

# MANAGEMENT OF PORT FACILITIES AND INFRASTRUCTURE



## 7. Cruise Terminals

MARA 616

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## MANAGEMENT OF PORT FACILITIES AND INFRASTRUCTURE

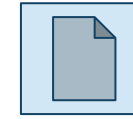


# A. Cruise Shipping



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# One of the Last Liners, SS France (1969)



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**2,000 passengers**



# The Largest Cruise Vessel in the World (2025): Icon of the Seas

Cost: About 2 billion dollars; About 7,000 passengers



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# The Cruise Industry

- Cruise
  - An itinerary followed by a specialized ship for leisure purposes.
- Cruise market
  - Demand characteristics for cruises.
  - Nature, location, duration, and amenities.
- Cruise lines
  - The choice of itineraries.
  - The allocation of ships.
  - Ship design and amenities.
- Cruise ports
  - Home ports.
  - Ports of call.

# Evolution of Cruise Shipping

- Modern cruise industry
  - Demise of the ocean liner in the 1960s.
  - Replaced by fast jet services, making liner services uncompetitive.
  - The last liners became the first cruise ships.
  - Reconversion to form the first fleets of cruise ships.
  - One of the last purposefully designed liners, the SS France, served as a cruise ship (SS Norway) between 1980 and 2003.
  - Liners were not particularly suitable for the requirements of the emerging cruise industry.
  - Designed to operate on the North Atlantic for scheduled passenger services throughout the year.
  - Outdoor amenities, such as boardwalks and swimming pools, were limited in scope.
  - Built for speed (which was their trademark) with the related high fuel consumption levels.

# Evolution of Cruise Shipping

- Current status
  - In 2024, a record 34.6 million people boarded a cruise vessel.
  - Caribbean is the major destination region (14.98 million cruise passengers in 2024), and the Mediterranean is the second (5.77 million passengers).
  - Cruise fleet consisted of over 450 vessels, sailing for 90 brands worldwide.
  - Average of \$2,200 in revenue per cruise passenger.
  - Each passenger embarks on a cruise to visit between 4.6 and 5.2 cruise ports.

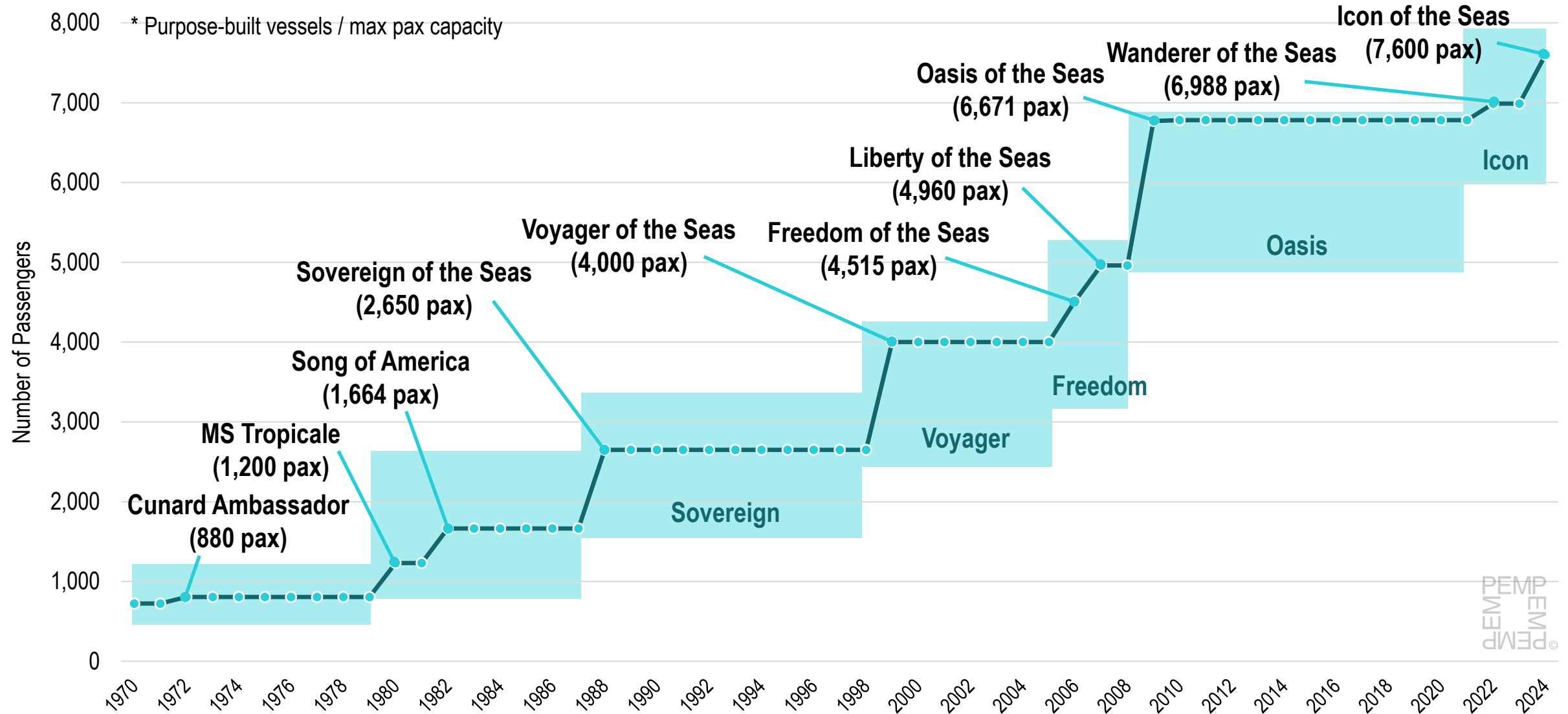
# Growth Drivers

- Expansion and capture of revenue streams
  - Regular fleet renewal.
  - Expanded onboard amenities.
  - Shore-based excursions (shorex).
  - Cruise ship is the destination.
- Scaling up of cruise ship size
  - Deployment of larger cruise ships.
  - In the 1990s, cruise ships rarely exceeded 2,000 passengers, by the 2010s, ships of 6,000 passengers were being deployed.
  - Larger ships support a wider range of amenities and additional onboard revenue generation.

# Growth Drivers

- Market segmentation
  - Different types of vessels associated with amenities offered onboard and ashore.
  - Cruises targeting different (social and age) groups of potential cruisers.
- Globalization of deployment patterns
  - Sophisticated itinerary planning.
  - Deployment of cruise vessels in multiple world markets.
  - Specific regional and cultural experiences.
  - Seasonal and fundamental changes in demand by repositioning ships (seasonal) and changing the configuration of their port calls (fundamental).
  - No fixed itineraries but regularly move cruise vessels from one region to another for certain periods of a calendar year.

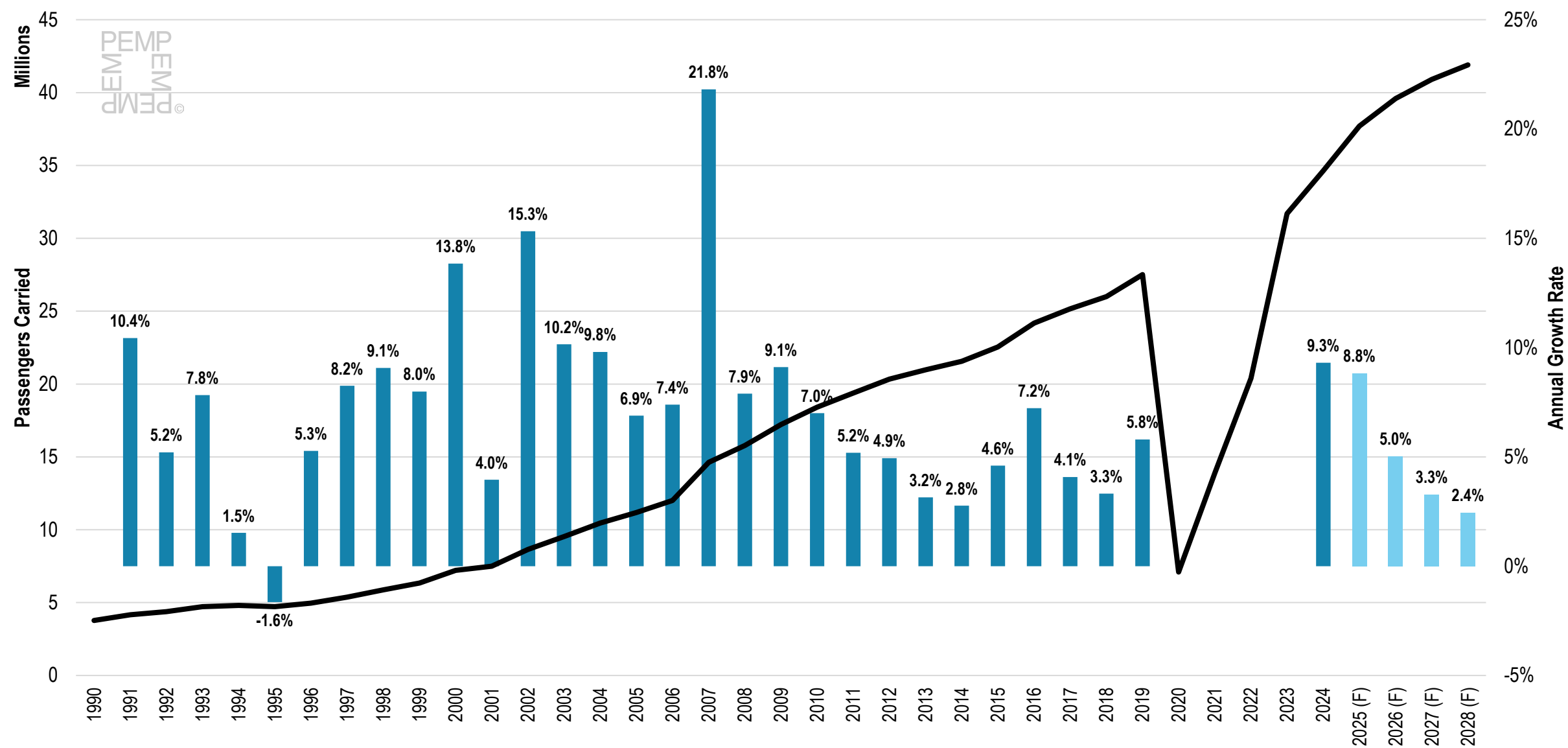
# The Largest Available Cruise Ships, 1970-2025



# Growth Drivers

- Internationalization of passenger source markets
  - Expansion of the sources of cruise guests.
  - Expansion of the population groups attracted by modern cruises.
- Concentration and multi-brand strategies
  - High level of ownership and market concentration.
  - Each conglomerate operates a number of different brands in order to expand the targeted passenger groups.
  - Carnival and Royal Caribbean account for 73% of the market.

# Global Cruise Passengers Carried & Growth Rates, 1990-2024, 2025-28(F)



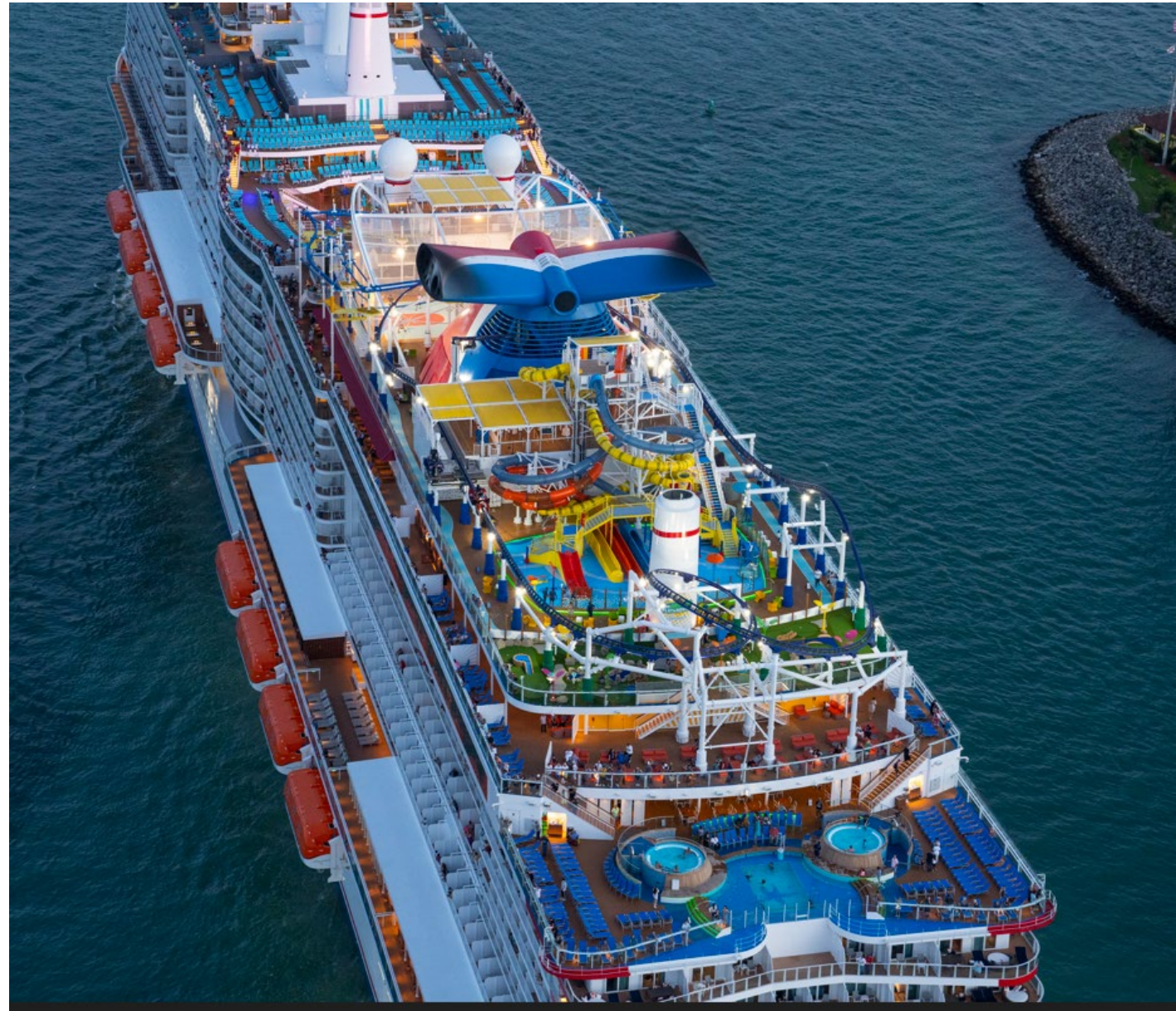
# Vessels and Onboard Amenities

- Cruise ships
  - Occur in cycles.
  - Ordered and enter the market within a short timeframe.
  - Successful at finding customers to fill a greater number of ever-larger ships.
- The cruise product
  - Diversified to attract new customers and cater to preferences.
  - New destinations, unique ship designs, diverse onboard amenities, facilities, and services, as well as a wide range of shoreside activities.
  - Most cruise ship operators specialize in specific cruise themes, and voyage lengths can vary to accommodate the changing vacation patterns of customers.

# Amenities on a Cruise Ship



Royal Promenade, Voyager Class, 1999



# Selected Amenities on the Icon of the Seas (Royal Caribbean, 2024)

## On Deck Activities

- Crown's Edge — Obstacle course
- Category 6 — Largest waterpark at sea
- FlowRider — 40-foot-long surf simulator
- Pool decks — 7 pools, 9 whirlpools, first suspended infinity pool at sea
- Adrenaline Peak — Rock climbing wall 40 feet above deck
- Surfside — A neighborhood with a carousel
- Absolute Zero — Ice rink
- Laser tag — Glow-in-the-dark laser tag
- Pickleball
- Mini Golf
- Sports Court
- Sea Fitness Center

## Services

- Vitality Spa
- Central Park — Largest “living park” at sea
- Onboard shopping
- World-class dining — Complementary and specialty restaurants

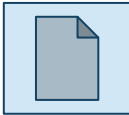
## Entertainment

- Royal Theater — Multimedia productions
- Absolute Zero — Ice skaters
- AquaTheater — High-diving shows
- Royal Promenade — A two-story boulevard with 15 bars & restaurants
- Nightlife — Bars, lounges, and nightclubs
- Casino Royale
- Music Hall — Live bands, dancing, parties
- Spotlight Karaoke

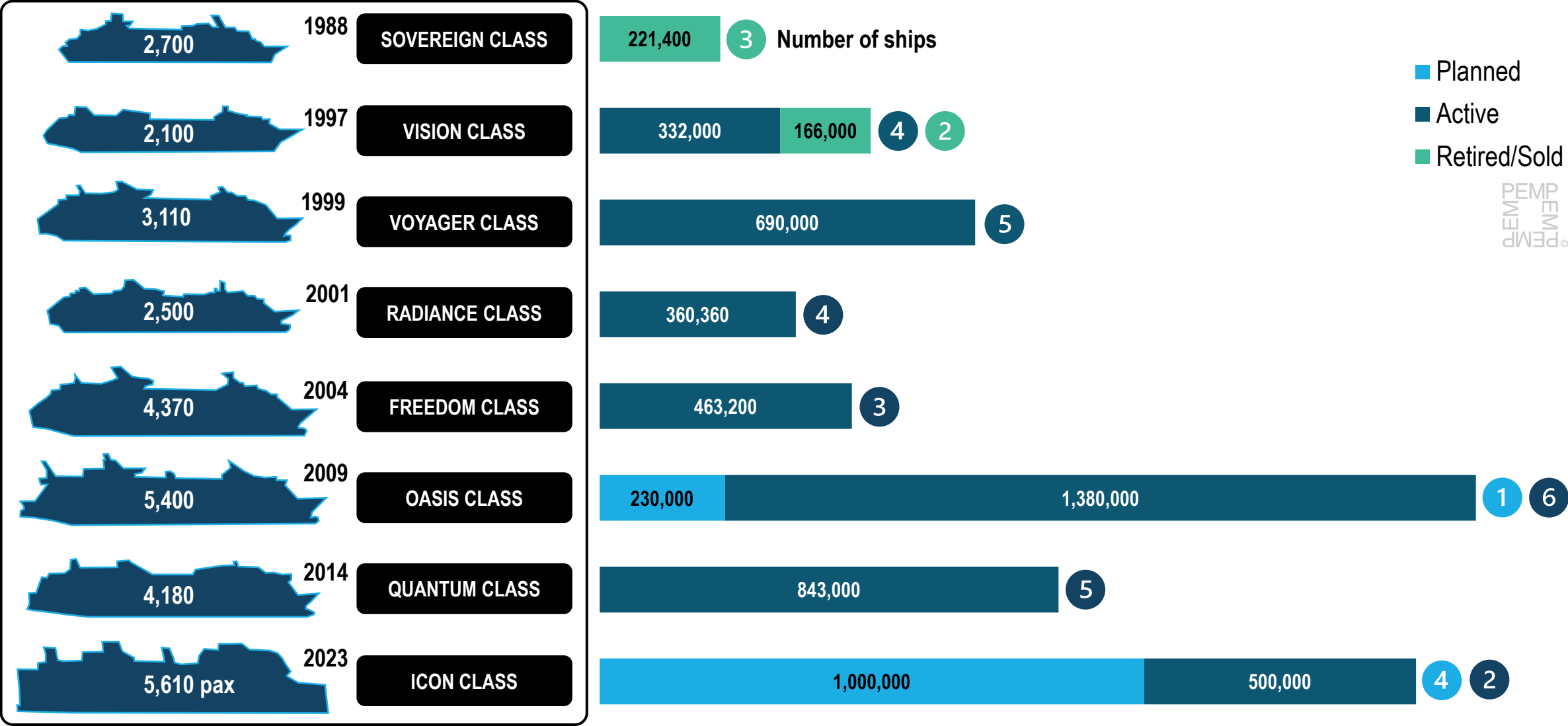
# Scale and Market Segmentation

- Drivers of higher capacity cruise ships
- Demand generation:
  - Link between vessel size and new passenger demand creation.
  - Bigger vessels enable the addition of a variety of onboard activities and services.
  - Expanding the targeted social and age groups.
- Revenue capture:
  - Additional ticket purchases and the expansion and variation of the services and activities.
- Economies of scale:
  - Lowering average total costs by spreading fixed costs over several additional passengers.

# Total Gross Tonnage by Ship Classes, Royal Caribbean Cruises



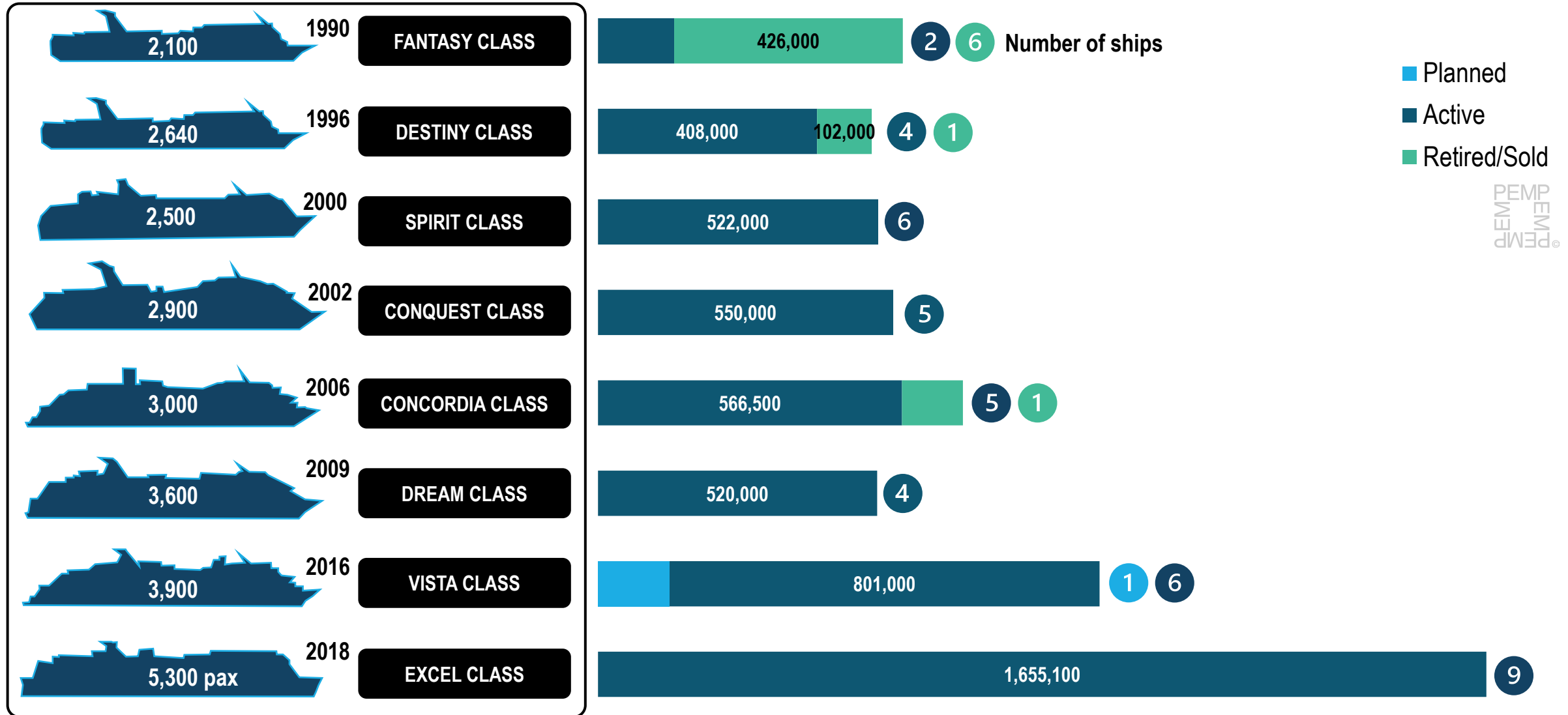
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# Total Gross Tonnage by Ship Classes, Carnival Cruises



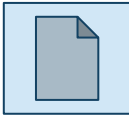
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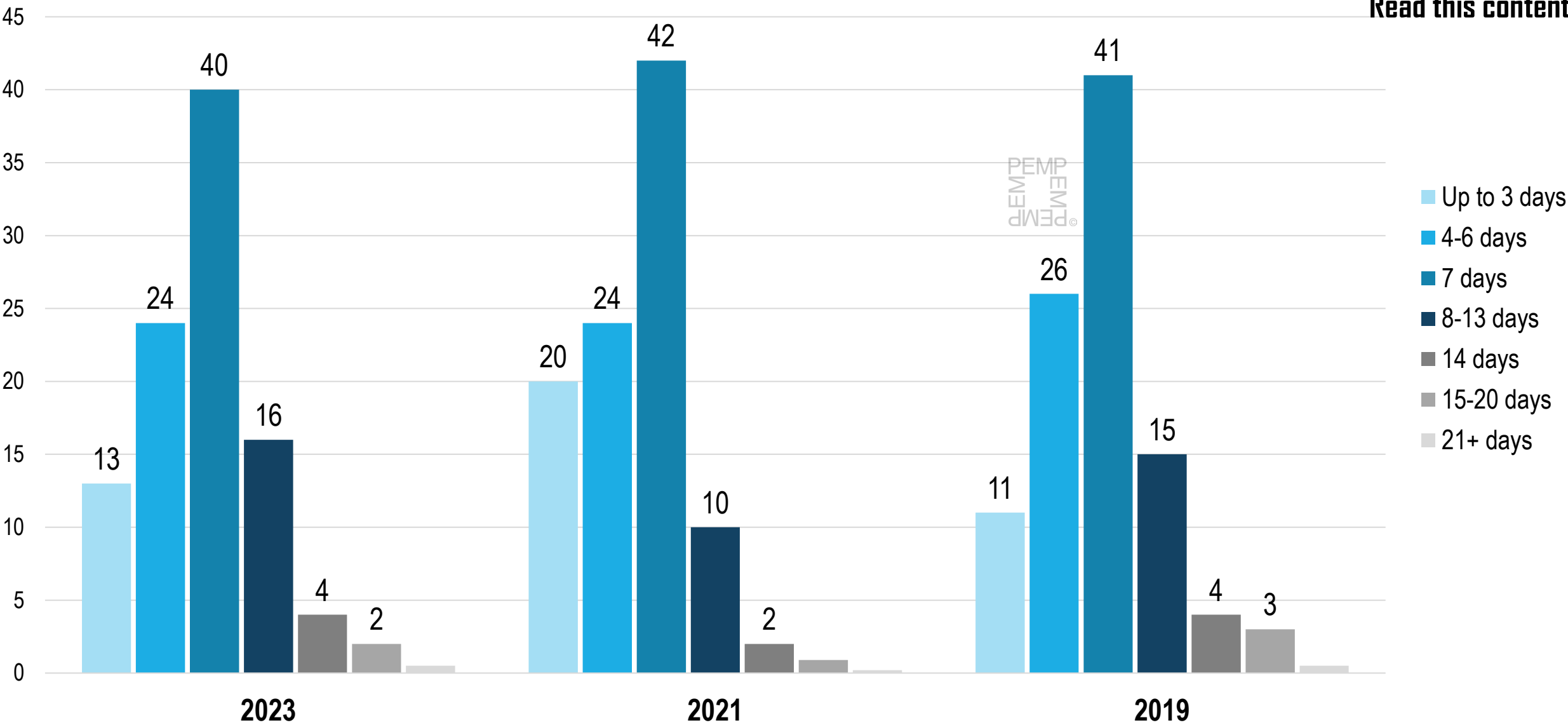
# Scale and Market Segmentation

- Contemporary cruises
  - Popular amenity-packed for people seeking a variety of activities and value.
  - Compete with land-based vacations by offering a comprehensive and amenity-filled package.
  - Accommodations, meals, and entertainment, in a casual environment.
  - The biggest market segment (with a market share of approximately 74%).
  - Largest cruise vessels with average cruise length of seven days.
  - Appeals to cruisers of all ages and incomes.
  - Budget cruises with older vessels, a cruise market segment active in Europe and North America.

# Average Cruise Duration (2019-2023)



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# Scale and Market Segmentation

- Premium cruises
  - Many amenities with an increased focus on refined service and more space.
  - Priced inclusive of accommodations, meals, and entertainment, the value of premium cruises exceeds or rivals the best packages offered by upscale hotels and resorts.
  - Second biggest cruise market (approximately 20%) attracts more experienced cruisers.
- Luxury cruises
  - Highest quality and personalized service offered on luxury cruise ships.
  - Exotic as well as more exclusive ports.
  - Medium-sized or small, spacious vessels.
  - 3-4% of the cruise market.

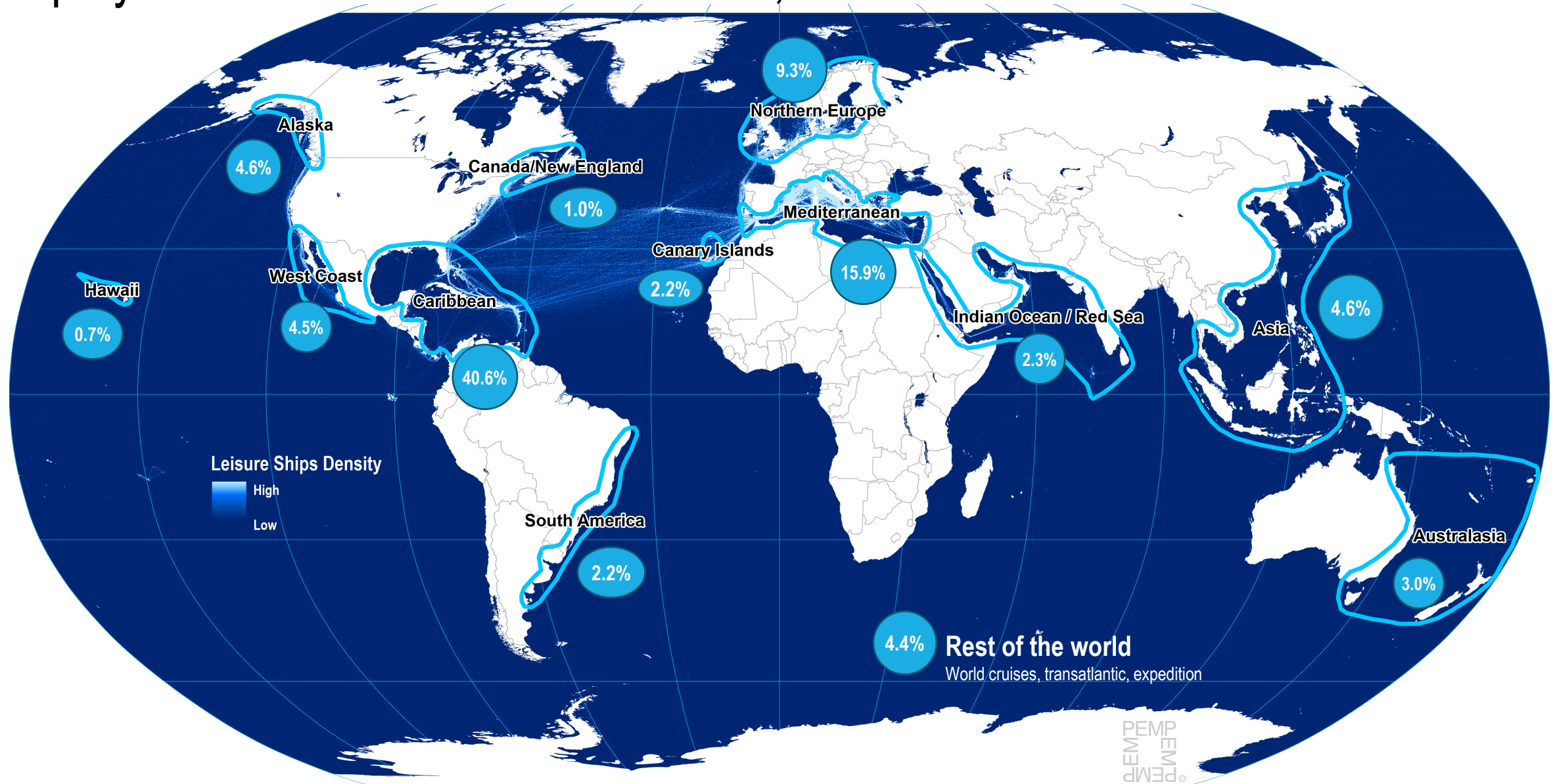
# Scale and Market Segmentation

- Specialty cruises.
  - Destination niche or a unique cruising style.
  - Expedition and exploration style cruises, sailing ships, and a growing number of river cruises.
  - Long itineraries and visit some of the world's most remote and unspoiled places (such as Antarctica and the Arctic).
  - Unique experience that guests find educational and adventurous.
  - Approximately 40 ships are specifically designed for expedition and exploration cruises
  - Market share of around 3%.

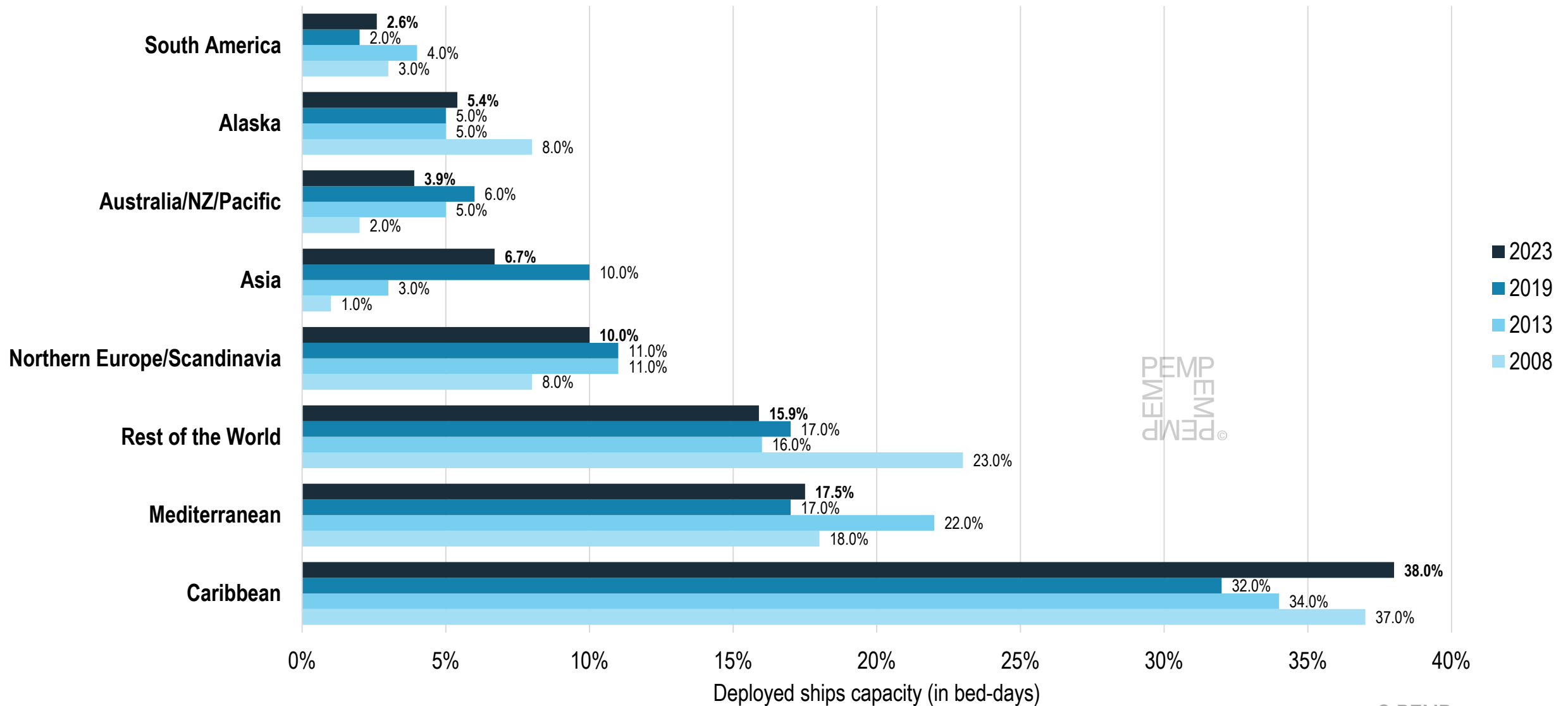
# Segmentation of Cruise Shipping

	CONTEMPORARY CRUISE LINES	PREMIUM CRUISE LINES	LUXURY CRUISE LINES	SPECIALITY CRUISE LINES
Keyword	Quantity	Quality	Exclusivity	Adventure
Ships	Large ships	Medium-sized Ships	Small Ships	Very Small ships
Typical Capacity	2,000 – 5,600 Pax	1500 – 2,500 Pax	100 - 800 Pax	100 - 300 Pax
Cabins	Small cabins	Large cabins	Huge cabins or all suites	Mixed cabin accommodations
Orientation	Family friendly	Family friendly, but more adult-oriented	Not family-friendly	Not suitable for most families
Length of itineraries	3-7+ night	7-14 night itineraries	10+ night	3-20 night
Quality of Services	3-4 star service	4-5 star service	5-6 star service	3-5 star service
Price point	Budget to mid-price	Average to mid-price	Very high price	High to very high price
Cruise Lines (examples)	Carnival Cruise Line; Costa Cruise Line; Disney; MSC; Norwegian Cruise Line; Royal Caribbean Internat	Azamara Cruise Line; Celebrity Cruises; Holland America; Oceania Cruises; Princess Cruises	Crystal Cruises; Cunard Line; Explora; Ponant; Regent Seven Seas Cruises; Ritz-Carlton; Seabourn; Silversea Cruises; Viking Ocean; Windstar	Cruise West; Deilmann; Delta Queen Steamboat; Discovery World Cruises; Hurtigruten; Lindblad; Peter Star Clippers; UnCruise; Viking

# Deployment of the Global Cruise Fleet, 2025

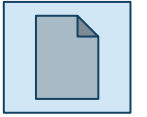


# Deployment of the Global Cruise Fleet, 2008-2023

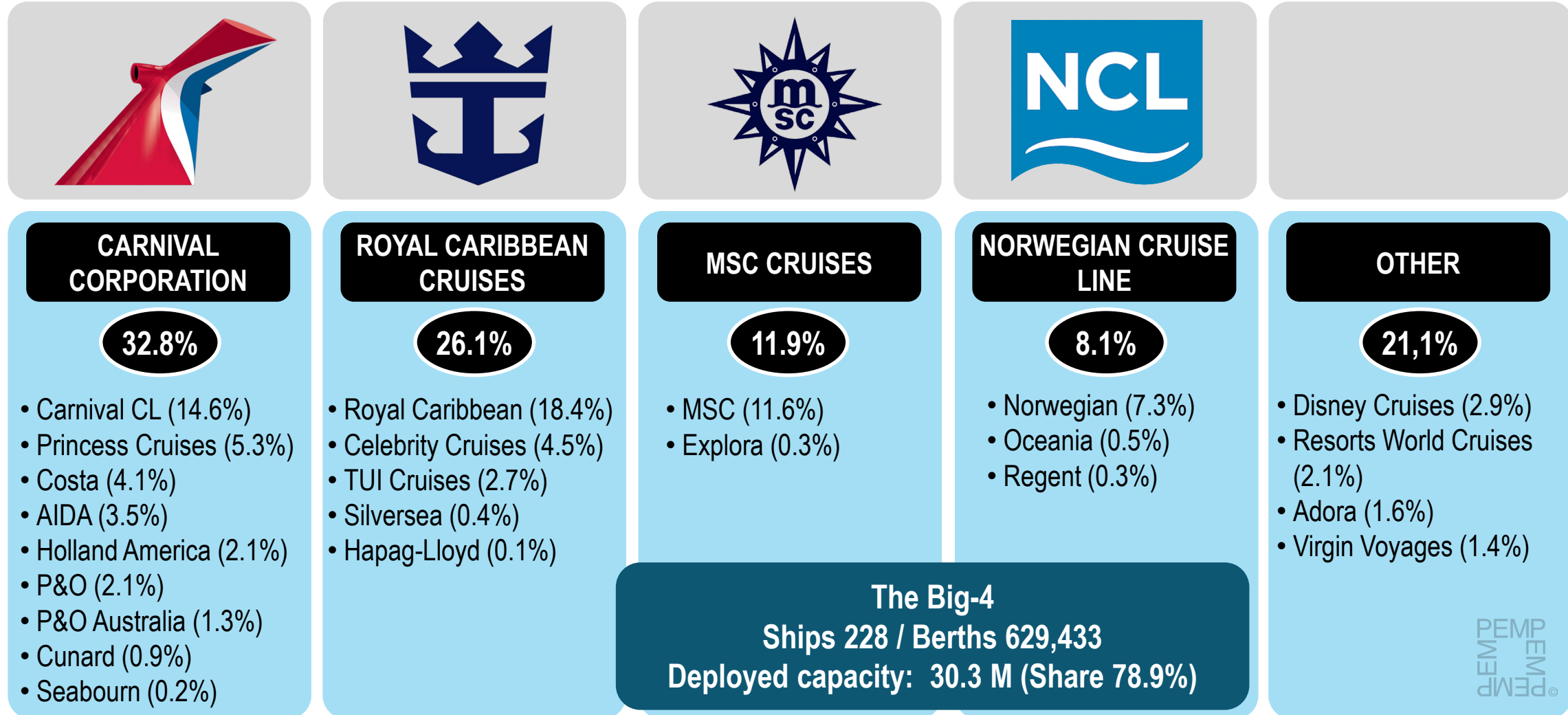


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# Market Share of Main Cruise Lines / Companies, 2026

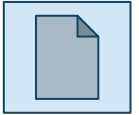


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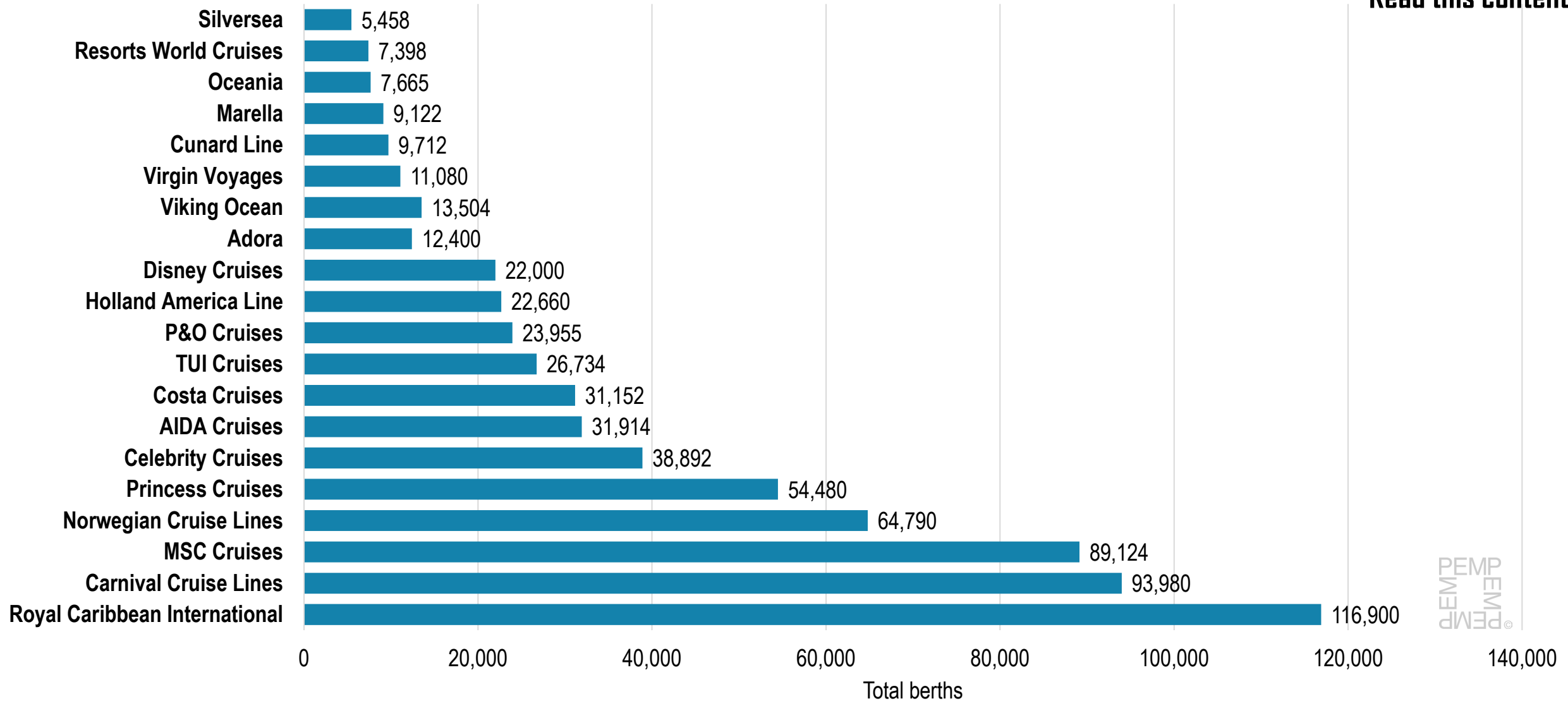


\* Share in terms of deployed capacity.

# Top 20 Cruise Brands by Berth Capacity, 2026



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## MANAGEMENT OF PORT FACILITIES AND INFRASTRUCTURE



## B. Cruise Ports

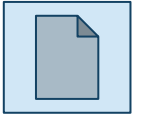


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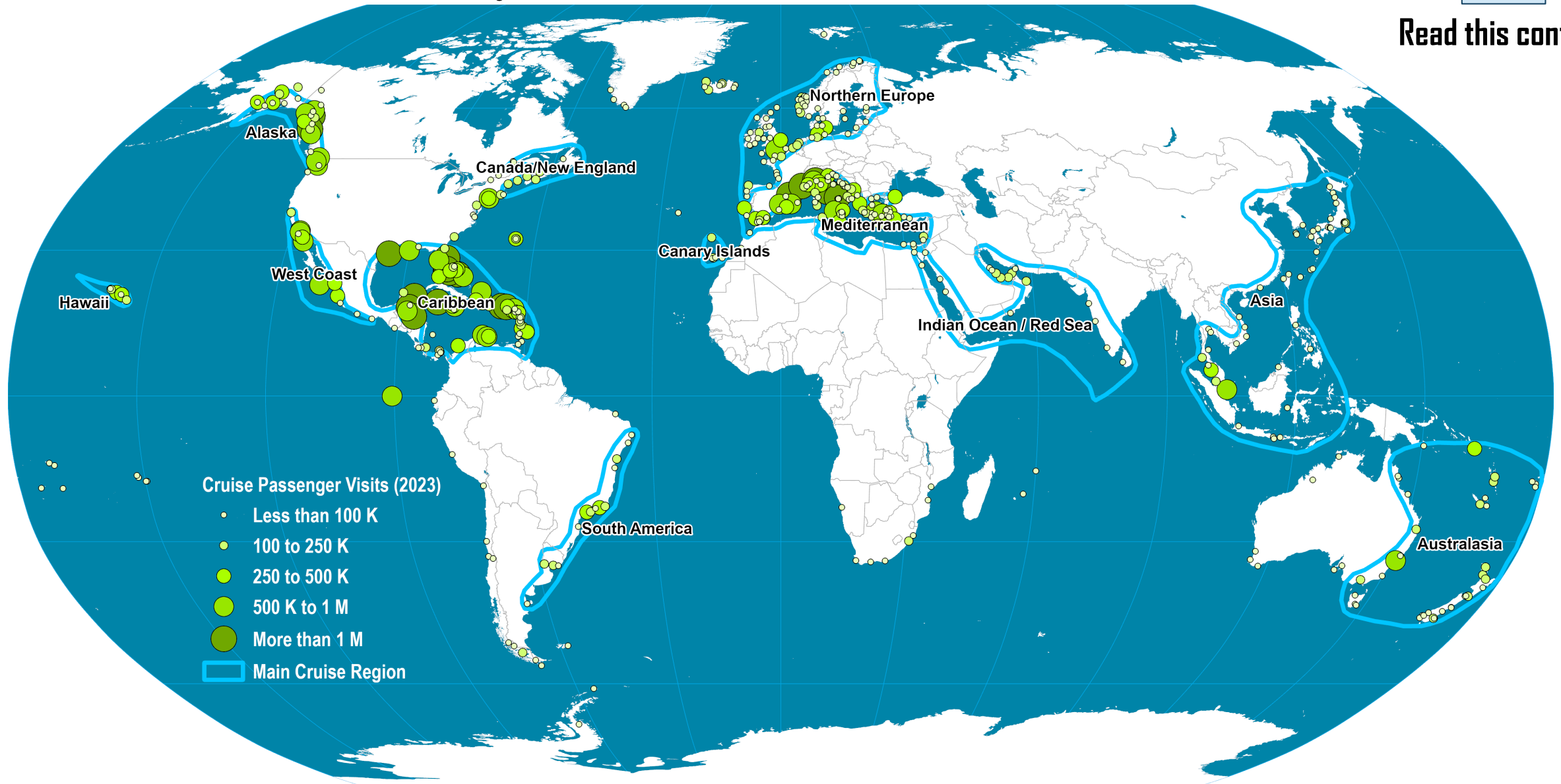
# An Expanding Cruise Port System

- The importance of cruise ports
  - Growth in cruise shipping and businesses.
  - Schedule reliability and allowing continuous passenger (dis)embarkation and transfer to onward journeys and day excursions.
  - Financial contribution of cruising to port cities or nearby touristic destinations.
  - Presence of sufficient port-specific and port-related infrastructure.
  - Low congestion and disruption.
  - Modernization of port infrastructure.
- Direct and indirect impacts of cruise-related activities
  - Passenger and crew spending.
  - Cruise line expenditures on goods and services supporting their operations.

# The Global Cruise Port System, 2023



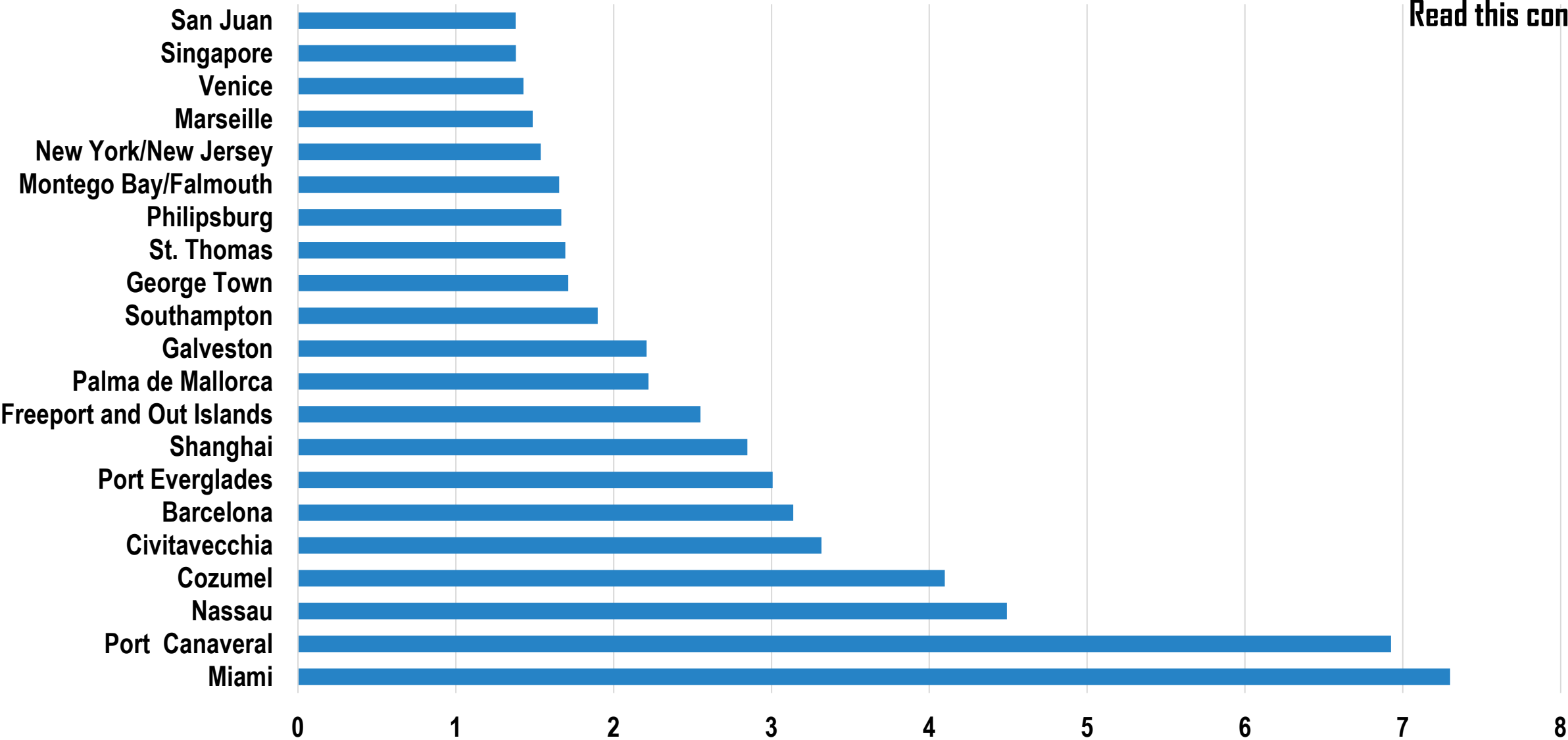
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# Largest Cruise Ports by Passengers, 2023



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# Typologies of Cruise Ports

- The port element
  - Market region.
  - Ownership and operations.
  - Type of cruise terminal.
  - Port size.
  - Seasonality.
  - Port function in the itinerary.
- The tourism element
  - Attractiveness.
  - Local and regional integration.
  - Accessibility.

# Typology of Cruise Ports



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## THE PORT ELEMENT

### Port Governance

- 1 Public
- 2 Private
- 3 Concession

### Port Development

- 1 Dedicated terminal
- 2 Dedicated pier
- 3 Multi-purpose facility
- 4 Private islands

### Port Function

- 1 Home-port
- 2 Port of call
- 3 Hybrid (1+2)

### Port Size

- 1 Major (> 1M Pax/year)
- 2 Very Large (500,000-1M)
- 3 Large (250,000-500,000)
- 4 Medium (100,000-250,000)
- 5 Small (<100,000)

### Seasonality

- 1 Low (perennial port; 4 peak months <40% of visits)
- 2 Average (4 peak months 40 -60% of visits);
- 3 High (4 peak months 60-80% of visits);
- 4 Very high (4 peak months > 80% of visits)

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## THE TOURISM ELEMENT

### Attractiveness

- 1 Marquee ("must see") port
- 2 Discovery port

### Local and Regional Integration

- 1 Destination port
- 2 Gateway port
- 3 Balanced port

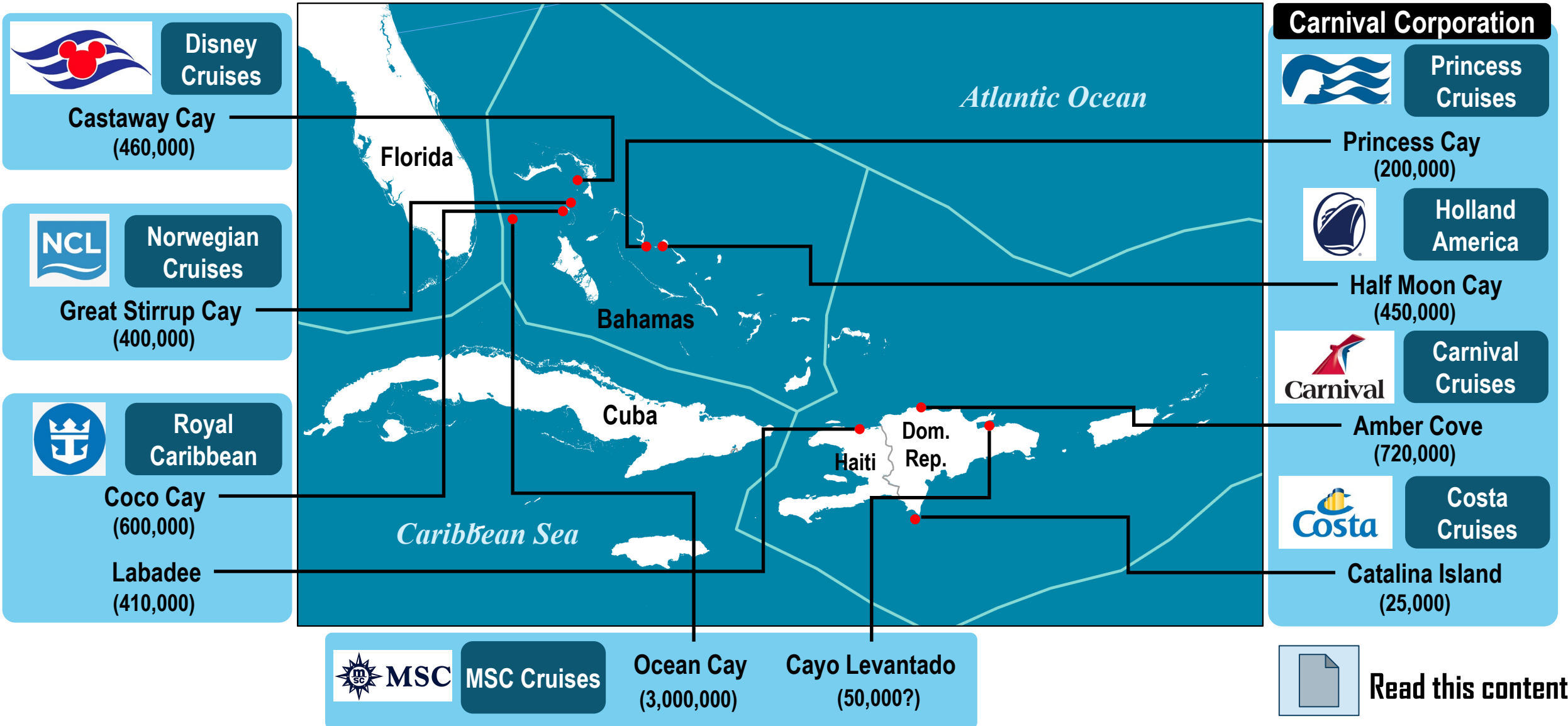
### Accessibility

- 1 Air hub port
- 2 Drive to port
- 3 Train to port

# Types of Cruise Ports

- Home ports (turn ports or hub ports)
  - Ports where passengers begin or end their cruises (loops).
  - Cruise ships are resupplied and refueled, including waste disposal.
  - About 80% of all cruises end up in their port of origin.
  - Growing number of homeports underlining the expansion and diversification of the cruise industry.
- Ports of call (transit ports)
  - Intermediate stops along the itinerary.
  - Cruise vessels call for a few hours.
  - Guests can visit the port city and nearby tourist attractions.
  - The cruise ship acts as a staging point.
- Hybrid ports
  - Blend of the two categories.

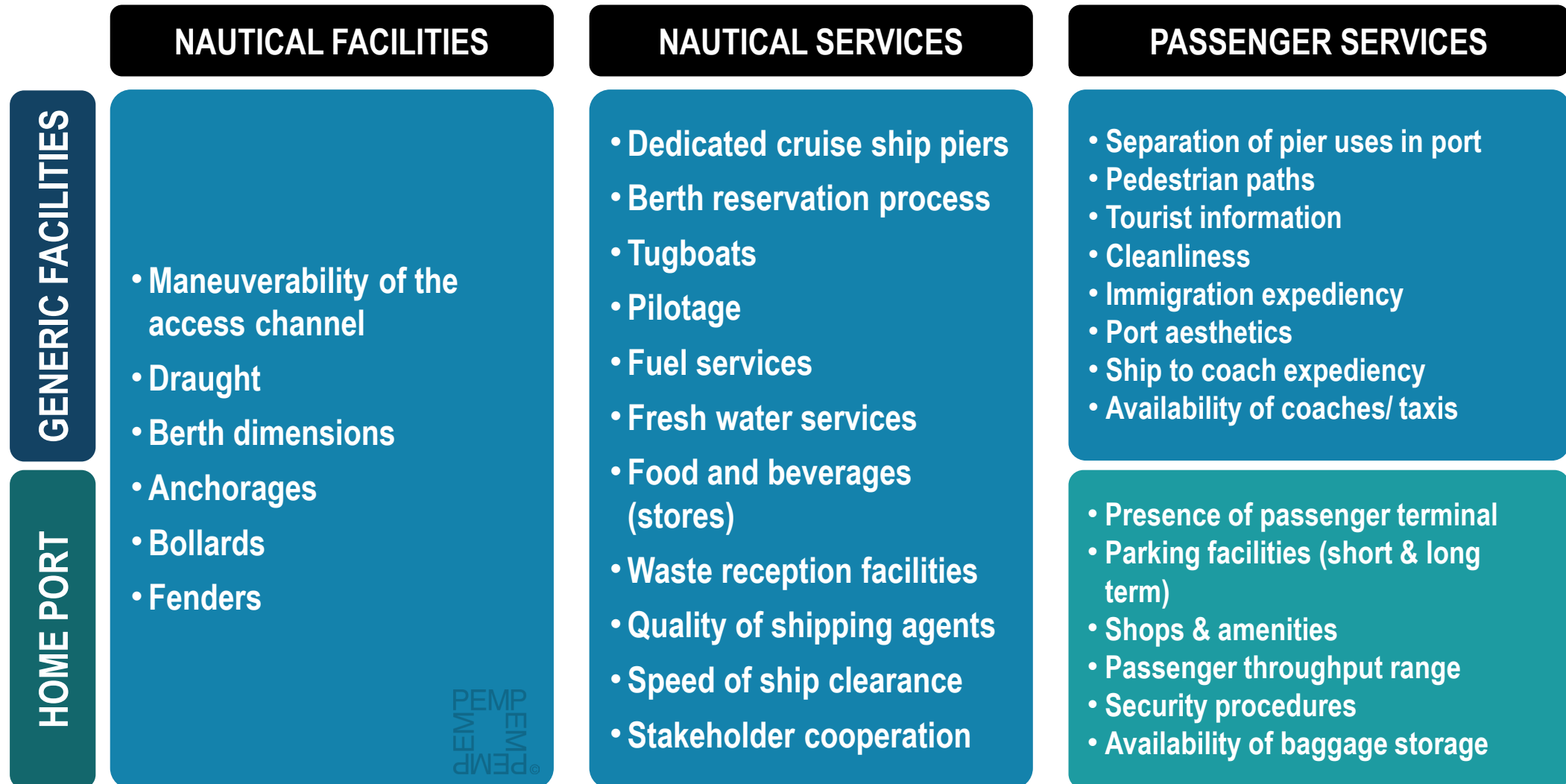
# Cruise Terminals: Private Islands owned by Cruise Lines in the Caribbean



# Expected Cruise Port Facilities and Services



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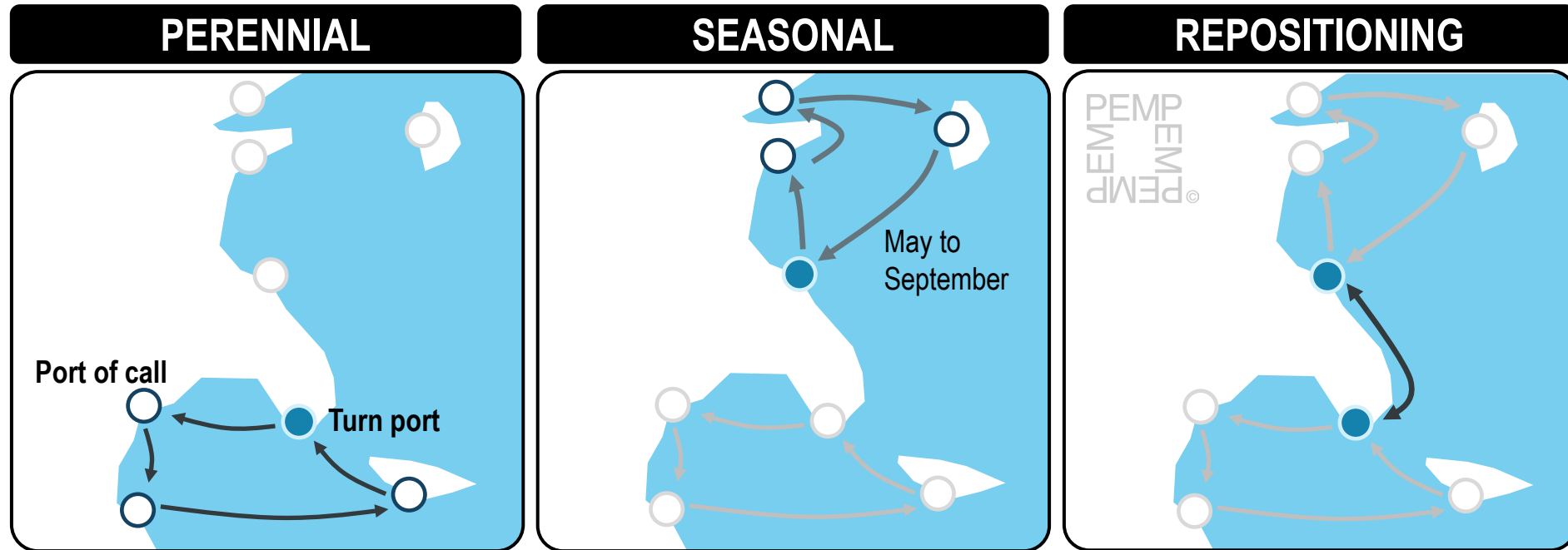
# The Competitiveness of Cruise Ports

- Cruise terminals are less costly than other port facilities.
- Competitiveness factors
  - Distance between cruise ports.
  - Tourist attractiveness of the destination (climate, socio-cultural factors, and natural factors).
  - Accessibility of the destination.
  - Quality of port services.
- Commercial considerations
  - Potential revenue generation and costs.
  - Operational considerations.
  - Brand positioning.
  - Guest interest and satisfaction.
  - Marketability.
  - Economic trends and market research.

# Types of Cruise Itineraries



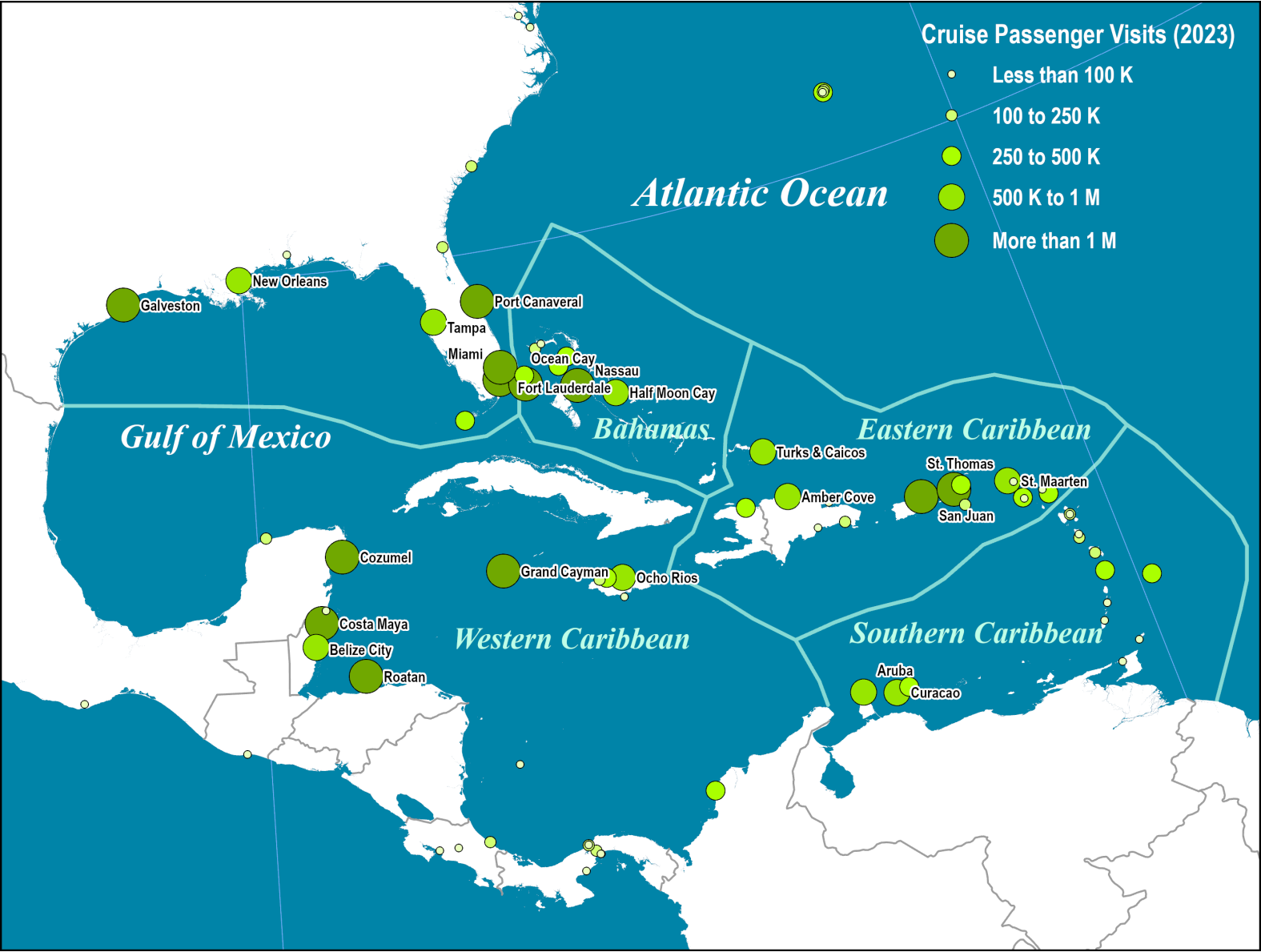
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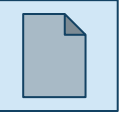
# Cruise Passengers Visits, Caribbean, 2023



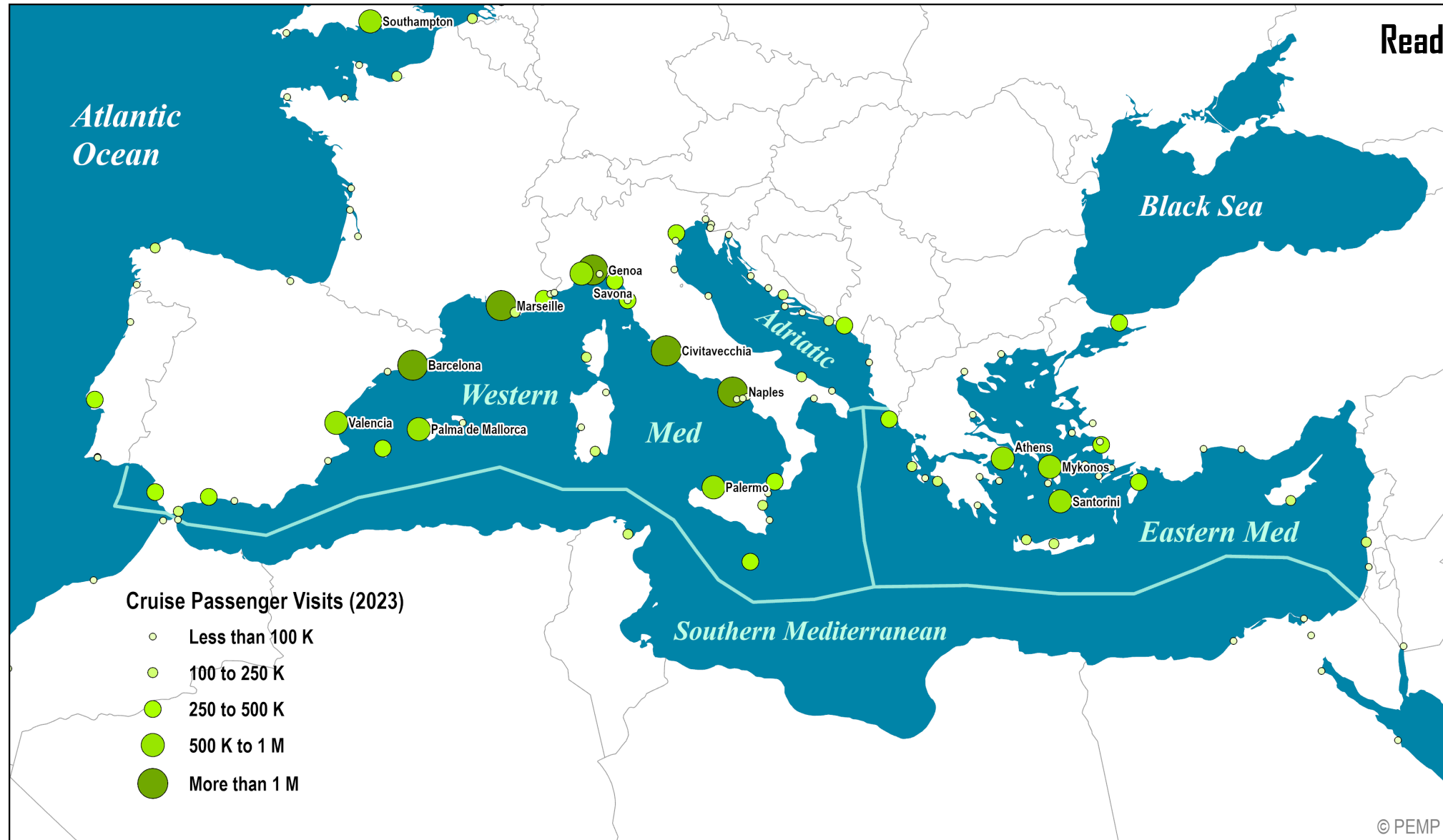
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# Cruise Passengers Visits, Mediterranean, 2023



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# C. Cruise Terminal Design



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# The Operational Considerations of Cruise Terminals

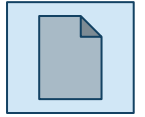
- Homeports

- Cruises arrive early in the day so that passengers proceed to customs and immigration, have their luggage (un)loaded, and make their flight connections.
- Provisions for the next cruise need to be loaded, baggage from arriving passengers scanned and loaded, and passengers processed through ticketing.
- Spare parts, deck supplies, and bunkers (including potable water and fuel oil).
- A portion of the crew visits the port city and returns before the ship departs.
- Must be completed within 24 hours, preferably within 8 hours or less, for a cruise departing on the same day as the arrival cruise.
- Handling a large number of passengers in a short period requires a terminal building, adequate parking areas, and good access to the local transportation system, particularly at airports.
- Cruise terminal design has similarities with airport terminal design.

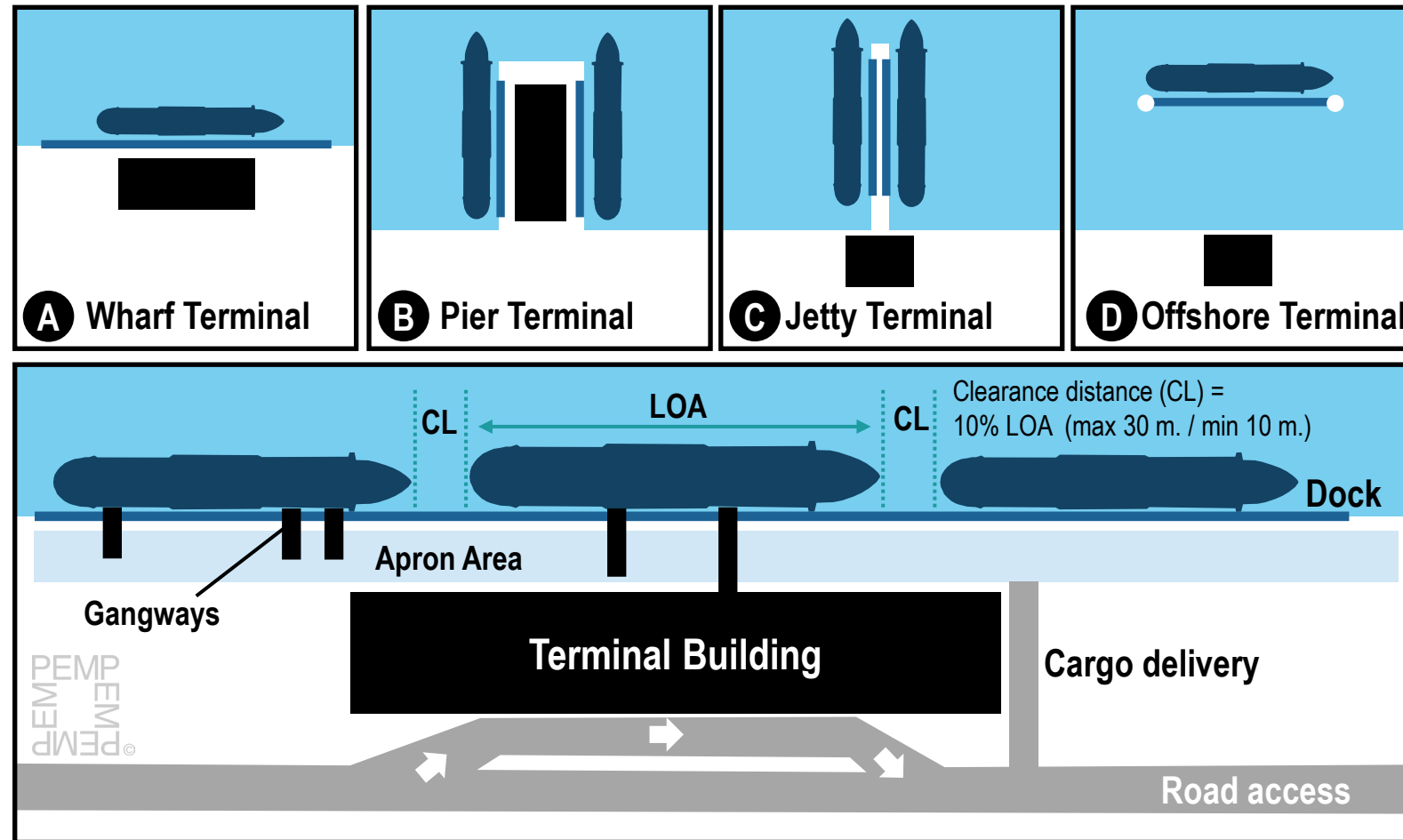
# The Operational Considerations of Cruise Terminals

- Port of call (transit)
  - Visited for only a few hours within a day, or overnight.
  - Fast and efficient system for transporting passengers to points of interest or recreational spots.
- Hybrid cruise ports
  - Used for both home-porting and transit activities.
  - Terminal is designed to handle both home-port and visitor flows simultaneously.

# Cruise Terminal Configuration



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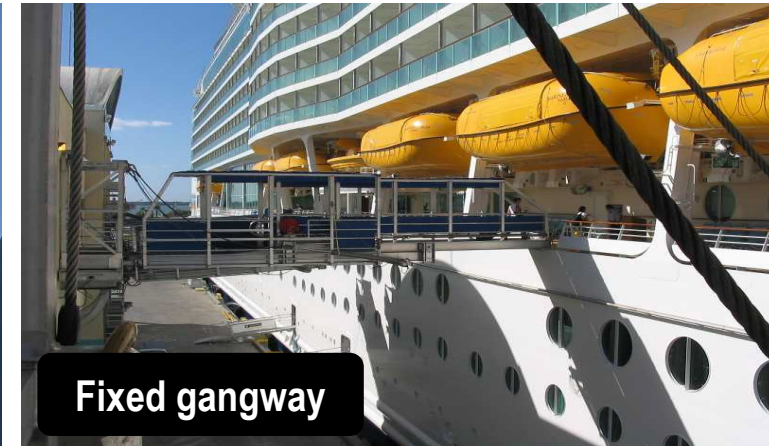
# Apron Area of the Cruise Terminal: Operations

- Stevedoring services
  - Line-handling, baggage movement, utility connections, and waste processing from the vessel.
  - Luggage is moved by forklift and baggage handling carriages between the ground floor of the cruise building and the luggage doors of the vessel.
- Supplies to the vessels
  - Serve the needs of passengers, crew, systems, and equipment.
  - Provisions arrive on trucks soon after the ship arrives at the berth.
- Access for vehicle circulation, parking, unloading, and loading/unloading equipment.
- Emergency vehicle access.

# Apron Area of the Cruise Terminal: Types of Cruise Gangways



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# Truck Unloading Ramps for Cruise Stores On-Dock Deliveries



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# Luggage Loading through a Cargo Door of a Cruise Ship



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# Apron Area of the Cruise Terminal: Vessel Utilities

- Bunkering for ship refueling.
- Waste reception facilities
  - Oily wastes, garbage from ships, and sewage.
- Potable water
  - A 3,500 passenger vessel: about 1.40 million gallons during a seven-day itinerary.
  - Onboard desalination systems, account for between 75% and 90% of water demand.
- Ballast water
- Energy
  - Shore power (cold ironing and LNG provisioning).

# Waste Reception from a Cruise Ship



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# Cruise Terminal Buildings

- Temporary cruise terminal buildings
  - In cruise ports with limited calls and only managed when a ship is in port.
  - Simple Vessel navigation and berthing, provisioning, passenger debarking, ship hoteling, passenger embarking, and vessel deployment.
  - No dedicated building for a cruise terminal.
  - Temporary event-type facilities.
  - Can be a transition facility while a permanent one is built.
- Convertible cruise terminal buildings
  - Hospitality, civic, commercial, retail, or warehousing as the primary function.
  - Managed on a day-of-cruise basis.
  - Before a ship berths, a specific cruise uses elements such as signage, furniture, equipment, and space-dividing materials that are set up for the cruise and then removed after the ship departs.
  - Immigration may be handled on the vessel rather than in the terminal.

# Temporary Cruise Terminal, Port of Hamburg



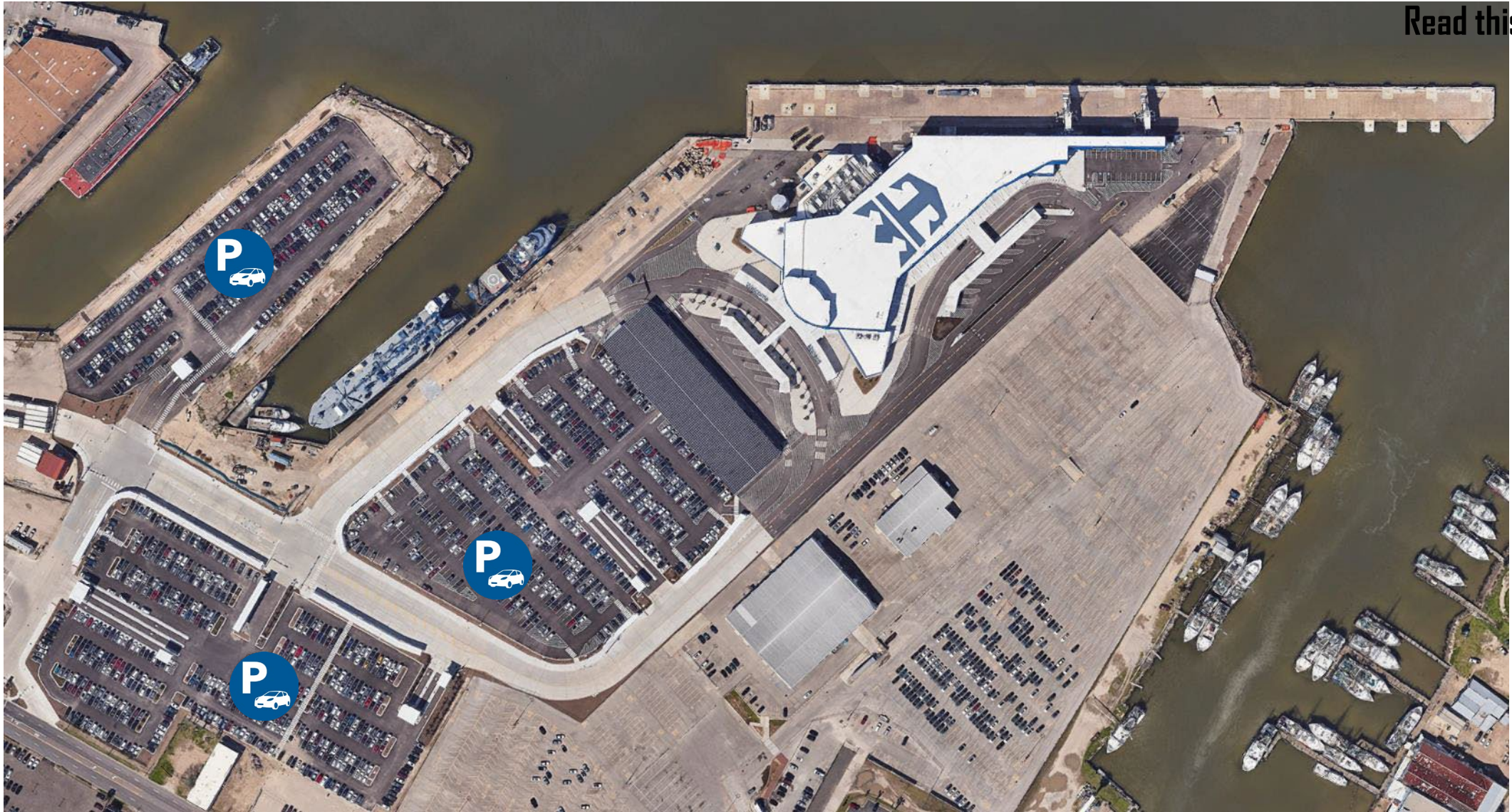
# Cruise Terminal Buildings

- Purpose-built cruise terminal buildings
  - Address the entire needs and functionality of cruises on both disembarkation and embarkation.
  - May be designed for dual use (embarking and debarking).
  - Designed and built for specific functionality.
  - Cruising remains the primary design and operational driver.
  - Optimize flow, heighten passenger satisfaction, minimize staffing levels, and maintain security.
  - Part of a larger port community or a combined waterfront context, but they stand alone and usually offer no other uses when no ship is at berth.

# Royal Caribbean Galveston Cruise Terminal



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# Cruise Terminal Buildings

- Mixed-use cruise terminal buildings
  - Most developed response to cruise tourism, along with the need to serve a waterfront community.
  - Multi-functionality that a single building can provide, all the necessary elements of a purpose-built terminal.
  - Other uses such as shopping areas, commercial areas, theaters, and conventions.
  - Economics of capital investment, operating costs, and revenue streams are combined to benefit from multiple uses.
  - Increased use, greater revenue, heightened visibility, and a stronger tourism market.

# Mixed-Use Cruise Facility, Vancouver



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# Embarkation and Disembarkation Processes

- Areas and services in embarkation
  - Entrance space
    - Gathering area for passengers, providing shelter from the weather, a place to seek information, and a queueing area.
    - Brand identification.
  - Bag drop space
    - For security check and organized prior to loading onto the ship.
  - Luggage security controls (X-ray scanners)
    - Allow thorough luggage monitoring.
  - Passenger security controls (passenger X-ray lanes)
    - Operating schedules are adapted to the size of traffic, peak hours, and other local and cruise-ship requirements.
  - Check-in area
    - Process passengers for the designated cruise trip.
    - The use of new technologies, such as mobile applications or bar-coded wristbands.
  - Waiting areas
    - Act as a buffer in the boarding process.
  - Boarding corridors
    - Where passengers move toward the vessel.
  - Staff offices
    - For cruise operator staff, cruise line personnel, and port security personnel.

# Main Entrance Hall, Royal Caribbean Cruise Terminal, Galveston



# Passenger Security Control, Royal Caribbean Cruise Terminal, Galveston



# Passenger Waiting Area, Royal Caribbean Cruise Terminal, Galveston



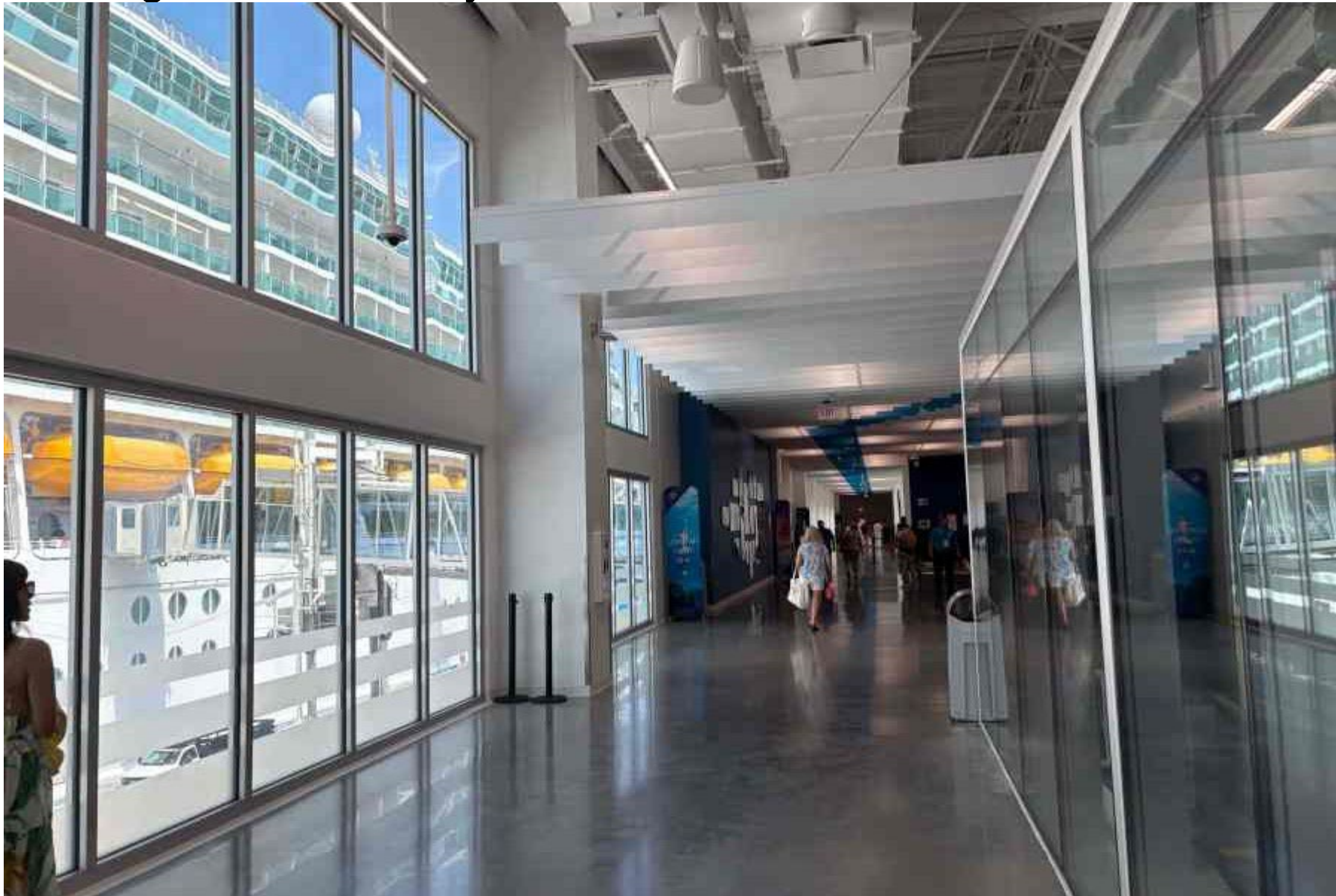
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# Cruise Boarding Corridor, Royal Caribbean Cruise Terminal, Galveston



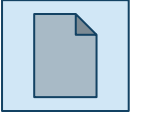
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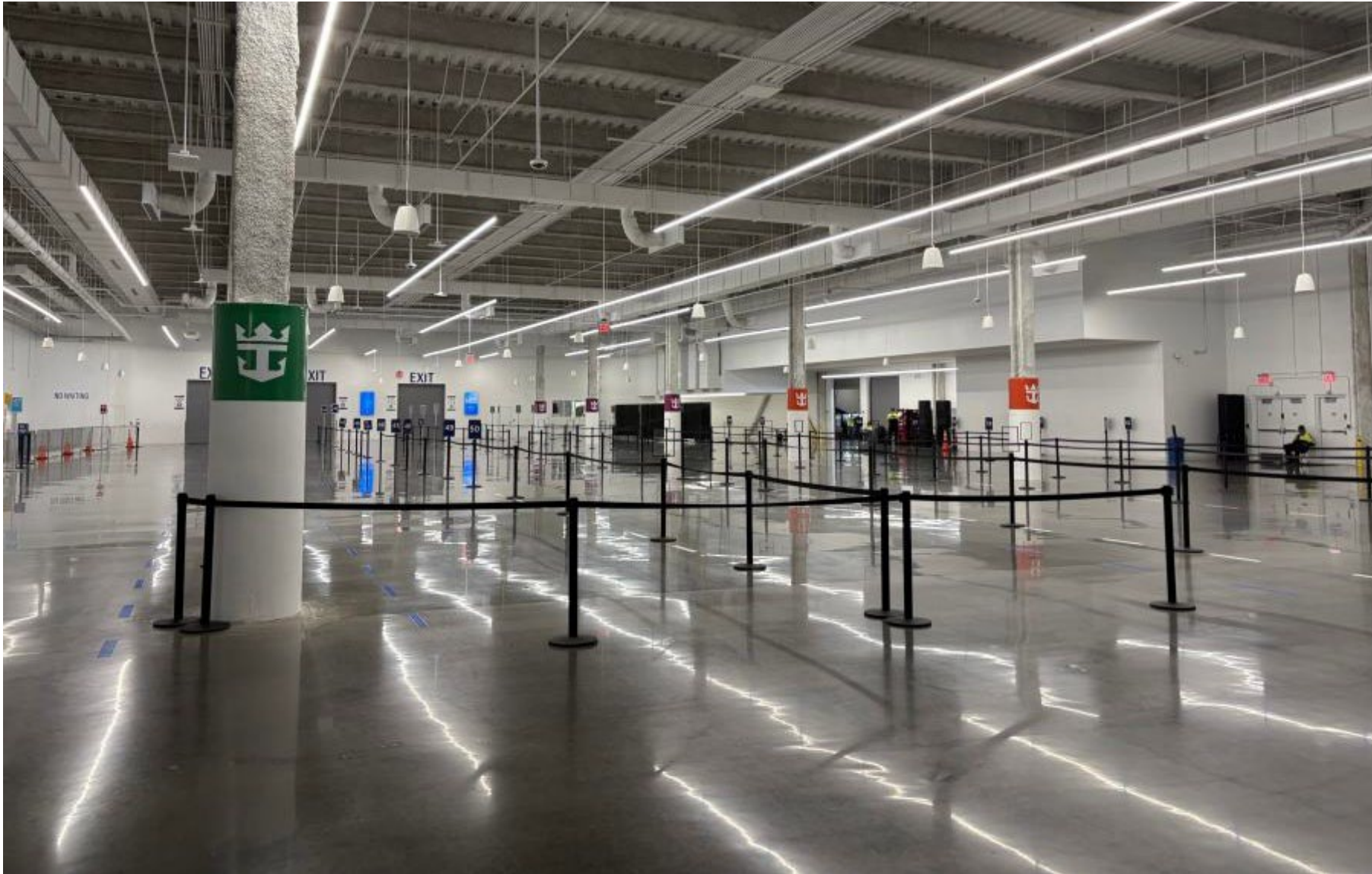
# Embarkation and Disembarkation Processes

- Disembarkation process
  - Customs, immigration, quarantine, and police spaces and processes.
  - Luggage lay-down areas
    - Often the single largest space in the building.
    - Luggage is brought directly from the ship according to deck level and grouped via a “lay-down” process that takes place before passengers enter the space.
    - Luggage waiting in different areas for each group of passengers.
  - Customs areas
    - Most cruises are international, requiring customs procedures at intermediate ports and at home ports.
  - Meeting spaces
    - Where passengers gather, meet with others, and transition to ground transportation.

# Luggage Lay-Down Area, Royal Caribbean Cruise Terminal, Galveston



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# Customs Clearance , Cruise Terminal 25, Gaveston



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# Ground Transportation

- Connectivity with the cruise port hinterland
  - Coach parking
    - Shuttle buses provided by the port or the cruise lines, tour buses provided by the ship, and independent excursion buses.
  - Taxi lines
    - With a comfortable space around the cars to facilitate loading and unloading.
  - Drop-off spaces
    - Such as a short-stay car park earmarked for people dropping off or picking up passengers.
  - Parking spaces
    - For passengers who drove to the terminal to take a cruise.
    - This is particularly important for cruise ports in the United States.
  - Regional and local connectivity.
    - Both the local and regional intermodal systems, such as airports, need to be connected to the home port by rail or road.