, width 6.3, height 13 feet, wheelbase 7 feet, weight 4 tons 15 cwt. It has a maximum reach of 19 feet, maximum lift of 17 feet, and recommended load of 1000 lbs and max. digging depth of 6 feet.

The large-capacity model is 20 feet long, 15 feet 3 high, wheelbase 8 feet, width 7 feet 3, weight 7 tons 6 cwt; recommended load of 10 cwt. at max. reach of 26 feet, or 25 cwt at 12 foot radius. Its max digging depth is 18 feet.

All these machines are most efficient in their present stage of development, but are constantly being modified and improved as farmers and manufacturers continue to strive for extra efficiency in all conditions, from bone-dry to boggy, from flat to hilly.

Best Way To Economic Development

Australia is committed to the principle that expanded trade is the best way to economic development.

In 1966, Australia took a significant international initiative with its system of tariff preferences for developing countries.

The primary objective of the system is to assist developing countries to compete in the Australian market against imports of manufactured and semi-manufactured goods from the more highly industrialized countries.

Under the system, imports of specific items from developing countries are admitted at preferential rates of duty within the limits of annual quotas.

These quotas initially totalled $A13.3 million. However, with successive extensions of the system, the total value of available quotas reached $A47.0 million on July 1st, 1970.

In addition, certain traditional, hand-made products of cottage industries are admitted duty-free without quota limitation. In general, the specified handicraft products do not directly compete against either Australian production or imports from the industrialized countries. Imports of handicraft items have risen from $A0.6 million in 1966/67 to $A2.5 million in 1969/70.

Requests for the extension of preferences to additional products may be made by any interested party.

These requests are mainly received from the Governments or prospective exporters in developing countries or from importers in Australia.

Some four months before the beginning of each quota period, invitations to apply for quota allocations are circulated in Customs and Excise Notices issued by the Australian Department of Customs and Excise. The Notices have a wide distribution among Australian importers, customs agents and all Trade Commissioner Posts overseas. At the beginning of each quota period, the Australian Department of Customs and Excise makes allocations to importers who have applied for quotas. To minimize wastage of quotas, and as a safeguard against speculation, quota holders are required to submit evidence of intention to import, and of availability. If this evidence is not provided, the allocation is cancelled and re-allocated. Applications for quota normally should be lodged prior to the commencement of the quota period. However, it has been found to date that, for many quota groups, applications have been for less than the total quota available. Consequently, late applications for these groups have been accepted and often met in full.

An important aspect — from the point of view of the potential exporter to Australia — is that quotas under the system are allocated only to importers in Australia. This overseas exporters wishing to benefit from the preferences system must first make contact with importers in Australia (or, alternatively, establish an import agency or their own importing organization in Australia to handle their products). In this respect the Associated Chambers of Commerce of Australia and Chambers of Commerce in all State capital cities are prepared to pass on to interested members any enquiries, provided clear and specific reference is made to the Australian system of tariff preferences for developing countries.

Several countries in the South East Asian area are already making use of the preferences system, including Hong Kong. Taiwan, the Philippines, Singapore, Malaysia and Indonesia, and exports to Australia under the system are expected to increase steadily as manufacturers learn more about the opportunities available.

Some of the larger imports into Australia under the system during 1969-70 from the South East Asian region were as follows:—

Brief Description	*Country of Origin*	*Value of Imports **
Chairs and lounges of wicker, cane and bamboo	Philippines	$A66,800
Twine and cordage	Philippines	6,300
Electric fans	Hongkong	85,000
Refrigerators of less than 7 cu ft. internal capacity	Singapore	58,500
Primary cells and batteries.	Hongkong	34,300
Primary cells and batteries.	Malaysia	15,800
Confectionary	Hongkong	31,800
Domestic sewing machine heads	Taiwan	17,900
Misc. sporting goods	Taiwan	29,000
Toys	Singapore	26,700
Equipment for parlor, table and funfare games	Hongkong	38,500
Hinges	Hongkong	17,300
Unworked glass, cast rolled, drawn or blown	Taiwan	82,800
Glassware (e.g. ashtrays, goblets, vases, etc.)	Taiwan	29,400
Tubes, pipes	Taiwan	48,200
Lamps, lighting fittings, etc., of base metal.	Hongkong	12,000
Other furniture.	Philippines	91,400
Handicraft products	Philippines	616,200

* *Preliminary Statistics.*

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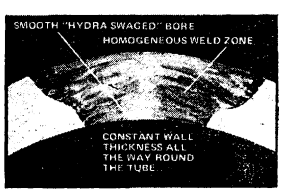

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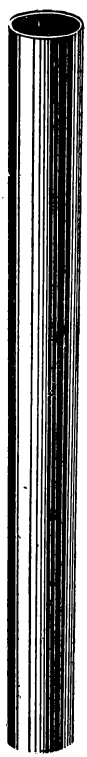

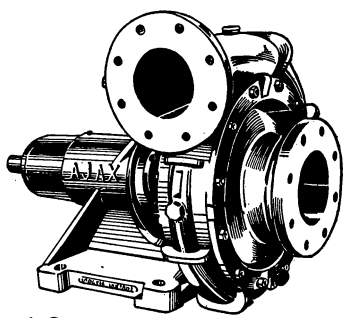

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