MIKE DRAKE : Director, Marine Operations - DPA

Port Infrastructure, Environmental and Nautical Considerations
The P&O Fleet – Pacific Explorer

- Built: 1997
- Length: 262m
- GRT: 77,441 T
- Lower Pax: 1998
- Crew: 850
- Flag: UK
The P&O Fleet – Pacific Eden and Pacific Aria

- Built: 1992/3
- Length: 219m
- GRT: 55,877 T
- Lower Pax: 1260
- Crew: 600
- Flag: UK
The P&O Fleet – Pacific Jewel and Pacific Dawn

- Built: 1991/2
- Length: 245m
- GRT: 70,300 T
- Lower Pax: 1596/1676
- Crew: 700
- Flag: UK
P&O Cruises, Australia Fleet
The Future Fleet

Golden Princess (2020)
- Built: 2000
- Length: 289m
- GRT: 108,865 T
- Lower Pax: 2636
- Crew: 1060
- Flag: UK

Star Princess (2021)
- Built: 1999
- Length: 289m
- GRT: 108,977 T
- Lower Pax: 2600
- Crew: 1060
- Flag: UK
What Does The Role Involve?

- **Designated Person Ashore (DPA)** for P&O Cruises, Australia as per International Safety Management (ISM) Code:

  “To ensure the safe operation of each ship and to provide a link between the company and those on board. The responsibility and authority of the designated person should include monitoring the safety and pollution prevention aspects of the operation of each ship and to ensure that adequate resources and shore based support are applied, as required”
Marine Operations Director

• Ensure ships operate safely and efficiently as per the rules set by SOLAS, Classification Society, IMO, Flag State and the company Safety Management System (SMS).
• Efficient Operation of Vessels, Plan v Performance.
• Safety of Navigation, Planning and Monitoring.
• Itinerary and Destination, Planning, Port Study and Review.
• Engagement with Authorities - Marine & Coastguard Agency (MCA), AMSA, International Maritime Organisation (IMO), International Association of Lighthouse Authorities (IALA), Hydrographic Offices etc.
• Emergency Preparedness.
P&O Cruises, Australia

• Carnival Corporation – ten brands divided into four groups: Carnival Cruise Lines (Miami), Carnival Maritime (Hamburg), Carnival UK (Southampton) and Holland America Group (Seattle)

• P&O Cruises, Australia part of Holland America Group (along with Princess Cruises, Holland America Line & Seabourn)
Growth of cruising in Australasia has led to an increased portfolio of ports/destinations

- Greater variety of Base Ports- Melbourne, Adelaide, Fremantle, Cairns
- In recent years many new destinations have been regional as a result of the growth in short cruising (e.g. Moreton Island, Sunshine Coast, Kangaroo Island, Busselton, Eden, Mornington Peninsula etc.)
- More than 50% of destinations in Oceania created/commenced in last 15 years- Australia, South Pacific, New Zealand
Considerations necessary when looking at new destinations

- Sufficient attractions to satisfy the volume of guests (for this purpose “a given”)
- Ships can call reliably & efficiently - “Challenge of access” how do we get the ship in and the guest off to the areas of interest
- **Marine Infrastructure** - the equivalent of roads, bridges and stations – appropriate navigational charts, ports, wharves, anchorages & landing facilities; ships are getting larger
- Larger volume of guests present more challenges
- **Geographic location** (contribution to “port density”)
- Overall cost of the call
- Ongoing popularity of the call (rated each time by guests)
Nautical considerations when considering new port

- Initial desk top study to determine “access”; local engagement
- Review of available marine information and regulatory requirements (charts & port information)
- Marine Port Inspection is carried out on site: prevailing weather patterns, meetings with Harbour Master, Pilots, State/National regulator, local marine experts, Port Authorities/ local councils, local community
- Facilities in the port; berth, mooring integrity (bollards/wharf face), towage capability, water/fuel provision, access/egress safety within port
Challenge of Access

• Marine Infrastructure not as “visible” to electorate- funding
• Accurate Navigational Charts & Aids to Navigation (N.B. over 50 % of Australian coast not surveyed to modern standards)
• Availability of berth/wharves-more reliable than anchorage- therefore desired where available
• Suitability of the wharf mooring arrangement and access from/to the port boundary
• Anchorage distances – greater than 1 mile increases the logistical challenge and may negatively impact guest rating
• “Gateway ports” require more shore based transfer transport
Areas Not Surveyed to Modern Standards
Navigation charts and Aids to Navigation (Aton) are infrastructure.

In the same way as roads and bridges.
Submarine Volcano

KAVACHI
Kangaroo Island

- Penneshaw solution to increase reliability
- Purpose Built Jetty
- Changed Location from traditional Kingscote landing area
APEC – Port Infrastructure
How is Technology driving navigational decisions

- ECDIS (Electronic Chart & Display Information System) presents both opportunities and challenges.
- Hydrographic Improvements are assisting although progress is slow (Aircraft Survey now sometimes possible, satellite surveys pending)
- High Density Electronic Navigation Charts allow larger ships to access some ports previously off limits (Cairns, Townsville, Benoa); N.B. *however this requires a firm commitment from the port*
- Full Mission Bridge Simulation - high fidelity trial of navigational access to ports with tight safety margins
- Berthing Technology: Shore Tension Units (Geraldton, Esperance)
- Modern dredging capability (Broome, Cairns)
Airborne LIDAR (Light Detection and Ranging)

- Rapid Deployment
- Large Survey Area Capability
- Wider Survey Sweep
- Reliable for Surface Navigation Down to 65m
- Non turbulent waters only
Conflict Islands

- LIDAR Survey west coast
- Navigation on a chart swept to 65m
- Multiple Jetties for seasonal reliability
Satellite Derived Bathymetry

A possible solution for the Pacific?

- New technology
- 10% cost of conventional surveying
- Quick to deliver
- Not yet IHO compliant
Approaching Cairns showing maintained depth

Standard ENC
Approaching Cairns showing maintained depth

High density port

ENC
Cairns showing maintained depth only

Standard ENC
AND NOW THE 8 m CONTOUR WITH A WIDER CHANNEL

High density port ENC
Kuri Bay (Kimberley)
Requested swept path submitted as part of AHO hydroscheme
Preliminary data captured
Camden Sound
(Kimberley)
chart updated
Kuri Bay (Kimberley) now safely accessible by large vessels
End result - New Destination

Kuri Bay
Kimberley
SHORE TENSION UNITS – Geraldton & Esperance

- Reduce the Effects of Swell in Exposed Ports
- Dampens the wave energy on mooring system
Mooring integrity (ships stronger than bollards)

- Increasing number of ships being blown off wharves
Environment

- Air emissions. Regulations changing in 2020 (Exhaust Gas Cleaning Systems)
- Marine Bio Security continues to evolve (Ballast Water Treatment Systems) & bio fouling on the hull (regular cleaning)
- On board maintenance in port; very few places to paint/wash
- Shipping remains environmentally competitive with other means of transport—generally not well understood
- Good neighbour policy ahead of regulation
Global trends

- Larger ships - longer & wider with greater windage areas
- LNG powered vessels now being built
- Larger guest numbers
- Ports largely the same
- Increased population around ports
- Water Space Management - more vessels at sea and increased regulation
- Environmental considerations - air quality and bio security
Destinations for future consideration

- Victor Harbour (South Australia)
- East Kimberley (Western Australia) using Wyndam as gateway
- Arnhem Land (Northern Territory)
- Abrolhos Islands (Western Australia)
- Exmouth berthing option (Western Australia)
- Flinders Island (Tasmania)
- South West Bay (New South Wales)
- Multiple options in Fiji, Solomon’s and PNG
THANKYOU