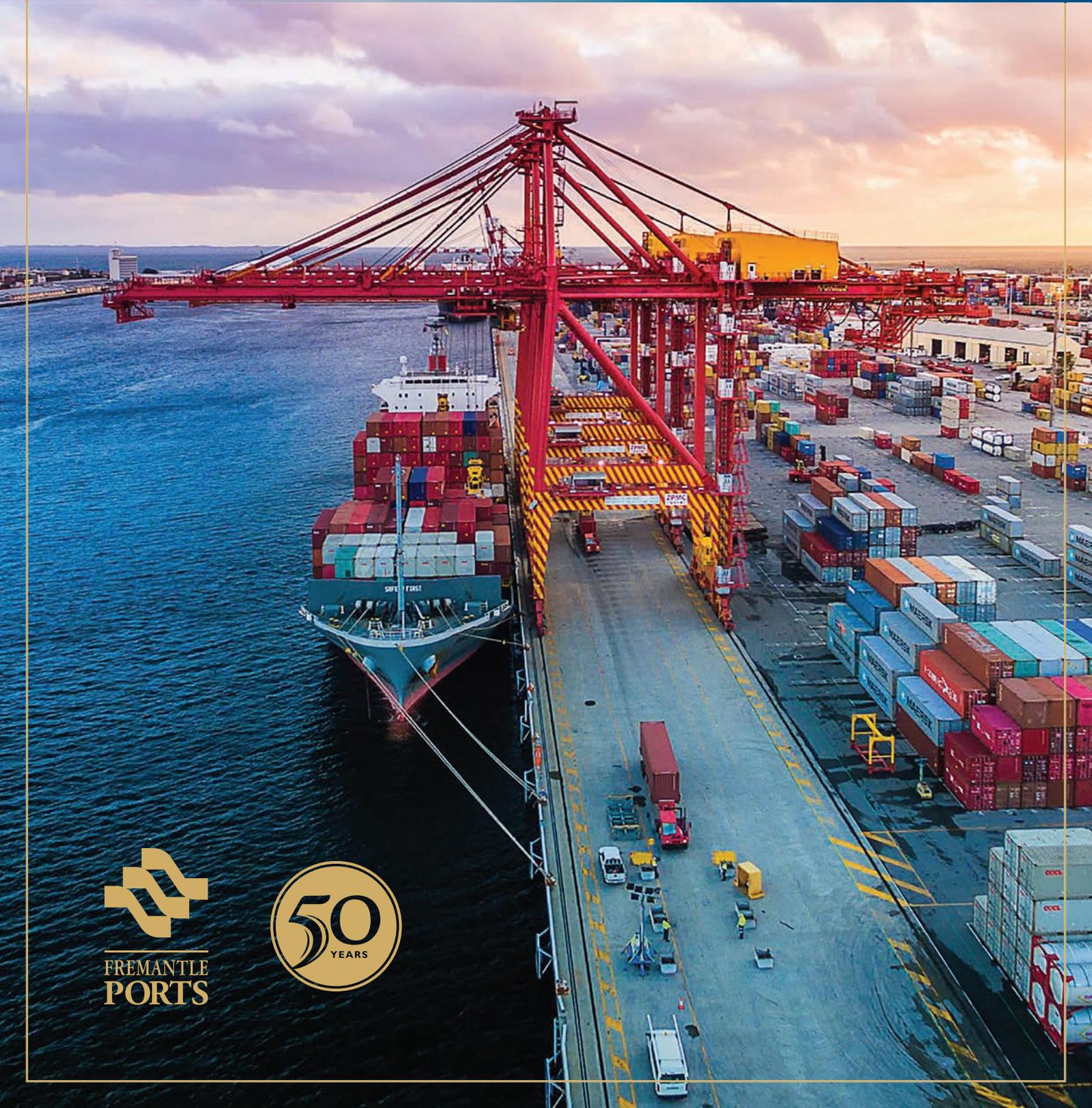


50TH ANNIVERSARY

INTERNATIONAL CONTAINER TRADE





FOREWORD

Fremantle Ports has, for more than a century, often led the way in terms of innovation and early adoption of new ideas, engineering and technology. The design and construction of the Fremantle Inner Harbour by CY O'Connor was in itself an engineering marvel, but that is a story well-told elsewhere.

As the 20th century unfolded, the port progressively evolved and grew in response to trade needs. The efficiency of the port and meeting the State's requirements were always the focus.

In more recent years, the reclamation of Rous Head and the pioneering use in Australia of Dynamic Under Keel Clearance were important innovations by Fremantle Ports, but none matched the introduction of intermodal containers in the late 1960s. It was a shipping industry innovation that had its early doubters, yet was to prove revolutionary on a global scale.

So, we are proud to look back this year and recall that Fremantle was the first Australian port to welcome an international container ship, *Encounter Bay*. It was an exciting and very significant event for Western Australia, with the ship berthing at the brand-new 12 Berth Container Terminal. This was the culmination of a frenetic asset-building and planning phase in the port's history.

Western Australia at the time was embarking on a bold, new, economic future that would see it become a powerhouse of the Australian economy. The Port of Fremantle was once again playing its part in WA's growth.

Fifty years later, it continues to do so. By a number of key measures, Fremantle is the most efficient container port in Australia. I am confident it has a strong future servicing the container industry and innovating further to see that it remains the success it has been over the past five decades.

The story of *Encounter Bay's* arrival and our journey as an outstanding container port is well-told in this publication and I commend it to you.

Chris Leatt-Hayter
Chief Executive Officer

FREMANTLE FIRST IN AUSTRALIA TO WITNESS THE GLOBAL CONTAINER REVOLUTION



OFFICIAL OPENING OF BERTH 12 CONTAINER TERMINAL 29 MARCH 1969

The other significant event in March 1969 was the official opening of Fremantle Port's first container terminal. This event was the culmination of the Port's Up-River Extensions Scheme, which began in 1965 and involved significant creation and reconstruction of berth facilities, including the development of the new 12 Berth Container Terminal where *Encounter Bay* berthed.

The terminal was state of the art for its time. Western Australia's then Premier The Hon. David Brand opened the facility to much fanfare. The new twin-lift locally built portainer crane was said to be the largest of its kind in the world and was later replicated in Melbourne, Sydney and Brisbane. The arrival of *Encounter Bay* at Fremantle and subsequent terminal opening was attended by dignitaries from around Australia and the UK, attracting significant media attention, with news cameras keen to capture the first container exchange from the vessel.

While sometimes overlooked now, Australia had already been a pioneer in the emerging container business, with the 3-ton seatainer format having been utilised from 1958 onwards as a precursor to the standard 20-foot container. This era of experimentation led to the construction of the purpose-built container vessel *Koorunga* which entered service in 1964 as the world's first fully-cellular container ship.

Few at the Berth 12 official opening would have imagined the growth to come in future decades. *Encounter Bay* and ships of its day had a nominal capacity of around 1300 twenty-foot equivalent units (TEU), which is a far cry from the 8500-9000 TEU ships that regularly call at Australian ports today.

It was, of course, the start of a new era. The transition to intermodal containers had far-reaching impacts upon commercial, industrial, technical and logistics aspects to the shipping industry, transforming the very nature of general cargo ports in the process. Fremantle was the first in Australia to witness the evolution.



ARRIVAL OF ENCOUNTER BAY 28 MARCH 1969

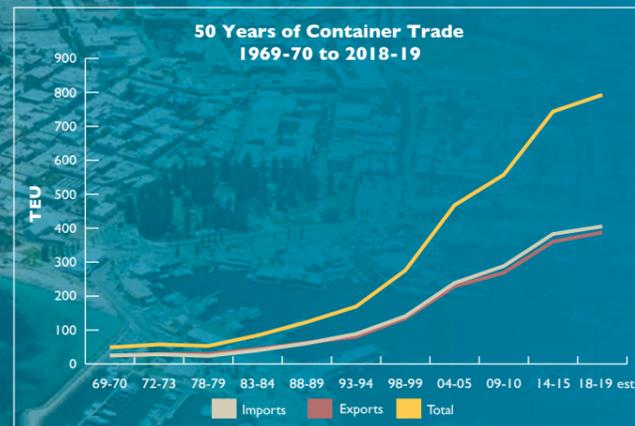
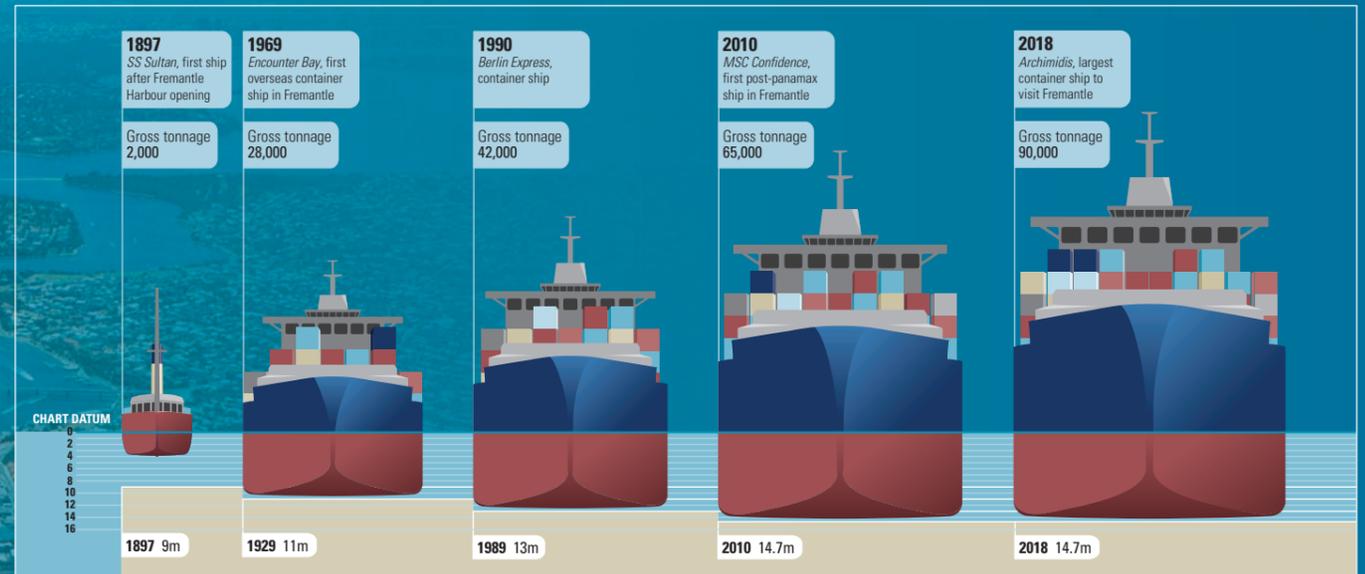
The arrival of Overseas Container Ltd's (OCL) *Encounter Bay* on its debut visit to Fremantle on 28 March 1969 was the beginning of the international container trade into Australia. The ship's arrival heralded the nation's entry into the global container revolution, which was at that time reshaping ports and logistics at major ports around the world. Labour-intensive stevedoring operations, where cargo was largely handled from ship to shore, were giving way to a new capital-intensive model.

Encounter Bay and its five sister ships were the culmination of a unique collaboration by four British shipowners who formed the consortium OCL in 1966 to initially undertake a feasibility study, then introduce a container service between Australia and Europe. Fremantle would see the first arrival!

EVER EVOLVING AND IMPROVING

- Fremantle had the best average container turnaround times and the best average truck turnaround times at the five capital city ports
- Fremantle's crane rate of 34 containers handled per hour was 'significantly higher than the five ports average of 28.1'.
- The percentage of containers transported by rail was the highest of the five ports at 16 per cent.
- In terms of 'dollars per ship visit', Fremantle 'continues to have lower charges than the other capital city ports'.
- At 1.7 containers carried for each truck movement, Fremantle was above the five ports average of 1.6.

*Waterline 62, BITRE, comparative data December quarter 2017 for Brisbane, Sydney, Melbourne, Adelaide and Fremantle ports.



INNER HARBOUR DEEPENING PROJECT 2

1989-90

The Fremantle Inner Harbour was opened in 1897 and was deepened in 1929 from 9 metres to 11m. In 1989-90, the harbour was deepened to 13m for container ships with drafts of 12.5m. Dredged material from the deepening was reused to reclaim land at Rous Head for port-related industries. Rous Head Harbour was created for small commercial vessels.

1956

American Malcolm McLean invents and patents the shipping container. Containers had been used previously for rail.

1962

Official opening of new sea-freight terminal at North Fremantle to handle Australian coastal container trade on 22 February



1969

Encounter Bay, first overseas container ship to visit Australia, berths in Fremantle on 28 March. Official opening of the Port of Fremantle Container Terminal on 29 March.

1971

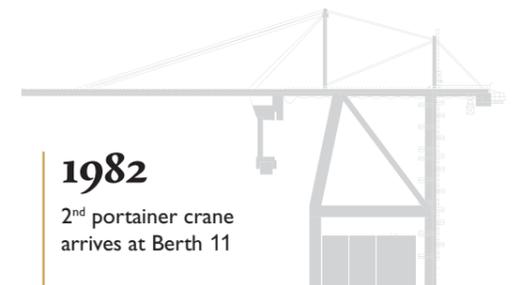
Reconstruction of North Quay Berths 6 & 7 to handle container trade

1978

Resolution Bay, world's largest refrigerated carrying capacity container ship, arrives at Fremantle

1982

2nd portainer crane arrives at Berth 11



1958-61

Fremantle Port plays pioneering role in development of shipping containerisation in Australia

1964

First arrival of Australian-built *Kooringa*, the world's first purpose-built fully cellular container ship in June

1965

Up-River Extensions Scheme port construction project



1970

Sydney Express, world's largest container ship, arrives in Fremantle in November

1972

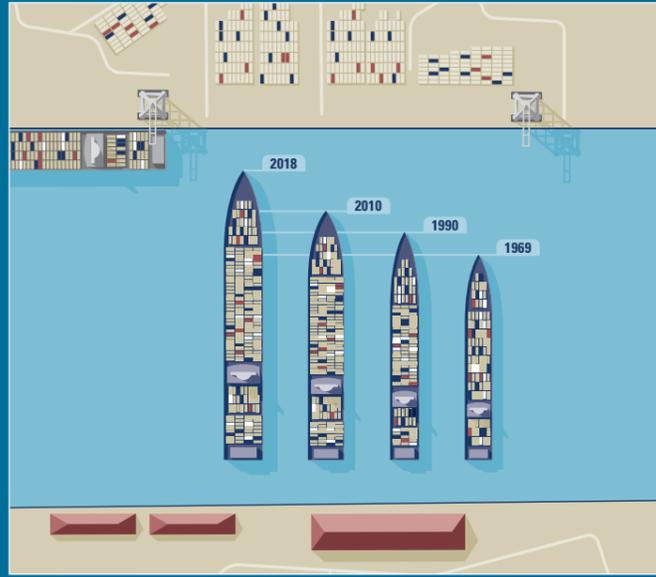
Reconstruction of North Quay Berth 8 to handle container trade

1980

Reconstruction of North Quay Berths 4 & 5 to handle container trade. New hydraulic wool press developed in WA; 3 bales compressed to 1 enabling 97% pay-load efficiency in a TEU. First container shipment of WA apples to UK.

1989-90

Inner Harbour Deepening Project 2



INNER HARBOUR DEEPENING PROJECT 3

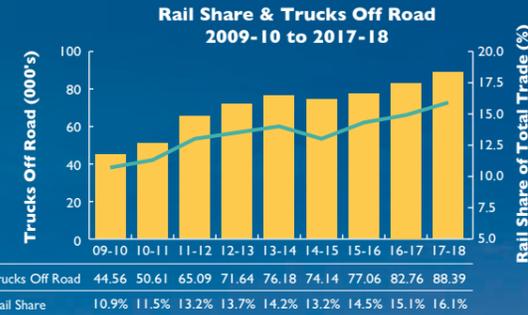
2009-11

The average size of container ships calling at Fremantle increased by more than 75% from 1993 to 2009. The deepening of the container terminal berths and approach channels was essential to enable the port to service the needs of WA's exporters and importers, and to service the larger container ships entering Australian trade routes. The project deepened the Inner Harbour and Entrance Channel to 14.7m and the Deepwater Channel to 16.5m, increasing the maximum draft capability from 12.8m to 14m. Dredged material from the deepening was reused to create 27 hectares of additional land at Rous Head for port-related purposes. North Quay container Berths 4-9 were strengthened to cater for the heavier loads bigger ships imposed on wharf infrastructure and Berth 10 was reconstructed to cater for container shipping.

NORTH QUAY RAIL TERMINAL AND RAIL LINK PROJECT

2014

The extension of the terminal line from 400m to 690m reduced turnaround times for trains and achieved a better interface with the two container terminals.



MOVING MORE WITH FEWER TRUCKS

Fremantle Ports invests in systems to improve the efficiency of supply chain activities in the port precinct with positive results. These award-winning initiatives include a Congestion Management System (CMS) and a 60-bay Truck Marshalling Area (TMA) at Rous Head, which are highly successful in managing any congestion. Operational efficiency is increased through improved communication, availability of data for better coordination and the ability for the port and industry to work together. Since 2014 container trade has grown while truck numbers have fallen.

MAXIMISING DRAFT WITH DUKC

1997

When you see ships traversing Fremantle Inner Harbour, there's sometimes as little as 30cm between the ship's keel and the harbour floor. Fremantle Ports uses draft-enhancing technology Dynamic Under Keel Clearance (DUKC) to allow ships to arrive or depart with minimal clearance and maximises port safety with appropriate risk management. Shipping companies save millions of dollars a year by being able to optimise their loads at Fremantle. Fremantle Ports introduced DUKC in 1994 for BP and extended its use to container vessels in 1997, the first port in the world to do so. Designed by Australian company OMC International, DUKC is now used by many Australian and international ports.

ROUS HEAD INDUSTRIAL PARK PROJECT

2012-13

The additional 27h of land reclaimed in 2010 allowed Rous Head to be reconfigured to better service the container trade, improve freight-handling efficiency, reduce truck congestion and improve road safety. The reclaimed land was developed and leased for port-related purposes, including truck marshalling, refuelling and parking, container storage, quarantine service facilities and short-term warehousing.



For more information and photos, see www.fremantleports.com.au/the-port/history-and-heritage/container-trade

1991

Redevelopment of Berths 8 and 9 to establish container working facilities and storage areas

1998

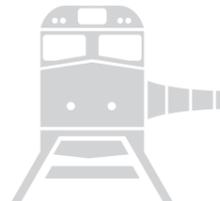
3rd portainer crane arrives (Patrick)

2007

ANL *Warringa* debuts in Fremantle (biggest ship at 260m and 40,000t)

2012-13

Rous Head Industrial Park Project (development and leasing of 27h of reclaimed land). Port's 4th post-panamax crane arrives (Patrick) in July 2012.



2014

North Quay Rail Terminal extension and crossing loop in Spearwood

2017

Rous Head Industrial Park certified as 'Excellent as Built' by Infrastructure Sustainability Council of Australia

2018

Port's 7th post-panamax crane arrives (DPWorld) in September



1997

First port in the world to use Dynamic Under Keel Clearance technology for container vessels. 100th anniversary of Fremantle Inner Harbour.

2006

North Quay Rail Terminal and Rail Link opened. Port's 1st post-panamax portainer crane arrives (Patrick) in November.

2009

First post-panamax container ship *MSC Confidence* arrives. Port's 2nd post-panamax crane arrives (Patrick) in November.

2009-11

Inner Harbour Deepening and Berth Works Project 3. Port's 3rd post-panamax crane arrives (DPWorld) in March 2010.

2013

Port's 5th post-panamax crane arrives (Patrick) in May

2015

Port's 6th post-panamax crane arrives (DPWorld) in February



2019

50-year anniversary of international container trade at Port of Fremantle



**FREMANTLE
PORTS**

Address

Fremantle Ports
1 Cliff Street, Fremantle
Western Australia 6160

Postal Address

PO Box 95, Fremantle
Western Australia 6959

Contact

Telephone: 61 (8) 9430 3555
Main Fax: 61 (8) 9336 1391
mail@fremantleports.com.au

www.fremantleports.com.au