A Voyage Through Time

A Brief History of the Cruise Ship Industry



With
Rear Admiral (Retired) Simon Hardern

Global Passenger Movement Pre-1830 (ish)

Packet Ships

Scheduled sailing ships carrying mail, passengers and cargo, especially across the North Atlantic



Merchant Sailing Ships

Passengers often travelled aboard cargo vessels if space was available



East Indiaman

Large armed trading ships used by companies such as the East India Company, carrying officials, soldiers, merchants and passengers

Naval or Government Transports

Troops, officials, convicts and settlers often moved this way



The Dawn of Steam Power - 1830 to 1870

The cruise industry originated from ocean travel for necessity, revolutionised by steam power in the mid 1800s, transforming maritime transport forever

Steam Revolution

Steam power replaced wind, making ocean travel reliable and scheduled for the first time in history





Passenger Focus

Wealthy elites began using ships for leisure, creating demand for comfort and luxury at sea

Pioneering Steam Ships

1838 - SS Great Western



Designed by Isambard Kingdom Brunel, this ship marked a milestone in early passenger steamship design

1843 - SS Great Britain



The first iron-hulled, propeller-driven ocean liner, revolutionising ship construction and propulsion

1844 - SS Lady Mary Wood - First Pleasure Cruise



Peninsular Steam Navigation Company offered the first dedicated (but limited) ‘pleasure’ cruise (rather than simple transport) to the Mediterranean

1881 - SS Ceylon - First World Cruise



Refitted exclusively for global cruising, marking the transition from pure transport to leisure



SS LADY MARY WOOD
Length 49 m
Displacement 650 tonnes



HMS WALNEY
Length 53 m
Displacement 600 tonnes

Southampton
Gibraltar
Valletta
Piraeus
Constantinople (Istanbul)
Smyrna (Izmir)
Jaffa (Haifa)
Alexandria

An Excursion to the Mediterranean - 1844

Modern Cruising as We Understand it Began in 1891





Visionary Leadership

January 1891 - Albert Ballin of HAPAG sent the Augusta Victoria on a 57-day pleasure voyage with 241 passengers (paying the equivalent today of £45,000 to £65,000)

Mediterranean Route

Sailing from Cuxhaven, the voyage through Mediterranean ports established the concept of destination cruising

Historical Milestone

Considered the birth of the modern cruise industry as we know it today

Augusta Victoria's Cruise Route - I Rather Like It!



The Cruise Industry Visionary - Albert Ballin



Ballin's vision transformed sea travel from being practical to being a form of recreation that we know today. A foundation for the modern cruise industry was laid

The Golden Age - 1900 to 1939

Era of Floating Palaces

Characterised by fierce competition, technical innovation and ships becoming symbols of national prestige and luxury



Technical Innovation

Coal to oil-fired engines, stabilisers, enhanced refrigeration, air-conditioning and radio communications

Art Deco Luxury

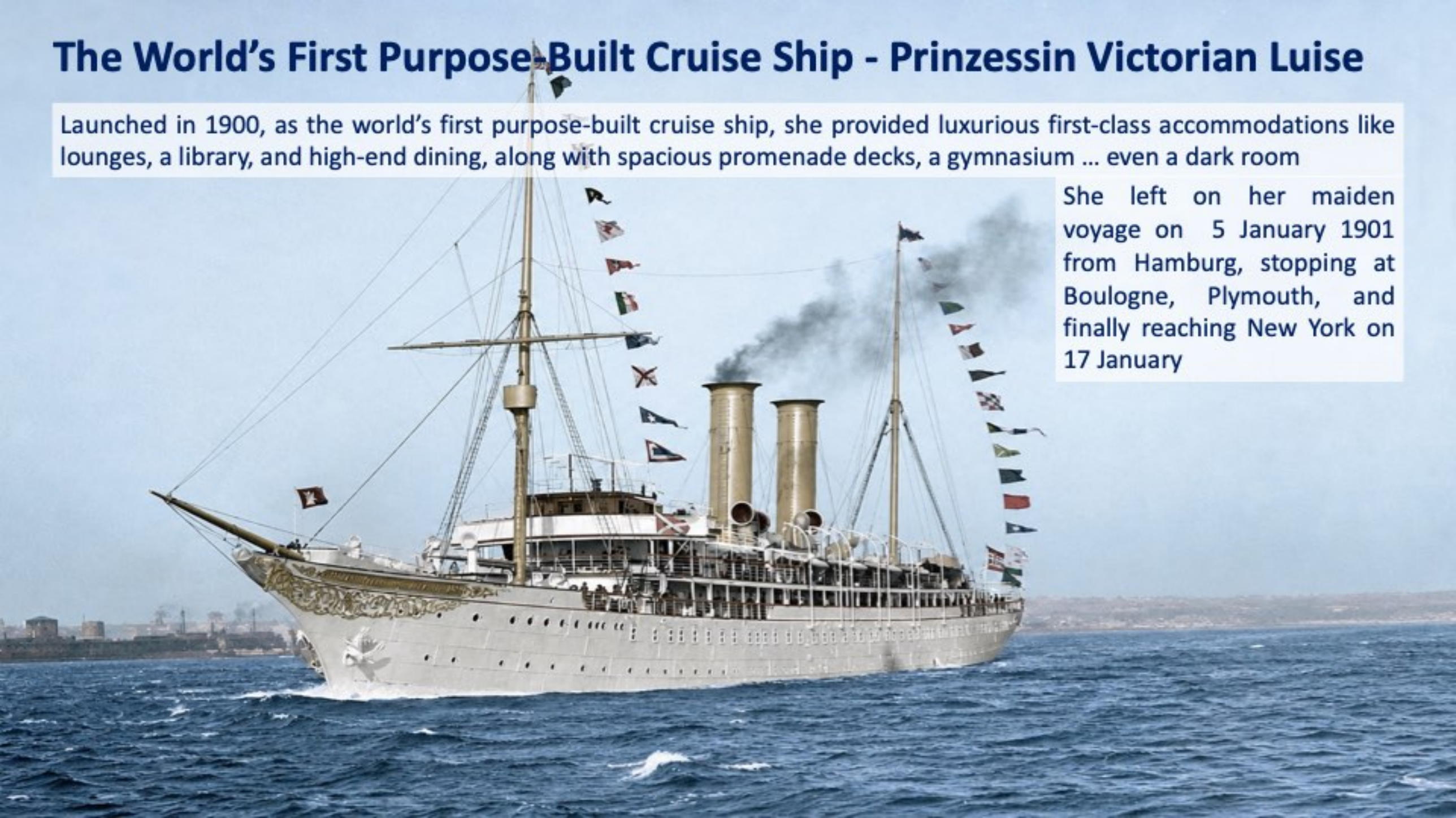
Ships designed as floating palaces with grand staircases, fine dining and opulent interiors

Blue Riband Race

Fierce competition for fastest Atlantic crossing

The World's First Purpose-Built Cruise Ship - Prinzessin Victorian Luise

Launched in 1900, as the world's first purpose-built cruise ship, she provided luxurious first-class accommodations like lounges, a library, and high-end dining, along with spacious promenade decks, a gymnasium … even a dark room



She left on her maiden voyage on 5 January 1901 from Hamburg, stopping at Boulogne, Plymouth, and finally reaching New York on 17 January

The Legendary Ships of the Golden Age

Ship	Year	Line	Significance
RMS Lusitania	1907	Cunard Line	Held Blue Riband for fastest Atlantic crossing from October 1907 for 2 years
RMS Mauretania	1907	Cunard Line	Sister ship, record-breaking speed and luxury. Held Blue Riband 1909-1929
RMS Titanic	1912	White Star Line	Ultimate luxury, maritime tragedy that changed safety
SS Normandie	1935	French Line	Art Deco masterpiece and technical marvel - considered the prettiest of all Liners
RMS Queen Mary	1936	Cunard Line	Symbol of British maritime excellence

5 days
Routine Atlantic Crossing

4 days
Fastest Atlantic Crossing

2,000+
Standard Passenger Capacity





BLUE RIBAND

Normandie held the Blue Riband in the 1930s and is often regarded as one of the most beautiful liners ever built

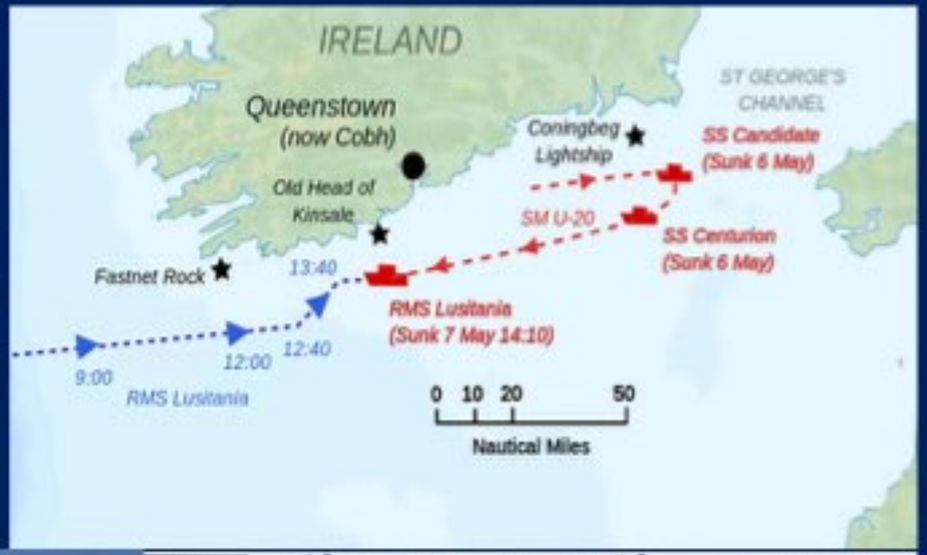
RMS Lusitania - One of Many Wartime Tragedies



7 September 1907 - RMS Lusitania makes its maiden voyage for Cunard

October to December 1907 - Took Blue Riband title Eastbound (24 Kts) (from Kaiser Wilhem III) and Westbound (23.5 kts)

7 May 1915 - The German U-boat U-20 sinks RMS Lusitania









The New York Times.

USITANIA SUNK BY A SUBMARINE, PROBABLY 1,000 DEAD.
TWICE TORPEDOED OFF IRISH COAST; SINKS IN 15 MINUTES;
AMERICANS ABOARD INCLUDED VANDERBILT AND FROHMAN;
WASHINGTON BELIEVES THAT A GRAVE CRISIS IS AT HAND

PS RUSH TO AID
F OCEAN LINER

SINKS IN QUARTER
OF AN HOUR

THE CUNARD LINER LUSITANIA

Cunard Office Has Wireless
News of the Disaster

NOTICE TO TRAVELERS

The Only Survivor
Tells Her Story

The Move to Oil Post the Great War

1905-1910 - Early Adoption

Some navies and commercial ships began fitting oil sprayers into coal-fired boilers to boost combustion

1912 - A Game-Changing Decision

Admiral Sir John Fisher, the then First Sea Lord, directed the Royal Navy to adopt pure oil firing for its newest capital ships

World War I - Oil Proves Superior

Oil-fired boilers gave ships quicker acceleration, higher sustained speeds and meant fewer stokers and no coal dust

When the war ended, major passenger lines like **Cunard** and **White Star Line** immediately began converting their grandest flagships to oil. In 1920, the White Star Line's **RMS Olympic** (Titanic's sister ship) was converted from coal to oil during a major post-war refit … reducing the number of stokers by 270!



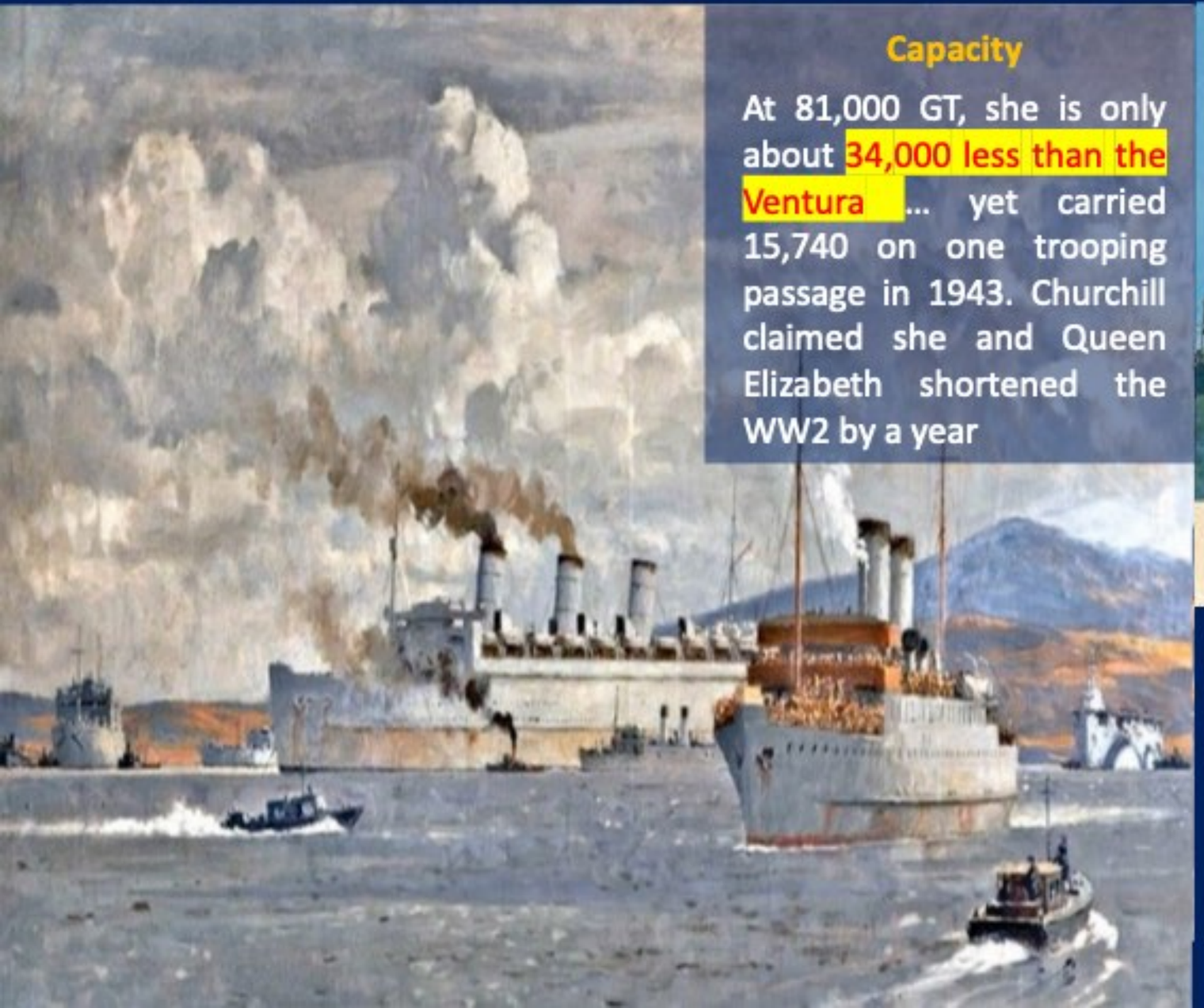
RMS Queen Mary

A Legend is Born

The launch of the RMS Queen Mary **on 26 September 1934** was one of the most celebrated maritime events of the 20th century. It represented a monumental triumph for British engineering and served as a powerful symbol of hope as the country came out of the Great Depression



RMS/T Queen Mary as a Wartime Troop Carrier



Capacity

At 81,000 GT, she is only about 34,000 less than the Ventura … yet carried 15,740 on one trooping passage in 1943. Churchill claimed she and Queen Elizabeth shortened the WW2 by a year



This unique and historic souvenir picture taken on September 27, 1946, shows the Queen Elizabeth (83,673 tons) ready for trials, being passed at Southampton by the Queen Mary (81,237 tons) in her wartime grey, returning from service as a troopship. The Queen Elizabeth is now a tourist attraction and convention centre at Port Everglades, Florida. The Queen Mary is to become a museum-hotel-convention centre at Long Beach, California.

Speed An Advantage

Because of her speed, she could outrun submarines, making her one of the Allies' most valuable 'grey ghosts'



A contemporary Cunard figure records 1,243,338 service personnel carried by RMS Queen Mary and RMS Queen Elizabeth by 31 May 1945

The Blue Riband - The Current Record Holder - SS United States

Maiden Voyage Record

The SS United States set the Blue Riband record for the fastest transatlantic crossing during her maiden voyage in July 1952. She completed the voyage from New York to Le Havre/Southampton in 3 days, 10 hours, and 40 minutes at an average speed of 35.6 knots, a record that remains unbroken (she unofficially made 38 knots during trials)



SS United States - an End … of Sorts

To Be Sunk as a Man-Made Reef

She saw service for only 17 years. The plan is to sink her deliberately as an artificial reef off Florida's Gulf Coast (in roughly 60 feet of water) on 12 November . She has been cleaned/prepared (remediated) in Mobile (Alabama). She is expected to become the largest artificial reef in the world







USS United States and RMS Queen Elzabeth 2 enter Southampton on 20 August 1969



- SS United States was built to defeat every other ocean liner across the Atlantic. She succeeded spectacularly
- QE2 was built to operate in a world where ocean liners were already losing to aircraft.

This explains why the world's fastest ocean liner was commercially finished after 17 years, while the slower QE2ed for 40 more years

Only One True Liner Remains - Cunard's Queen Mary 2



The Blue Ribband Honour Board

Ship	Line / Nation	Year	Route (Westbound)	Time	Speed (kts)
SS Sirius	British & American	1838	Cork → Sandy Hook	18d 14h 22m	8.03
SS Great Western	Great Western (British)	1843	Liverpool → New York	12d 18h 00m	10.03
SS Baltic	Collins (American)	1854	Liverpool → New York	9d 16h 52m	13.04
SS Scotia	Cunard (British)	1863	Queenstown → New York	8d 03h 00m	14.46
SS Alaska	Guion (British)	1883	Queenstown → Sandy Hook	6d 23h 48m	17.05
RMS Etruria	Cunard (British)	1888	Queenstown → Sandy Hook	6d 01h 55m	19.56
RMS Lucania	Cunard (British)	1894	Queenstown → Sandy Hook	5d 07h 23m	21.81
Kaiser Wilhelm der Grosse	Norddeutscher Lloyd (German)	1898	Needles → Sandy Hook	5d 20h 00m	22.29
SS Deutschland	Hamburg America (German)	1903	Cherbourg → Sandy Hook	5d 11h 54m	23.15
RMS Lusitania	Cunard (British)	1907	Queenstown → Ambrose	4d 16h 40m	25.65
RMS Mauretania	Cunard (British)	1909	Queenstown → Ambrose	4d 10h 51m	26.06
SS Bremen	NDL (German)	1929	Cherbourg → Ambrose	4d 17h 42m	27.83
SS Rex	Italia (Italian)	1933	Gibraltar → Ambrose	4d 13h 58m	28.92
SS Normandie	French Line (French)	1937	Bishop Rock → Ambrose	3d 23h 02m	30.58
RMS Queen Mary	Cunard White Star (British)	1938	Bishop Rock → Ambrose	3d 21h 48m	30.99
SS United States ★	United States Lines (American)	1952	Bishop Rock → Ambrose	3d 12h 12m	34.51

RMS Titanic - The Opulence and Luxury

A ship of grand staircases, Turkish baths, squash courts and opulent dining rooms for first-class passengers





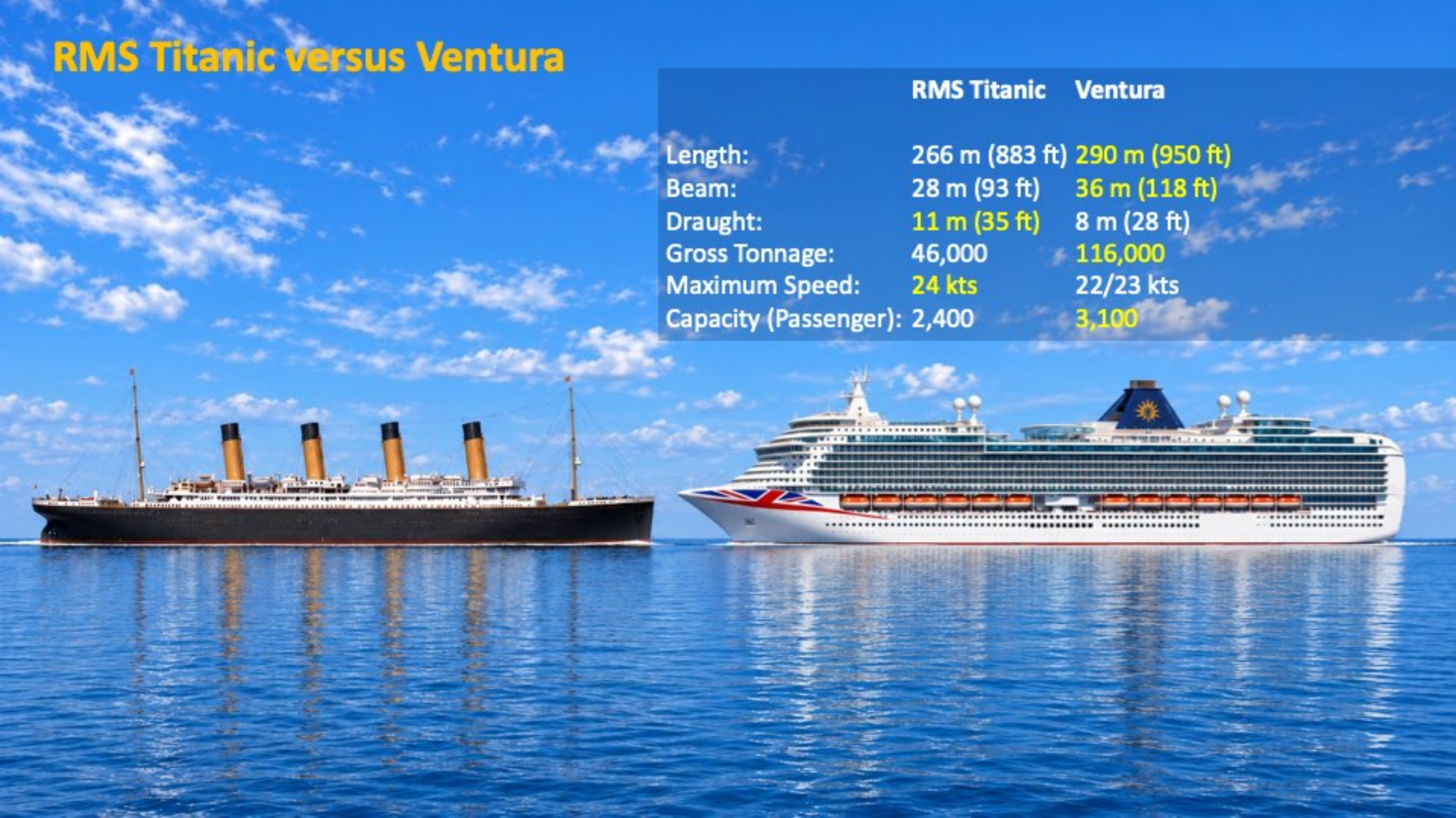






RMS Titanic versus Ventura

	RMS Titanic	Ventura
Length:	266 m (883 ft)	290 m (950 ft)
Beam:	28 m (93 ft)	36 m (118 ft)
Draught:	11 m (35 ft)	8 m (28 ft)
Gross Tonnage:	46,000	116,000
Maximum Speed:	24 kts	22/23 kts
Capacity (Passenger):	2,400	3,100




P&O CRUISES

… And I Always Wanted to Know!



RMS Titanic Tragedy - Could It Happen Again?



RMS **Titanic** struck an iceberg in the North Atlantic **on 14 April 1912** while sailing from Southampton to New York on her maiden voyage. Of roughly 2,200 people aboard, more than 1,500 died

Well … Accidents Still Do Happen (1965 to 2026)

Year	Ship	Incident	Casualties	Location	Key Impact
1965	Yarmouth Castle	Fire and Sinking	90 deaths	Bahamas	Fire safety regulations overhauled
1979	Angelina Lauro	Fire	0 deaths	St Thomas	Led to improved fire suppression systems
1990	Scandinavian Star	Fire	159 deaths	Skagerrak	Major safety protocol changes
1991	Mardi Gras	Grounding	0 deaths	Miami	Improved navigation training
1995	Sun Vista	Fire and Sinking	0 deaths	Malaysia	Enhanced fire detection systems
1999	Ecstasy	Fire	0 deaths	Miami	Improved emergency response
2000	SeaBreeze	Sinking	0 deaths	Virginia	Led to stricter maintenance standards
2006	Star Princess	Fire	1 death	Jamaica	Balcony fire safety regulations
2012	Costa Concordia	Grounding	32 deaths	Italy	Navigational oversight and evacuation procedures
2013	Carnival Triumph	Engine Fire	0 deaths	Gulf of Mexico	The Poop Cruise. Improved backup power systems
2019	Viking Sky	Engine Failure	0 deaths	Norway	Enhanced engine reliability standards
2022	Emerald Princess	Fire	0 deaths	Alaska	Improved fire containment systems
2023	Ocean Explorer	Grounding	0 deaths	Greenland	Enhanced navigation standards in polar waters
2024	Nieuw Amsterdam	Steam Release	0 deaths	Bahamas	Review of engineering spaces safety protocols

The answer is yes, they do happen, but not very often



P&O CRUISES

7 April 1990 - MS Scandinavian Star caught fire (arson) in the Skagerrak while on an overnight crossing from Oslo to Frederikshavn in Denmark, killing 159 people



23 March 2006 - A fire broke out aboard **Star Princess** (discarded cigarette set fire to combustible plastic furniture) while she was on passage from Grand Cayman to Montego Bay, killing one person (smoke inhalation)



13 January 2012 - Costa Concordia struck the Le Scole reef off Giglio, tearing a 53-metre gash in the port hull that caused the ship to capsize, killing 32 people



Ship Accidents Involving Deaths - 1990 to 2025



Modern Safety Standards



99.99%
Safety Record



Safety Feature	Mandatory Requirement	Technology	Impact
Lifeboats	125% capacity (SOLAS Convention)	Enclosed Lifeboats	All-Weather Evacuation
Fire Safety	Automatic Suppression	Hi-fog Systems	Rapid Response Capability
Navigation	ECDIS Mandatory	Electronic Charts	Precision Navigation
Communication	Global Maritime Distress Safety System	Satellite Systems	Global Coverage
Ship Design	Double Hulls and Watertight Doors	Construction and Software	Design Safety
Stability	Damage Stability	Advanced Software	Design Safety

Safety Record

- 170-200 passengers per year on average die at sea
- **Extremely low fatality rate**: Cruise deaths are estimated at fewer than 1 in 6 million passengers, far lower than air, road or rail travel
- **Strict regulation**: Cruise ships operate under international safety frameworks like SOLAS (Safety of Life at Sea)
- **Highly trained crews**: Every crew member undergoes safety and evacuation training, and ships must carry enough lifeboat capacity for all onboard
- **Advanced technology**: Modern ships use redundant navigation, fire suppression and medical systems

Modern Safety Technologies versus the Titanic Era

Transformation

Technology has transformed maritime safety from reactive to proactive, making disasters virtually impossible



Ice Detection Radar

Advanced radar systems detect icebergs 50+ miles away vs Titanic's lookouts with binoculars (which were missing anyway!)



Global Communication

Satellite communication provides instant worldwide alerts vs Titanic's limited wireless range



Weather Forecasting

7-day advance weather and ice condition forecasts vs Titanic's basic weather reports



The Time of Liners was Closing by the mid-1960s



Post War to 1970 - Changes Were Coming



Aviation Revolution

Commercial aviation began to make ocean liners obsolete for transport, forcing industry transformation

Leisure Pivot

Companies like Cunard and P&O began marketing ships again for pleasure cruising instead of liner transport

New Destinations

A shift from Atlantic crossings to Caribbean and Mediterranean leisure routes was made

Pioneers of the Modern Cruise Era - 1970 to 2000 - What it Looked Like



Caribbean Focus

Royal Caribbean's Song of Norway in 1970 pioneered purpose-built cruise ships with open decks



Grandeur Returns

In 1978 , NCL's Norway (formerly SS France) brought back ocean liner luxury to the cruise experience

The Fun Ships

Carnival's 1972 marketing of Mardo Gras emphasised entertainment and accessibility for middle-class passengers



1,900%

Industry Growth 1970-2000

Sovereign of the Seas

Cruise ship sizes on the increase (over 70,000 GRT) and the first real floating resort



10M

Annual Passengers by 2000

Then Came the Megaship Era - 2000 to 2010







And Finally the Giant Ship Era - 2010 Onwards

Ship	Year	Capacity	Tonnage	Innovation
Oasis of the Seas	2009	6,296	225,282	First ship over 225,000 tons
Allure of the Seas	2010	6,296	225,282	Neighborhood concept with Central Park
Quantum of the Seas	2014	4,905	168,666	First smart ship with high-tech features
AIDAnova	2018	6,654	183,900	First LNG-powered cruise ship
Wonder of the Seas	2022	6,988	236,857	Largest cruise ship in the world
Icon of The Seas	2024	7,600	248,663	New Largest ship in the world; LNG powered

37.2M

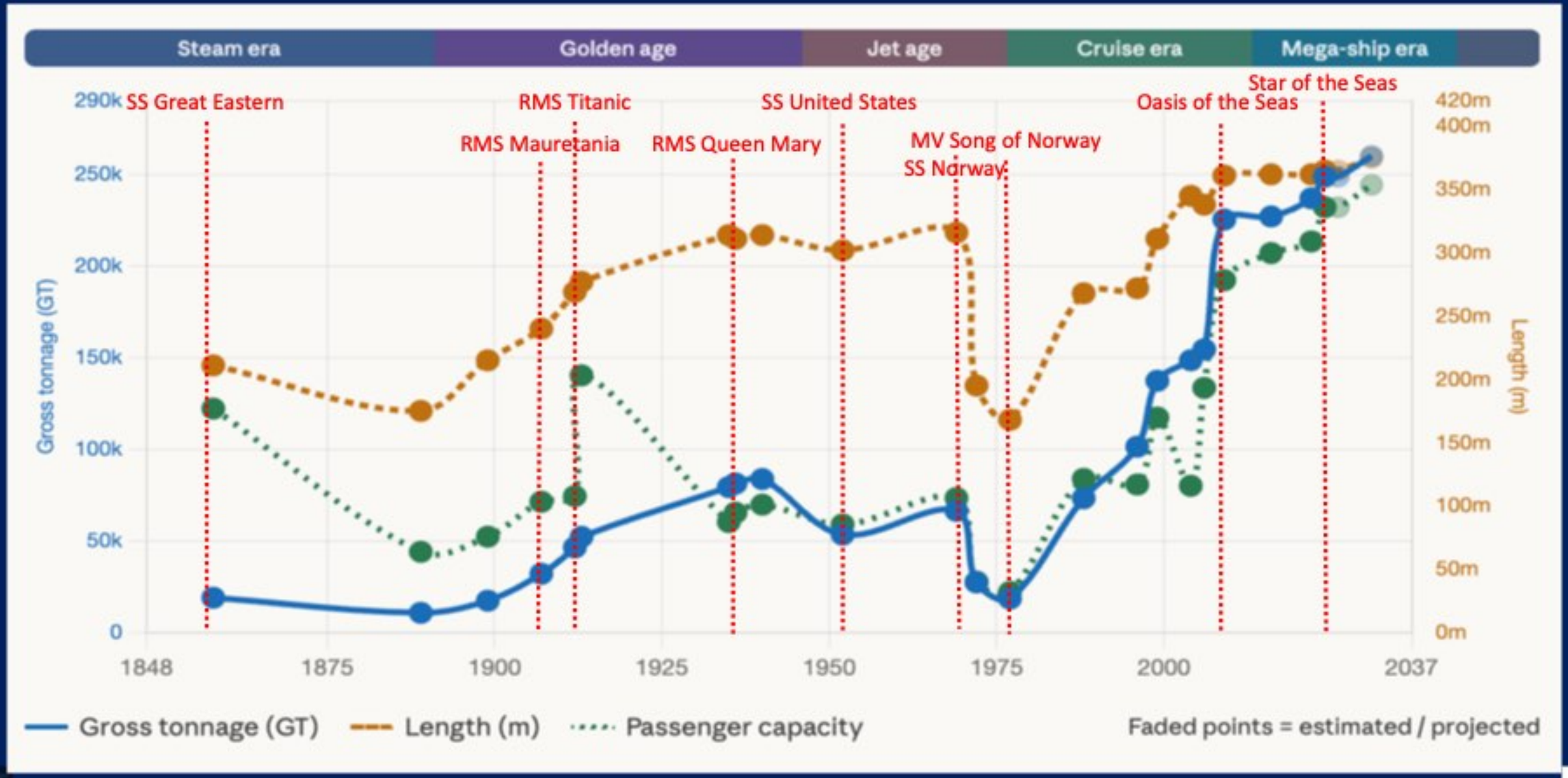
Annual Passengers in 2025

350

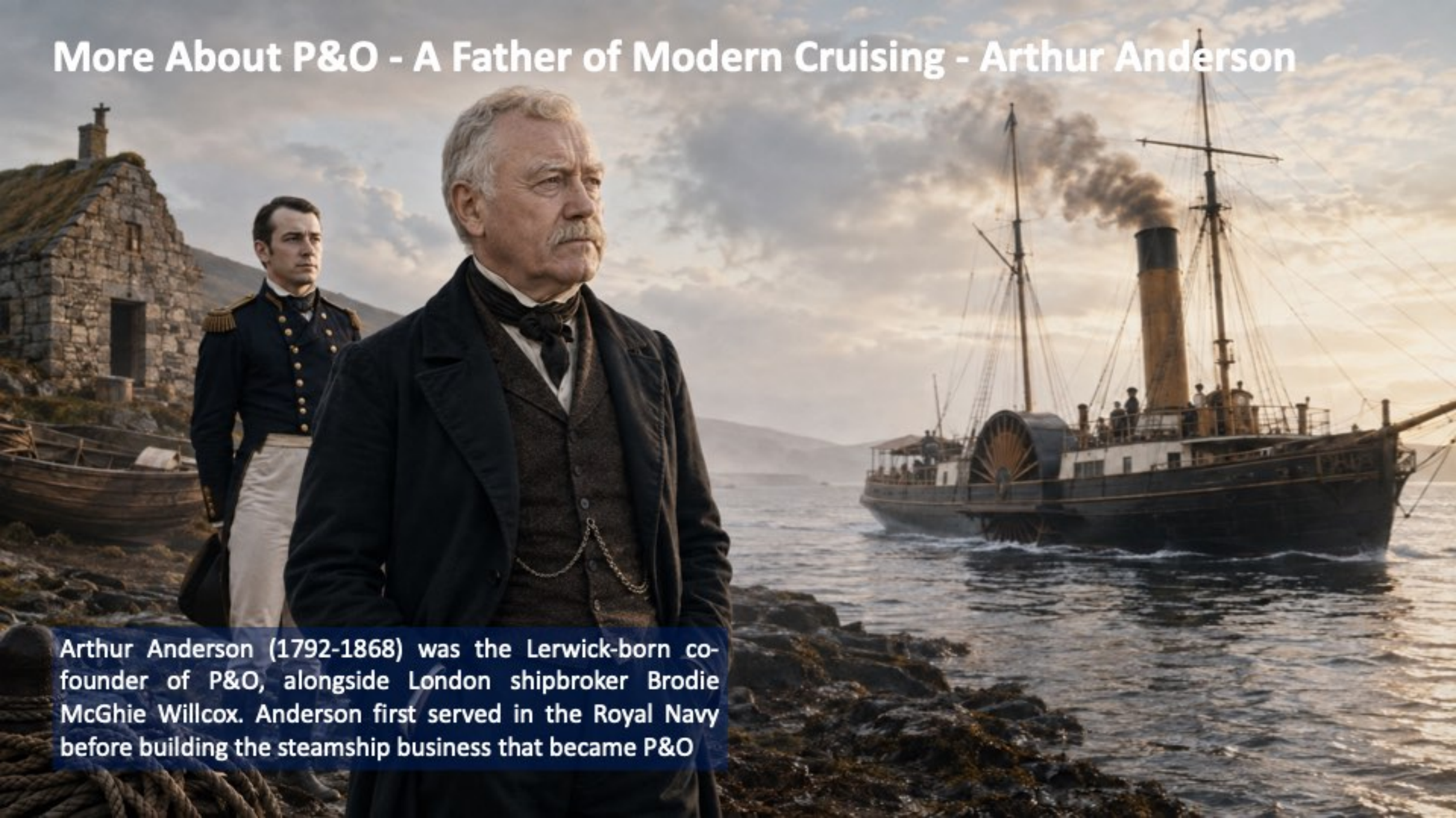
Cruise Ships Worldwide by end of 2025

(Cruise Line International Association Members at 325 ships)

175 Years of Dimensional Change



More About P&O - A Father of Modern Cruising - Arthur Anderson



Arthur Anderson (1792-1868) was the Lerwick-born co-founder of P&O, alongside London shipbroker Brodie McGhie Willcox. Anderson first served in the Royal Navy before building the steamship business that became P&O

P&O Cruise History

1949-1974 - SS Himalaya



1954-1979 - SS Arcadia



Founded in 1837 as a British mail-and-passenger steamship company, it began offering limited Mediterranean leisure voyages in 1844 - combining sea travel, port calls, sightseeing, and excursions. That made it an important forerunner of the holiday cruise. For this reason, P&O is generally regarded as the world's oldest cruise line, though its early voyages were adapted commercial steamship services rather than purpose-built modern cruise ships



1960-1986 - SS Oriana ('Queen of the Seas')



1961-1997 - SS Canberra

SS Canberra - The Great White Whale - I Can Get Emotional Remembering Her!

Yard Number 1621 - Harland & Wolff Belfast - 1959




Launch - 16 March 1960
CANBERRA

Maiden Voyage (to Sydney via Colombo, Freemantle and Melbourne) - 2 June 1961



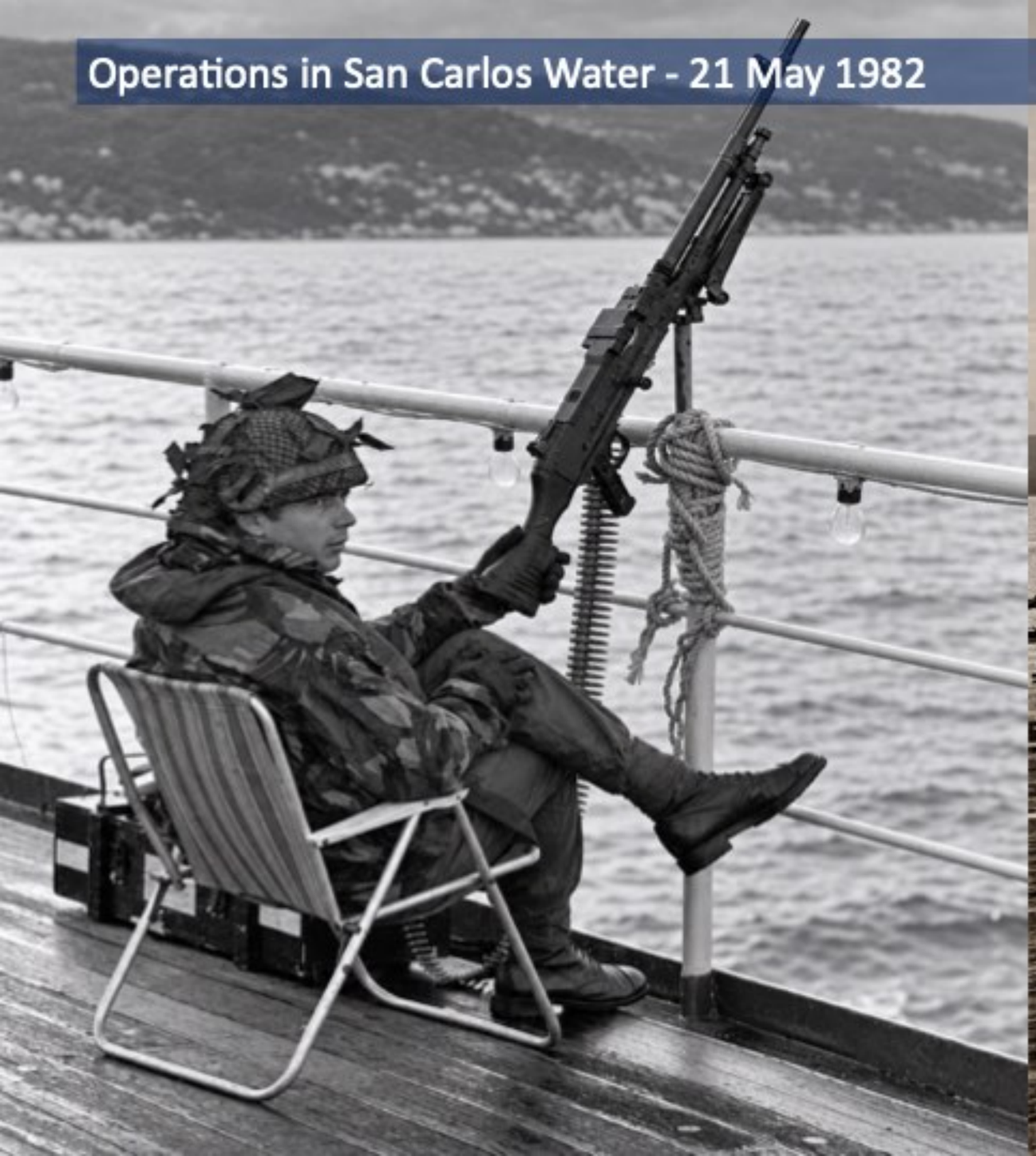

Refuelling from RFA PLUMLEAF - Falkland's Task Force - 1 May 1982 - South of Ascension Island
CANBERRA

Hosting 846 Naval Air Squadron - Westland Sea King Commando Helicopter Support




At Anchor in San Carlos Water, Falklands - Under Protection of HMS ANDROMEDA - 21 May 1982

Operations in San Carlos Water - 21 May 1982





Return to Southampton with 3,000 Service Personnel Onboard - 11 July 1982




Ship Breakers - Gadani Beach Pakistan - 1997
This always causes me some distress

The P&O Cruise Fleet Today



Arvia (2022)

Iona (2020)

Britannia (2015)

Azura (2010)

Ventura (2008)

Arcadia (2005)

Aurora (2000)

Average ages of the P&O, Cunard and Princess Fleets are now about 14.5 years (and the average for entire Carnival Group)

In 2028, the Arcadia will transition to Holland America and Cunard's Queen Anne will move to P&O



What Queen Anne might look like under P&O colours

Evolution of Cruise Destinations

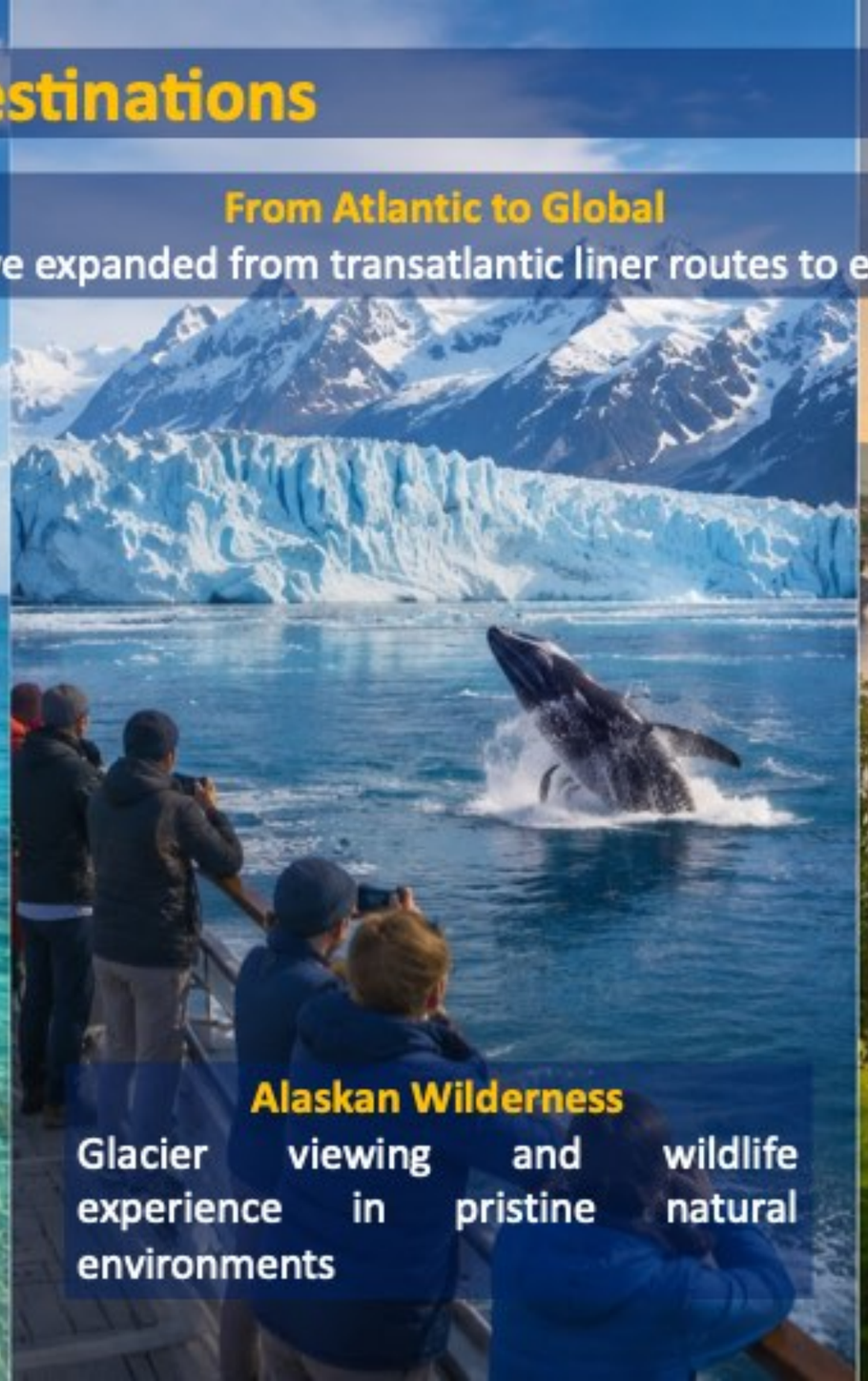
From Atlantic to Global

Cruise destinations have expanded from transatlantic liner routes to every corner of the globe



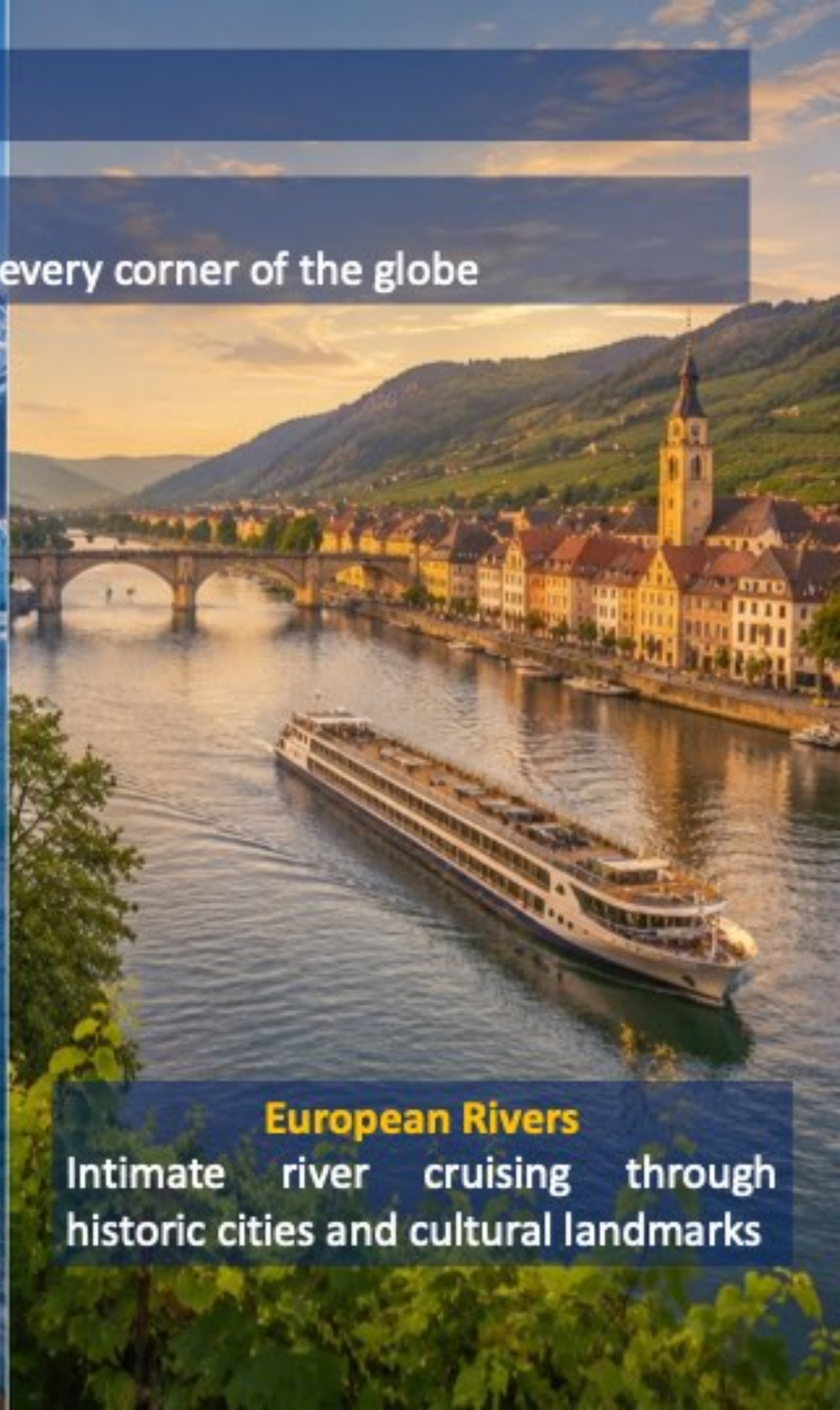
Caribbean Experience

Most popular cruise destination with crystal waters and island-hopping itineraries



Alaskan Wilderness

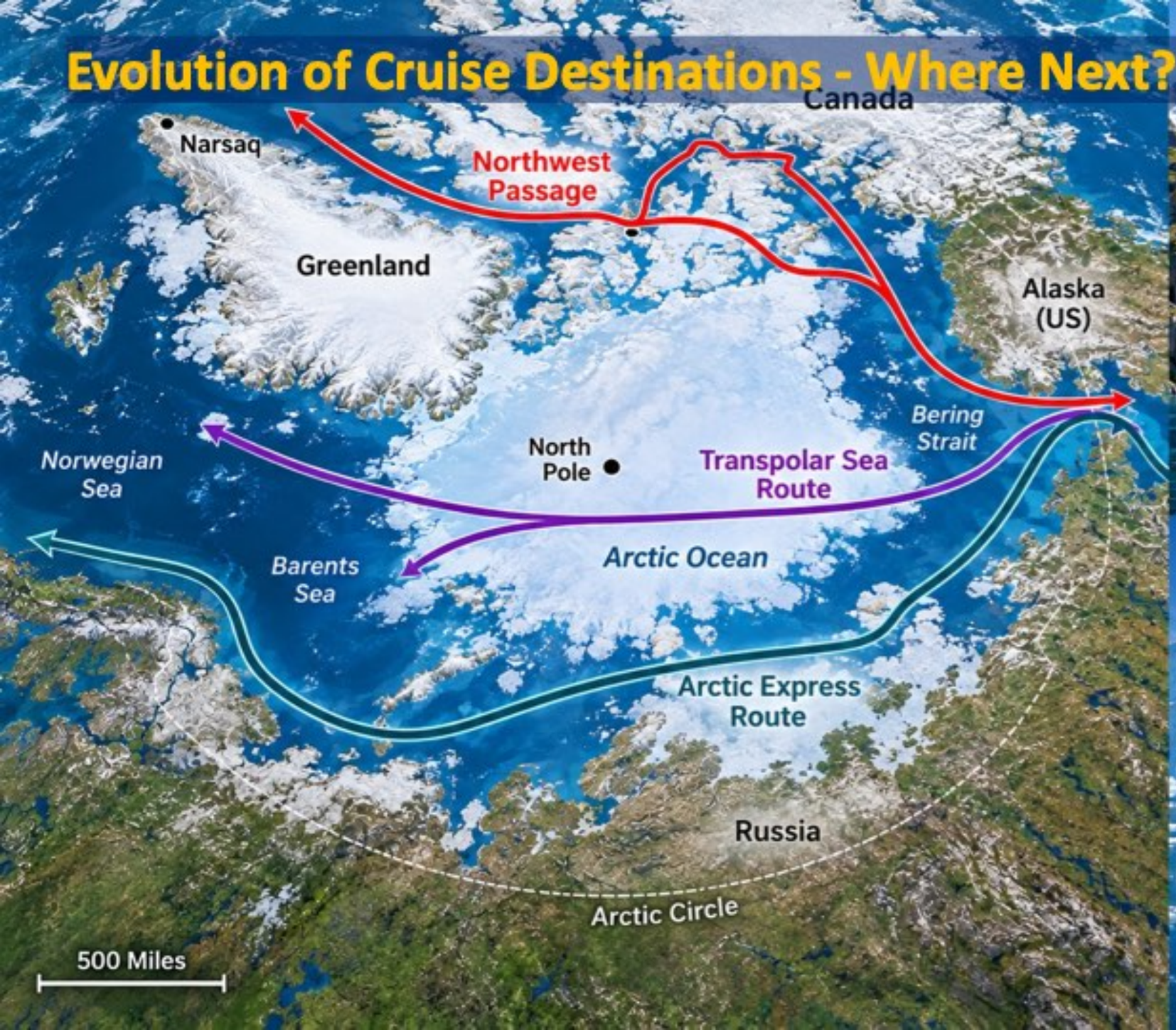
Glacier viewing and wildlife experience in pristine natural environments



European Rivers

Intimate river cruising through historic cities and cultural landmarks

Evolution of Cruise Destinations - Where Next?











Architectural Marvels

The modern cruise industry has blossomed by making ocean voyages fun, accessible, and appealing to new generations



Central Park
Royal Caribbean's open-air garden with 12,000+ live plants and trees at sea



AquaDuck
Disney's first water coaster at sea, winding around the ship's upper decks



North Star
Royal Caribbean's glass observation capsule rising 300 feet above sea level

Cuisine Evolution at Sea



Celebrity Chefs

Partnerships with Michelin-starred chefs and renowned restaurants

From Galleys to Gourmet

Cruise dining has evolved from basic ship fare to world-class culinary experiences



Specialty Dining

Diverse restaurants from sushi bars, Indian cuisine to steak houses on every ship



Dietary Options

Vegan, gluten-free and special dietary accommodations

Entertainment Revolution











And, of course, **amazing Guest Speakers!**

Broadway at Sea

Full-scale productions with professional casts

Live Music

Multiple venues from jazz clubs to rock concerts

Interior Design Evolution



1938
Grand
Ocean Liner Elegance



1968
Modernist
Lounge Culture



2000
Atrium-Centered
Mega-Ship Design



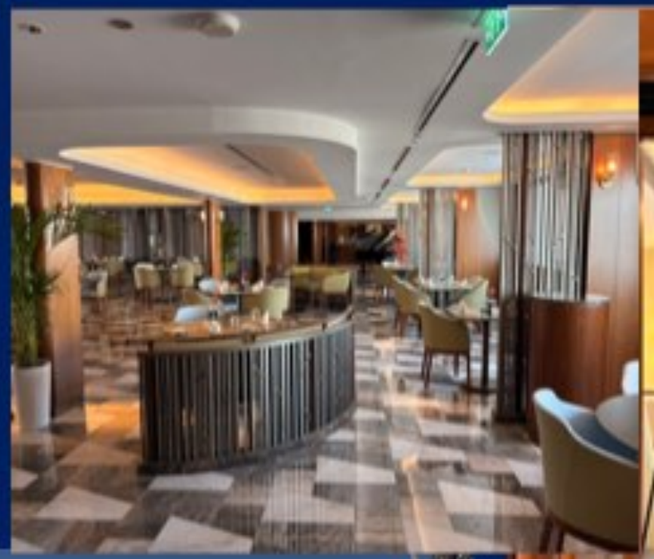
2021
Immersive
Experience Architecture

RMS Queen Elizabeth 2 (now a hotel in Dubai)















What You Might Have Been (or are) Wearing!















Smart Ship Revolution - Trying to Enhance Passenger Experience



Technology Integration

Cruise ships delivered today feature AI, wearable devices, and personalised experiences for the 21st century traveller

AI Services

Virtual assistants, facial recognition and more personalised support

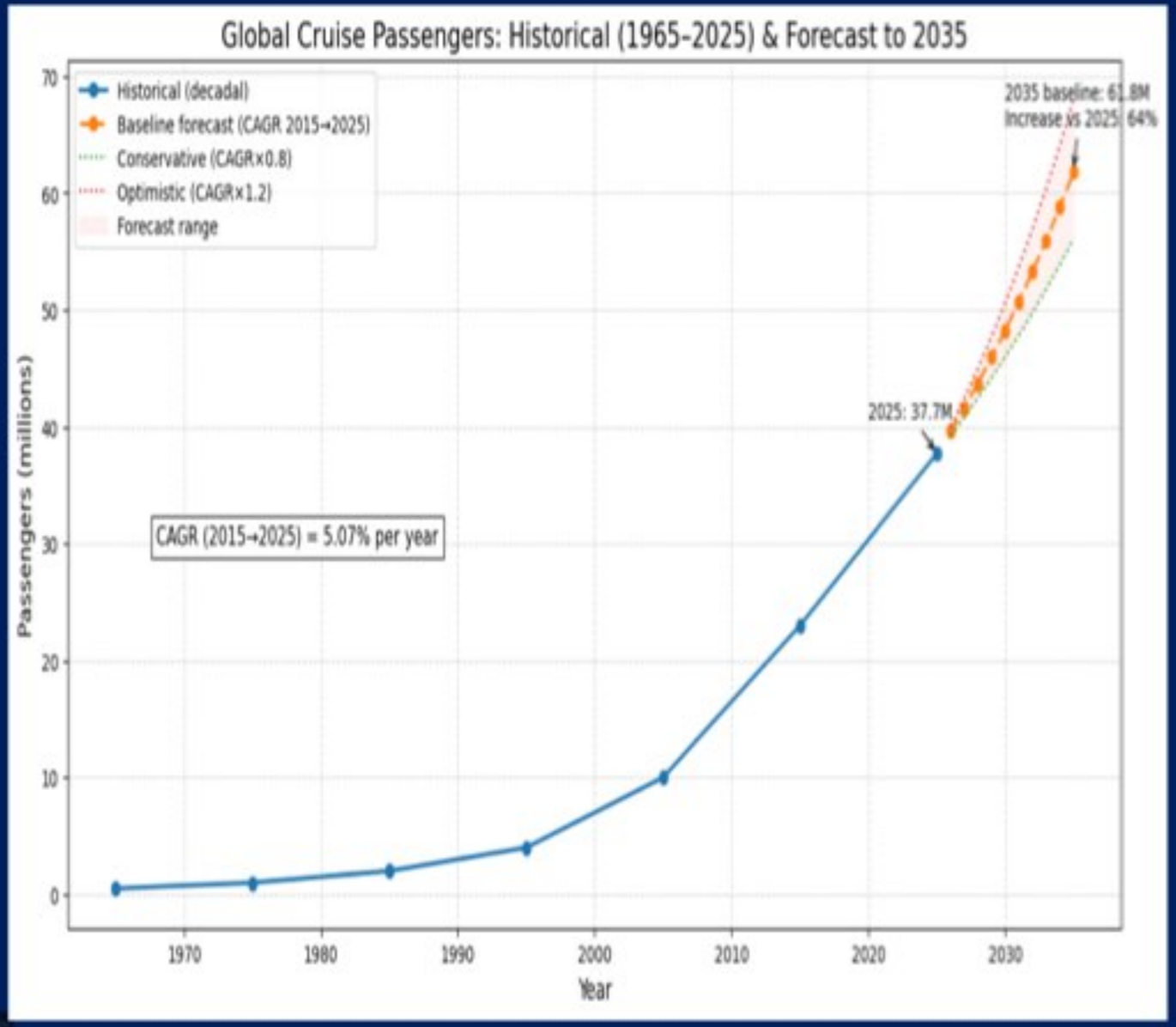
Connected Experience

High-speed internet, mobile apps and wearable technology throughout the ship

Other Digital Innovation

Keyless entry, mobile payments and real-time service requests

Cruise Ship Passenger Growth - 1965-2035



Growth Insights

Cruise passenger numbers have grown exponentially **from 500,000 in 1965 to just over 37 million in 2025**, representing a 70-fold increase. The industry projects continued growth to 46 million by 2035, driven by emerging markets and new demographics

1990s-2000s - Market doubled every 10 years

2020 - COVID-19 temporary decline

2025 - Record 35.2 million passengers

2035 - Projected 46 million passengers

And Why the 4 Main Global Cruise Turnaround Ports are so Busy

In 2025, Southampton Miami, Fort Lauderdale and Barcelona and Southampton together handled more than 20 million cruise-passenger movements and around 3,600 ship calls (or about 60% of all passengers)


Southampton


Miami


Barcelona


Fort Lauderdale

British Passenger Overview - Key Insights

Record 2025 - 2.54m passengers (about 8% of global total) - a new all-time high (up 7% on 2024's previous record)

Second Globally - UK is the world's 2nd largest cruise source market, behind only North America - ahead of Germany and Italy

Longest Cruises - British passengers cruise longer than any other nationality - averaging 9.6 days per voyage

Getting Younger - Average age fell from 57 in 2019 to about 54 in 2024. Children under 12 up 7%

Fly-Cruise Growing - Caribbean up 12% in 2025. Roughly equal split between fly-cruise and exclusive UK sailings



Cruise Miles Sailed Each Year

Each Ship

Does enough nautical miles per year to go around the world 4 times





Global Cruise Fleet

~350

Ships

Sails Approximately

25–33

Billion Nm
Per Year

Circles The Earth

~1.3 Million

Times Per Year



or …

about **22 return trips to Saturn** (give or take)!

Major Cruise Line Fleet Overview as of 2026

Cruise Line	Parent Company	Fleet Size	Market Focus	Newest Ship
Carnival Cruise Line	Carnival Corp	29 ships	Mass Market	Carnival Jubilee
Princess Cruises	Carnival Corp	17 ships	Premium	Star Princess
Royal Caribbean	Royal Caribbean Group	29 ships	Mass Market	Legend of the Seas
Celebrity Cruises	Royal Caribbean Group	16 ships	Premium	Celebrity Xcel
Norwegian Cruise Line	NCLH	21 ships	Freestyle	Norwegian Luna
MSC Cruises	MSC Group	23 ships	European	MSC World America
Holland America	Carnival Corp	11 ships	Premium	Rotterdam

Major Cruise Line Group Revenue - 2000-2025

Year	Carnival Corp ($B)	Royal Caribbean ($B)	Norwegian ($B)	Industry Total ($B)
2000	2.1	1.8	0.3	4.2
2005	3.8	2.9	0.7	7.4
2010	5.1	4.2	1.1	10.4
2015	7.8	6.1	1.8	15.7
2019	20.8	11.0	6.5	38.3
2020	-10.2	-5.8	-4.5	-20.5
2021	-6.5	-4.0	-3.1	-13.6
2022	4.9	2.2	0.8	7.9
2023	21.6	13.9	8.5	44
2024	25	16.5	9.5	51
2025	26.6	18	9.7	54.3

1,275%

Total Growth 2000-2025

$54.3B

2025 Revenue

Global Economic Impact

1.8 M Jobs

Counting all direct, indirect and induced employment effects

$60 Bn in Wages

Contribution

$198 Bn Impact

Total economic contribution worldwide including supply chains

Future of Cruising

Innovation Horizon

The next decade or so promises revolutionary changes in sustainability, technology and guest experience



Alternative Fuels

Hydrogen fuel cells, battery power, and synthetic fuels and small nuclear fusion reactors for zero-emission cruising

AI Integration into Operations

Fully autonomous systems, predictive maintenance - but no unmanned bridges

Next Generation Ships







2025 - Grow LNG Fleet

Majority of new builds will use liquefied natural gas for cleaner operations

2030 - Hybrid Power

Battery and fuel cell integration for port operations and coastal cruising

2035 - Zero Emission

First fully carbon-neutral cruise ships entering service

Global Co_2 Emitters - The League Table

Rank	Emitter	Mt CO_2 (2023)	Global Share
1	China	13,260	33.0%
—	Road vehicles (global)	~5,600	~15%
2	United States	4,682	11.6%
3	India	2,955	7.3%
4	Russia	1,769	4.4%
5	Japan	1,068	2.6%
6	Shipping (all maritime)	~973	~2.4%
—	Aviation (global)	~950	~2.5%
7	Iran	~750	~1.9%
8	Germany	~674	~1.7%
9	South Korea	~620	~1.5%
10	Canada	~571	~1.4%

Transport Sector Comparison

Road vehicles
~5,600 Mt — 15%

Shipping (maritime)
~973 Mt — 2.4%

Aviation
~950 Mt — 2.5%

Rail
~87 Mt — 0.2%

Europe

222 ports globally as of 2026 - Europe leads with the most developed infrastructure

Northern Range / ARA		Scandinavia and Baltic		Mediterranean		Norway (Arctic-capable)		UK and Iberia	
Rotterdam	Netherlands	Stockholm	Sweden	Gibraltar	UK territory	Hammerfest / Polarbase	G hub	Southampton	UK - developing
Antwerp-Bruges	Belgium	Gothenburg	Sweden	Barcelona	Spain	Bergen		Immingham	UK - developing
Zeebrugge	Belgium	Helsingborg	Sweden	Valencia	Spain	Stavanger		Milford Haven	UK
Amsterdam	Netherlands	Copenhagen	Denmark	Algeciras	Spain	Tromsø	Arctic	Isle of Grain	UK
Hamburg	Germany	Helsinki	Finland	Bilbao	Spain	Kristiansund		Huelva	Spain
Bremerhaven	Germany	Turku	Finland	Cartagena	Spain	Oslo		Ferrol	Spain
Wilhelmshaven	Germany	Tallinn	Estonia	Sines	Portugal	Fredrikstad		Leixoes (Porto)	Portugal
		Riga	Latvia	Marseille-Fos	France				
		Klaipeda	Lithuania	Le Havre	France				
		Gdansk / Gdynia	Poland	Civitavecchia	Italy				
		Kiel	Germany	Livorno	Italy				
		Rostock / Warnemunde	Germany	Piraeus	Greece				

Cruise Ship Delivery and Order Books - 2024-2028

Ship Name	Line	Year	Tonnage	Pax	Key Features	Fuel
Queen Anne	Cunard	2024	113,000	3,000	Luxury liner — new Cunard flagship	LNG
Icon of the Seas	Royal Caribbean	2024	248,663	7,600	AquaDome, 8 neighbourhoods, largest ever	LNG
Star of the Seas	Royal Caribbean	2025	248,663	7,600	Beach neighbourhood, Icon sister	LNG
MSC World America	MSC	2025	215,863	6,762	World-class design, North America focus	LNG
Norwegian Aqua	Norwegian	2025	156,300	3,571	Prima Plus class, Aqua Slidecoaster	LNG
Star Princess	Princess	2025	175,500	4,300	Sphere-class, LNG-powered flagship	LNG
Celebrity Xcel	Celebrity	2025	141,420	3,260	Edge-class, eco flex-fuel engines	Multi-fuel
Disney Destiny	Disney	2025	144,000	4,000	Wish-class, heroes & villains theme	LNG
Virgin Brilliant Lady	Virgin Voyages	2025	110,000	2,762	Lady-class, adults-only lifestyle ship	Conv
Ritz-Carlton Luminara	Ritz-Carlton	2025	~47,000	456	Ultra-luxury expedition yacht	Conv
Legend of the Seas	Royal Caribbean	2026	250,800	7,600	Icon class 3rd ship - Europe debut	LNG
Norwegian Luna	Norwegian	2026	156,300	3,571	Prima Plus class, Elton John show	LNG
MSC World Asia	MSC	2026 (Dec)	215,863	6,762	World class, Asia-inspired design	LNG
Disney Adventure	Disney	2026	208,000	6,700	Singapore homeport, Marvel Landing	LNG
Explora III	MSC Explora	2026 (14 Jul)	63,900	922	Luxury expedition, boutique experience	LNG
Carnival Festivale	Carnival	2027	183,521	5,374	Excel-class 4th ship, LNG-powered	LNG
Carnival Tropicale	Carnival	2028	183,521	5,374	Excel-class 5th ship	LNG
Celebrity Xcite	Celebrity	2028	140,600	3,260	Edge-class 6th ship, The Bazaar venue	Multi-fuel

Cruise Ship Delivery and Order Books - 2029-2034

Ship Name / Class	Line	Year	Tonnage	Pax	Key Features	Fuel
Carnival Project Ace 1/Destiny	Carnival	2029	230,000	~8,000	New class - largest Carnival ever built	LNG
MSC World Class 5 (World Atlantic)	MSC	2029	215,863	6,762	5th World-class ship	LNG
RCL Discovery Class 1 (TBN)	Royal Caribbean	2029	160,000 (?)	5,000 (?)	New Discovery class - smaller, versatile concept	LNG
RCL Icon Class (TBN)	Royal Caribbean	2029	250,800	7,600	Icon class 4th ship - Europe debut	LNG
Oceania Arietta	Oceania	2029	86,000	1,390	Sonata-class - premium culinary focus	Multi-fuel
Seven Seas Prestige	Regent	2029	77,000	822	Prestige class - ultra-luxury, all-inclusive	Multi-fuel
MSC World Class 6 (TBN)	MSC	2030	215,863	6,762	6th World-class ship	LNG
NCL New Class 1 (TBN)	Norwegian	2030	~227,000	~5,000	New-generation mega-ship, largest NCL ever	LNG
RCL Icon Class (TBN)	Royal Caribbean	2030	250,800	7,600	Icon class 5th ship	LNG
Seven Seas Prestige Class 2	Regent	2030	77,000	822	Second Prestige-class luxury vessel	Multi-fuel
Carnival Project Ace 2	Carnival	2031	230,000	~8,000	Project Ace 2nd ship	LNG
RCL Discovery Class 2 (TBN)	Royal Caribbean	2031	*TBC*	*TBC*	Second Discovery-class vessel	LNG
NCL New Class 2 (TBN)	Norwegian	2032	~227,000	~5,000	Second NCL new-generation mega-ship	LNG
Oceania Sonata Class 3 (TBN)	Oceania	2032	86,000	1,390	Third Sonata-class ship	Multi-fuel
Carnival Project Ace 3	Carnival	2033	230,000	~8,000	Project Ace 3rd ship	LNG
Seven Seas Prestige Class 3	Regent	2033	77,000	822	Third ultra-luxury Prestige-class vessel	Multi-fuel
NCL New Class 3 (TBN)	Norwegian	2034	~227,000	~5,000	Third NCL new-generation mega-ship	LNG

Meyer Werft - Project Vision - 2031



82,000 tons Displacement

- 275 meters long, could accommodate 1,856 passengers (so much smaller than Azura)
- Battery powered with small diesel generator for Transatlantic crossings.

By 2030, 100 European ports are expected to have shore charging facilities

Will Size Matter?

1912
Titanic
46,000 GT
2,400 Passengers

2024
Icon of the Seas
250,000 GT
7,600 Passengers

2050
Icon of the Seas
345,000 GT
10,500 Passengers



Freedom Class - Nuclear Powered







2 Million Gross Tons Displacement

- At one mile long, 800 feet wide, and 30 stories tall, it would be the largest maritime vessel ever constructed
- A 16 billion, nuclear-powered 'floating city' capable of housing 80,000 people (50,000 permanent residents, 10,000 visitors and 20,000 crew)
- Regulatory (including nuclear), construction and operating challenges would be enormous
- **this is 'architectural theatre'**

Cruise Industry Predictions - Horizon Scanning - 2025 to 2050

- The industry has collectively **committed to net-zero carbon cruising by 2050**, with current investment focused on alternative fuels, advanced propulsion and port infrastructure
- From 2032, large cruise ships will only be able to enter Norway's UNESCO World Heritage fjords if they can operate with zero emissions in those fjords. Shore power will be an important enabling technology, but it is only one part of meeting the requirement



Cruise Industry Predictions - Horizon Scanning - 2050 to 2075

- **Environmental changes will threaten the Caribbean and Pacific island ports** that form the backbone of current itineraries. By 2075, some current top cruise destinations may be substantially altered or inaccessible
- **The industry will need to pivot toward higher-latitude itineraries** - the Arctic, Antarctic, Norwegian coast, Scotland - as these become more accessible and more appealing
- **Nuclear-powered commercial ships, hydrogen fuel cells, wind-assist hybrid systems and full-electric short-sea vessels are all plausible** by mid-century
- **Passenger volumes could reach 80–100 million** annually if current growth rates persist, particularly driven by the emerging middle class in Asia, Africa and Latin America



Cruise Industry Predictions - Horizon Scanning - 2075 to 2125



- **Geopolitical fragmentation could constrain international cruising** with tighter border controls, international itineraries face structural headwinds
- Fully autonomous cruise ships are technically conceivable within this timeframe, though **regulatory and passenger acceptance barriers will be enormous**
- **Space and submarine tourism** - could mature into genuine competitors for the premium and ultra-luxury segments. The concept of 'cruise' may expand far beyond ocean travel
- Ageing populations in the West, urbanisation in Asia and Africa, and the retirement of the Boomer generation will all reshape who cruises and why

Thank You



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