



Southend Branch News and Views

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NOTES

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NEWS

Hythe Quay to be dredged to stop barges getting stuck



Councillors have voted to push ahead with what will be the most significant dredging of an iconic quay in 25 years.

Seagoing ships have sailed down the picturesque Hythe Quay in Maldon, Essex, for more than 1,000 years.

But Maldon District Council said a build up of mud was making it increasingly difficult for boats - including the iconic Thames barges - to pass "safely and effectively".

The strategy and resources committee agreed to proceed with the plan on Thursday night.

A council spokesperson said the quay would be dredged near the "heritage barges" including the barge berths and the pontoon area.

"This will provide continued safe access to the quay for our local historic barges and visiting vessels," they said.

Smaller scale dredging at the quay took place in 2016 and 2019, but a report written for the council said silt had built up again since then.

Royal Caribbean Group signs agreement to order a sixth Edge Series ship for delivery to Celebrity Cruises in 2028.



Edge 6 or 'Xcel 2' will be the sister ship to Celebrity Xcel, which is sent to begin sailing later in 2025. Other Edge Series ships include Celebrity Ascent, Celebrity Beyond, Celebrity Apex and Celebrity Edge.

Celebrity's Edge Series ships include features such as the Magic Carpet – the first cantilevered, floating platform at sea – and Infinite Veranda staterooms, which have large windows that open fully to connect the balcony with the room. New features for Edge 6 will be announced at a later date.

Royal Caribbean Group currently has a total of eight new ships on order. Two of those ships will join the company's fleet in 2025, Royal Caribbean International's Star of the Seas and Celebrity Xcel.

Fincantieri launches first Four Seasons Yachts ship at Ancona shipyard Four Seasons 1.



Four Seasons I will be 34,000gt, 207 metres long, and will have 95 suites onboard. Each suite features terrace decks, measuring up to 257 square meters in the largest accommodation onboard, the Funnel Suite.

Four Seasons 1 will depart on its first sailing on 25 January 2026.

Delayed island ferry Glen Sannox begins sailings

The ship at the centre of Scotland's long-running ferries saga has started carrying passengers between the Scottish mainland and the island of Arran.

MV Glen Sannox - which was meant to be delivered almost seven years ago - is the first new large vessel to join the UK's largest ferry fleet in nearly a decade.

It made its first scheduled journey between Troon in South Ayrshire and Brodick on Arran before dawn, coping with rough conditions that kept other ships in port.

The vessel will make three return sailings each day, with the journey lasting 75 minutes, helping to end years of uncertainly on one of Caledonian MacBrayne's busiest routes.

With space for 127 cars and 852 passengers, Glen Sannox brings much-needed extra capacity for the state-owned ferry operator which has struggled in recent years to maintain services with ageing and increasingly unreliable vessels.

The orders for the dual-fuel ships Glen Sannox and its sister vessel Glen Rosa, were placed with the Ferguson shipyard in Port Glasgow nearly a decade ago.

But acrimonious disputes over the design challenges and claims for extra costs saw the shipyard fall into administration and nationalised in 2019.

The ships have ended up costing more than four times the £97m contract price and sparked arguably the longest running political row of the devolution era.



The first pre-dawn sailing out of Troon took place in challenging conditions with winds gusting at 40mph.

Passengers clutched onto handrails when moving about the ship, a few passengers felt a little queasy - and for those with stronger stomachs, the breakfast trays slipped precariously about on the tables.

But despite the choppy conditions, the verdict of passengers was

Elsewhere a group of building workers on their way to Arran toasted the ship's arrival with cans of lager and were singing by the time it berthed in Brodick.

Named after an Arran beauty spot, the ship is the fourth island passenger vessel to bear the name Glen Sannox.

An identical vessel, Glen Rosa - still under construction at the Ferguson shipyard in Port Glasgow - is due to join it on the route at the end of the year, although it was reported at the weekend that a new delay will be announced shortly., external

Glen Sannox actually carried its first passengers on Sunday afternoon when it was unexpectedly switched for the scheduled vessel for one return sailing as a test run.

For residents on the island, Monday's start of a full timetable of sailings should bring relief after years of transport uncertainty.

Also on Friday, the US Department of the Treasury said it had sanctioned 183 vessels that are "part of the shadow fleet as well as oil tankers owned by Russia-based fleet operators".

Ambassador Cruise Line merges with CFC to form European cruise

New Ambassador Group will operate three small to mid-sized vessels and initially focus on Europe, before introducing a Caribbean programme in late 2025



British brand Ambassador Cruise Line is to merge with French cruise operator Compagnie Française de Croisières (CFC) and form the Ambassador Group, a "leading European premium affordable value cruise line" targeted at the "nofly silver market".

Ambassador Group will operate a fleet of three small to mid-sized vessels, including Ambassador's 1,400-guest Ambience and 1,200-passenger Ambition and CFC's 1,200-guest Renaissance, which has recently undergone a multimillion-euro refurbishment. Renaissance will also be equipped with the latest environmental technologies during a dry dock this January to ensure it complies with International Maritime Organization Tier III standards, in line with Ambassador's ships.

Ambience and Ambition will continue to offer a traditional British cruise product, while guests sailing on Renaissance will be able to enjoy a French cruise experience.

The merger will enable Ambassador Group to capitalise on the predicted growth of the European cruise sector, which is expected to increase by 12 per cent annually over the next five years. It will also enable the business to achieve operational efficiencies in sourcing and fleet management, while facilitating growth opportunities for both shipboard and shoreside staff. In addition, the merger will enable Ambassador Group to enter the fly-cruise market with the introduction of a joint fly-cruise Caribbean programme in winter 2025-2026 in partnership with European travel operator Corendon. Targeted at guests from the UK, France and the Netherlands, the itineraries will be offered from October 2025 and sail from homeports in Barbados, Martinique and Curaçao.

Ambassador Group will be majority owned by Ambassador's existing shareholders, Njord Partners, while Cheyne Capital will take a minority stake. The transaction is expected to be complete by the end of January 2025.

Sailing into 2025: Five cruise ships set to hit the waves in the new year



Norwegian Aqua

The first ship of Norwegian Cruise Line's expanded Prima-Plus class, Norwegian Aqua, is 10 per cent larger than its predecessors. Norwegian has taken advantage of the ship's extra space to offer a range of new features, including the world's first-ever hybrid rollercoaster and waterslide, the Aqua Slidercoaster. The ship will also have a new digital sports complex with an interactive LED floor named Glow Court, as well as the most expansive Ocean Boulevard outdoor promenade on a Norwegian ship.

Norwegian Aqua will begin sailing in March 2025 with a transatlantic voyage from Southampton, UK.



Mein Schiff Relax

Mein Schiff Relax, the first of TUI Cruises' new InTUItion class, is currently under construction in Monfalcone, Italy, ahead of its expected debut in early 2025. The ship is the first TUI Cruises vessel to be powered by LNG and will introduce a variety of new venues, including a new outdoor zone inspired by the islands of Greece, a Burlesque Bar and a new Asian-Japanese restaurant equipped with digital lighting and projection technology.



MSC World America

The second ship in MSC Cruises World-class, MSC World America is also set to begin sailing in April 2025. The vessel will feature seven distinct districts, including the MSC Yacht Club, Family Aventura, Aqua Deck, Zen Area, the Galleria, the Terraces and the Promenade, each of which will offer a variety of dining and entertainment venues.

A selection of 19 different cabin options will be available onboard, ranging from the World-class exclusive Promenade View cabins to the 150-squaremetre Owner's Suites, which feature a double bedroom with a walk-in wardrobe and bathroom complete with a full-size imperial bathtub. There will also be 19 dining venues on offer, including four main restaurants, two buffets, two venues in the MSC Yacht Club and Eataly.



Royal Caribbean International

Star of the Seas

Royal Caribbean International will introduce Star of the Seas, the second ship in the Icon class, in August 2025, with a series of seven-day cruises from Port Canaveral in Florida. Star of the Seas will be nearly identical to its predecessor Icon of the Seas, offering the largest waterpark at sea, Category 6, more than 40 dining venues and bars, an ice skating rink and more.



Disney Cruise Line

Disney Adventure

Setting sail at the end of 2025 with an inaugural sailing from Singapore, Disney Adventure will feature a range of firsts for Disney Cruise Line. Three new Disney attractions will appear on the upper decks in an adventure zone celebrating the Marvel Universe, including the longest rollercoaster at sea, the Ironcycle Test Run. Toy Story Place will be a new water play area designed for families with young children, while San Fransokyo Street, inspired by Big Hero 6, will feature the Big Hero Arcade. New stage shows, dining venues and updated accommodation options will also be available onboard.



DFDS to provide ferry services to island of Jersey

The Government of Jersey has signed a 20-year contract with the ferry operator for routes to the UK and France

The 20-year contract will see DFDS provide passenger and freight services on routes from Jersey to Poole and Portsmouth in the UK and to Saint Malo in France.

DFDS has committed to providing ferries at a greater frequency at peak periods and faster ferries to the UK. The operator will also invest in three new ferries by 2032, including two dedicated high-speed ferries for the summer.

But in terms of greenhouse emissions, the CalMac analysis - - reveals the benefits of the LNG technology are quite small.



VISITORS

Estelle Maersk Built2006 171542 GRT Denmark

Current Position Rotterdam



HMM St Petersburg Built 2020 2332311 GRT Korea

Current Position En route Tanger





Marcellus Lady Built GRT

Current Position En route Marcus Hook



Xpress Sagarmala Built 2021 192235 GRT Singapore

Current Location En route Hamburg



Msc Quitterie Built 2024 155492 GRT Liberia

Current Location South Africa En route to India



HMM Copenhagen Built 2020 228288 GRT Korea

Current Position West Africa en route to Singapore



Nord Oceania Built2018 29515 GRT Panama

Current Position En route to New York



Carole M Built 2016 23861 GRT Marshall Islands

Current Position En route Saint Rose



Xin chang Sha Built 2005 41482 GRT China

Current Position West Africa En route Santos



Msc Tampa Built 2006 53481 GRT Liberia

Current Position En route Tekirdag



Federal Tiber Built 2013 31590 GRT Marshall Islands

Current Location En route Scheveningen



STI Symphony Built 2016 63915 GRT Marshall Islands

Current Position En route Port Said



Baltic Bright Built 1996 9708 GRT Finland

Current position Baltic Sea



Dank Silver Built 2016 28134 GRT Marshall Islands

Current Position En route Puerto Rico



Jonathan P Built 2006 18489 GRT Liberia

Current position Agadir



Navig8 Precision Built 2018 63338 GRT Marshall Islands

Current Location West Africa en route to Lome



Msc Anita Built 2024 155 942 GRT Liberia

Current Position En route Colombo in Indian Ocean



Solar Melissa Built 2020 31239 GRT Panama

Current Position En route New York

QUIZ

WSS quiz questions – February 2025

- 1. What is the name of the CalMac ferry operating services to the Isle of Arran which has recently started in service?
- 2. Which ferry operator recently announced that a zero-emission, electric high-speed ferry will start operating between Southampton and Cowes (Isle of Wight) from late 2025?
- 3. Four warships involved in the War of the Spanish Succession were shipwrecked off the Scilly Isles in 1707, with the loss of up to 2,000 lives. This may have been a factor in the introduction of the Longitude Act in 1714, offering a substantial prize to inventors of a reliable method of measuring longitude at sea. Name any one of the four ships.
- 4. What is the name of the first US destroyer to be sunk by enemy action when it was torpedoed by a German U-boat near the Scilly Isles in December 1917?
- 5. In what year was the BBC's shipping forecast first broadcast?
- 6. What is the name of the containership, operating under charter to Maersk, which collided with and destroyed Baltimore's Francis Scott Key Bridge?

- 7. What is the name of the Royal Navy destroyer located in the Historic Dockyard Chatham which acts as the National Destroyer Memorial?
- 8. Which cruise operator has Jewel Class ships called Gem, Jade, Jewel and Pearl?
- 9. Which organisation, founded in 1909, has a responsibility extending from just downstream of Teddington Lock to the end of the Essex/Kent strait of the North Sea (between Gunfleet Lighthouse near Frinton to the North and Margate to the South)?
- 10. What type of ships are the Royal Navy ships: Daring, Diamond and Duncan?

SATURDAYS IN DOCKLAND



Saturday afternoon working was unheard of in the 1950s in the London Docks, probably for reasons not altogether disconnected with football, However a full morning's work was expected of everybody. A slight concession was allowed to us salaried staff. This consisted of six 'red' Saturdays per year. 'Red' because they were recorded on our leave sheets, whereas annual leave was annotated in blue ink (all done in 'real' ink and nibs in those days!); Great arguments used to go on, largely on the status of Saturdays at the start of long annual leave. Were they red or blue days.

This happy situation came to an end when the management granted the dock labour some Saturday time off, but this consisted of reducing their time to two hours,8-12, on a Saturday and caused further problems for two hours was just long enough to take the beams and hatches off a ship, have a muggo (tea break) and then put the beams and hatches back again and proceed to the pub. So nothing got done, and, after all, if the shipping companies wanted weekend working there was always Sunday at double time. Meanwhile the salaried staff had a much more workable arrangement with alternate Saturdays off, according to locally agreed rosters. Everybody was glad to see the back of red Saturdays.

The dock labour situation was solved, quite quickly, by allowing them every Saturday off, unless worked as voluntary overtime. However, this time the salaried staff situation was, in my opinion, not so good. We were expected to make our hours up in exchange for free Saturdays, by coming in an hour early (8a.m.) on Mondays. Not so funny after a weekend of sailing and hectic partying plus a railway which was unreliable owing to the change from steam to electric.

Several times I begged my boss to allow me to do my extra hours on a day other than Monday. He would then consult, through clouds of pipe tobacco smoke the Tibetan monk who advised him on office problems and came back with the answer "No". Until one day he made a concession. I could come in at eight-thirty on Mondays and Tuesdays. Big deal!

G.E.D.

HIDDEN GEMS OF FRANCE, SPAIN & PORTUGAL

AN ARMCHAIR SHIPWATCHER'S LOG PART 4

HONFLEUR TO TILBURY





THE BAKED ALASKA

Tuesday 24th September was spent at sea as we headed northwest and then northeast, rounding Brittany and the Cherbourg peninsular. It was mainly overcast but with light winds. It was a formal dinner on board in the evening with a parade of the galley staff and the chefs carrying the Baked Alaska.

HONFLEUR



HONFLEUR



ASHORE AT HONFLEUR



We berthed at Honfleur in the dark at about 5.30 am in light rain and a moderate breeze. We went ashore using the shuttle bus to take us into the old town. It was very picturesque, but there were loads of cobbles which made the wheelchair difficult to push and very uncomfortable for Maggie. We stopped for a coffee and visited a gift shop before returning to the ship via the shuttle bus.

The tide had risen by a couple of metres in the two hours or so that we had been ashore. The gangway onto the ship was now at some 30 degrees to the horizontal and was now in "stair mode".



THE GANGWAY

The shore staff insisted that Maggie should walk up the stairs and supported her up the slope with myself following behind. Towards the top she blacked out and I had to support her other side for the last few metres. We were back on board, but she was in a lot of pain. Later, another hatchway was opened at lower level to enable proper access, but it was too late to be any help for us.



ADNAN N

Upstream of the Ambience, the ADNAN N, a Barbados flagged bulker was unloading a cargo of a white powder. She was built by Higarki Shipbuilding in Japan in 2006 as the MARINE EMERALD, and is of 11,817 dwt with dimensions 115.5m x 19.6m x 8.8m. She is operated by the Ranmarine Shipping Company of Turkey.



We left our berth at 2 pm and headed downstream with the port of Le Havre visible on the far side of the river. Inbound were the KLAIPEDA and the LYDIA, both Lithuanian flagged small dry cargo ships. The Klaipeda was built in Germany in 1995 and is of 4068 dwt with dimensions 88m x 13m. She is powered by a Stork 8fhd 240g engine of 1445 kW. She is owned by Aurora Shipping of South Korea and managed by Afalita Shipping of Lithuania.



The Lydia was built in 1996 in Portugal as the KARIN and is of 4766 dwt with dimensions100m x 16.5m x 5.9m. She is powered by a MAK 6M32 engine of 3520 kW and is owned and managed by Afalita Shipping of Lithuania.



LAKE ONTARIO

Anchored in the estuary were the bulker LAKE ONTARIO and the products tanker BALTIC SWIFT. The Lake Ontario is Antigua & Barbuda flagged and was built in 2004 in China as the FEDERAL MANITOU. She is of 27,782 dwt with dimensions 185m x 23.7m x 9.8m and is powered by a B & W 6S46MC-C engine of 7860 kW. She is owned by Lauterjung Reederei of Emden and managed by Sunship Schiffahrtkontor, also of Emden.



BALTIC SWIFT

The Baltic Swift is Malta flagged and was built in 2010 by Hyundai Mipo Dockyard in South Korea. She is of 37,565 dwt with dimensions 184m x 27m x 11.4m. She is powered by a B & W 6S46MC-C engine of 8600 kW and is owned and managed by the Norient Product Pool of Denmark.

LONDON GATEWAY PORT

We reached the Thames early on Thursday 26th September and passed LGP as it was getting light on an overcast and drizzly morning. The remaining photos were taken from our cabin with my phone, so sadly their quality is even worse than normal. On the jetty at Shell Haven was the Madeira flagged products tanker NORDMARLIN.



She was built in 2017 by Samsung Heavy Industries in South Korea, and she is of 113,959 dwt with dimensions 250m x 44m x 15.1m. She is powered by a MAN B & W 6G60ME-C engine of 11400 kW. She is managed by Man Reederei Nord BV of the Netherlands and owned by Nordmarlin Shipping Management, also of the Netherlands.



MSC ASYA

On Berth 1 of the LGB was the Panama flagged container ship MSC ASYA. She was built by Samsung Heavy Industries of South Korea in 2008. She is of 117,247 dwt with dimensions 336.7m x 45.6m. She is powered by a B & W 12k98mcc engine of 68,382 kW and she is owned and managed by the Mediterranean Shipping Corporation of Sorrento, Italy.



On Berth 3 was the Panama flagged container ship MSC LAUREN. She was built in 2011 by STX Offshore & Shipbuilding of South Korea. She is of 152,792 dwt with dimensions 366m x 48m x 16.5m. She is powered by a MAN B & W 12K 98BHC-C engine of 72,240 kW. She is owned by Deulallion Shipping of Douglas, I.o. M., and managed by the Mediterranean Shipping of Geneva.



VB AMBITION

On the tug moorings opposite Hole Haven were the UK flagged Boluda tugs VB AMBITION, VB DOLPHIN and VB PANTHER. The VB Ambition was built in 2012 in Singapore as the RT AMBITION. She has a gross tonnage of 465 with dimensions 32m x 12m x 6.3m and is described as a 'rotor tug, presumably having Voith Schneider propellor units'. Her engine is rated at 4692 kW and she has a bollard pull of 91 tonnes. She is owned by Elizabeth Shipping of Malta and operated by Boluda Towage Europe.



VB DOLPHIN AND VB

PANTHER

The VB Dolphin was built in 2013 as the SD DOLPHIN by the Song Cam Damen Shipyard in Vietnam. She is of 453 gt with dimensions 32.7m x 12.8m x 5.4m. Her engines are rated at 5050 kW in total and she has twin azimuth stern drive. She has a bollard pull of 80 tonnes. She is an Azimuth Stern Drive tug and is operated by Boluda Towage Europe.

The VB Panther was built in 2009 as the SMIT PANTHER by the Song Cam Damen Shipyard in Vietnam. She is of 484 gt with dimensions 32.1m x 13.3m x 6.3m. She is powered by twin Caterpillar 16 cyl C280-8MC engines of 511159 kW and her bollard pull is 95 tonnes. She is an Azimuth Sern Drive tug and she too is operated by Boluda Towage Europe.



Upstream of the LGP was the Belgian flagged water injection dredger DHAMRA. She was built in 2009 in Singapore and is of 397 gt with dimensions 31m x 10m x 4.1m. Her total engine power is 3357 kW together with two 506 kW jet pumps. Her bollard pull is rated at 46 tonnes and her maximum dredging depth is 22 metres. She is owned by Decloedt & Zoon Baggerwerken-Ostend of Belgium and managed by Dredging Environmental & Marine Engineering NV (DEME). She was presumably doing some final dredging for LGP Berth 4, which is very shortly to come into operation.

We berthed at the London International Cruise Terminal at about 7.30 am, but other duties prevented any further ship watching. The tanker WHITSTAR came alongside soon after we berthed, for bunkering. The cruise of 12 nights had covered 2731 nautical miles and called at 7 European ports. Her crew of 557 (about 100 less than in previous ownerships) came from 29 different countries, the largest contingents coming from India and Indonesia.

NEWS FROM PEMBROKESHIRE

Sheltering along the North Pembrokeshire coast

With a prevailing south-westerly wind, there are few places for ships to shelter along the west coast of Britain. There is a well-used anchorage to the northeast of Anglesey and that is particularly convenient for ships waiting to enter the Mersey but, southwards towards Land's End, there are only a couple of possibilities: in the Bristol Channel around Minehead/Watchet and along the North Pembrokeshire coast.

The main anchorage along the North Pembrokeshire coast is Fishguard Bay, with Newport Bay also being regularly used. Between the two western tips of Pembrokeshire, St Brides Bay is in almost constant use by tankers waiting to enter Milford Haven but this bay is exposed to westerly winds and therefore tends not to be used by other ships seeking shelter.


Pembrokeshire, showing main anchorages and Milford Haven (Base map: Fine Art, America)

Milford Haven is a large natural harbour and was used many years ago by commercial sailing ships seeking shelter. However, nowadays it is very busy with tankers going to/from the oil and gas terminals, as well as the Pembroke-Rosslare ferry service. It therefore has little suitable space for ships sheltering.

The most common ship type to seek shelter in Fishguard and Newport bays is the coastal freighter, up to about 5,000 gross tons. A typical example is the 'Arklow Valour' (built 2017; 2,999 gross tons; Netherlands flag), shown in the photograph below, which was sailing in October 2024 from Garston (on the Mersey) to Waterford (Ireland) and decided to shelter in Fishguard Bay from Storm Ashley, which had southerly winds reaching Force 10.



'Arklow Valour' sheltering in Fishguard Bay

The 'Arklow Valour' was joined by another coastal freighter of the same line, namely the 'Arklow Vale' which had anchored off Waterford waiting for its berth to become free. With Storm Ashley due to arrive, she sailed across the Irish Sea for shelter in Fishguard Bay before returning to Ireland after the storm. Arklow Shipping, based in County Wicklow, Ireland, has a fleet of 59 ships and therefore their ships are a common sight through the Irish Sea.

Based on the shipping forecasts, many ships plan in advance to shelter and wait for the storm to pass. However, for others it is a last-minute decision due to, for example, encountering very difficult conditions at sea, hearing an updated forecast of worsening weather or having onboard difficulties such as shifting cargo. As an example, the 'Seher S' (2002; 2,997 gt; St Vincent flag) was sailing in 2023 from Ellesmere Port to Aviles, Spain when she encountered Storms Erin and Fergus, which had westerly to south-westerly winds of up to Force 10. She diverted when off St David's Head to Newport Bay and anchored there to ride out the storms, as shown in the tracking plot below.



Track of the 'Seher S' to take shelter in Newport Bay www.marinetraffic.com)

(Source:

Another common ship type sheltering on the North Pembrokeshire coast is the coastal tanker, particularly when there are westerly winds and St Brides Bay is unsuitable. The larger tankers waiting for a berth at Milford Haven tend to see out any storm at sea in the southern Irish Sea or mouth of the Bristol Channel.

The picture below shows the coastal tanker 'Coralwater' (1998; 1,895 gt; Netherlands flag) anchored in Fishguard Bay. This tanker is often used to replenish the fuel supplies at Fishguard port. In the background can be seen another Arklow Shipping coastal freighter, the 'Arklow Raider' (2007; 2,999 gt; Irish flag) which was sailing in 2023 from Glasgow to Bilbao when she met winds forecast to be south-westerly Force 7.



'Coralwater' and 'Arklow Valour' (in background) sheltering in Fishguard Bay

Feeder container ships, such as those serving Dublin to/from continental container ports, are typically larger than coastal freighters and can keep to their schedules through most storms. Typically, these feeder container ships are 7,500 to 12,000 gross tons. However, they will tend to sail near sheltered coasts and do occasionally sail up and down for a few hours off North Pembrokeshire until a storm passes.

Larger ships such as car carriers from Portbury may also sail off the North Pembrokeshire coast to 'dodge' a storm even if their next port of call is to the south, rather than sail down towards Land's End. Other ships sheltering in Fishguard and Newport bays have included trawlers, ocean research vessels and subsea installation vessels, such as the 'Connector' (2011; 20,190 gt; Luxembourg flag) shown below. This was en route from the Netherlands to Wicklow in Ireland when she diverted to Fishguard Bay to shelter from a southerly Force 8 gale. She held station just outside Fishguard harbour breakwater, presumably using her dynamic positioning system, which includes seven thrusters.



'Connector' sheltering just outside Fishguard breakwater

Tugs are particularly vulnerable to storms when they are towing. Anchoring is often not an option, as the towed vessel or barge would no longer be under control. In January 2025 a multi-role vessel, the 'CT Vector' (2008; 135 gt; UK flag; 16t bollard pull), was towing a hopper barge, the 'Ronnie W' (1964; 1,977 gt; Netherlands flag) from the Netherlands to Eastham (on the Mersey) when she encountered a south-westerly gale Force 8. She motored up and down off the North Pembrokeshire coast until the gale passed, as shown by the track below. She was then assisted into the River Mersey and the Manchester Ship Canal by another Carmet vessel, the azimuth stern-drive (ASD) tug 'CT Upton' (1987; 197 gt; UK flag; 35t bollard pull). Carmet Tug Company operates the towage for the canal. Having safely arrived, the hopper barge is to be renamed the 'WP Chancer' by Draca Marine and used primarily to dredge sand for the construction and agricultural industries.



Track of the 'CT Vector' towing the 'Ronnie W' off North Pembrokeshire (Source: www.marinetraffic.com)



'CT Vector' towing the 'Ronnie W' off Newport Bay

During a storm there may be a number of ships sheltering along the North Pembrokeshire coast. For example, in January 2024 the shipping forecast warned of Storm Isha having south-westerly winds reaching Force 11. As a result, four ships anchored in Fishguard Bay seeking shelter. These were the cargo freighters 'Arklow Accord' (2020; 5,078 gt; Irish flag), 'Arklow Moor' (2011; 9,758 gt; Irish flag) and 'Arklow Raider' (2007; 2,999 gt; Irish flag) and the coastal tanker 'Sundowner' 2016; 2,938 gt; Netherlands flag). In addition, the much larger liquefied natural gas (LNG) carrier 'Lobito' (2011; 100,723 gt; Bahamas flag) patrolled off the coast gaining some respite from the southwesterlies.



Ships sheltering from Storm Isha in Fishguard Bay(Background map: www.marinetraffic.com)

With so much focus in logistics on Just-in-Time deliveries for manufacturing and same-day or next-day deliveries for consumer goods, it is easy to forget that shipping timetables are very often disrupted by the vagaries of the weather. The cargoes affected tend to be relatively 'downstream' in the supply chain (such as fertiliser for farming or grain for food manufacturing) but these potential delays do mean that sufficient stocks do need to be held to avert any adverse effects on agricultural production, construction, manufacturing and the final consumer. The realities at sea are often very different from what people imagine when they click for a delivery on a computer in their living room!

THE WOOLWICH FERRY



BEN WOLLACOTT

The Woolwich free ferry runs between South and North Woolwich and has done so for the past 700 years. The current service is provided under the Metropolitan Board of Works (Various Powers) Act of 1885. It is licenced and financed by London River Services, the maritime arm of Transport for London. Typically, the service carries about 2 million passengers per year.



DAME VERA LYNN



BEN WOOLLACOTT

The tidal range at Woolwich can be up to 7.6 metres with a tidal current of up to 5 metres per second. Sailing distance between the two terminals is 470 metres and the crossing time is a nominal 5 minutes. At present there is a sailing every 15 minutes on a 7-day week between 6 am and 10 pm.

The present service is provided by two vessels, the BEN WOLLACOTT and the DAME VERA LYNN, which replaced three 1960s vintage ferries, ERNEST BEVIN, JOHN BURNS and JAMES NEWMAN. The new ships entered service on 1st February 2019, but for the first couple of years they suffered numerous technical issues. The main problems were with the "functioning of the power management system". Between 2000 and summer 2024 only one ship was in service because of "staffing challenges".



BEN WOOLLACOTT AT NORTH TERMINAL

The present two vessels were built by Remontowa Shipbuilding in Gdansk, Poland with the basic design being undertaken by the Norwegian firm LMG Marin. The client was Transport for London, and the contract was dated 30th September 2016.



The two are of 1750 gt and 703 dwt with dimensions 62.6m x 18.8m x 1.8m. Their capacity is 150 passengers and 210 lane metres for vehicles in 4 lanes. Propulsion is diesel electric hybrid giving 8.5 knots. The system allows the diesels to run at a constant low load with the batteries taking dynamic loads in a process known as "peak shaving".



BEN

WOOLLACOTT AT SOUTH TERMINAL

The equipment package for each vessel consists of an air-cooled battery pack with a capacity of 181 kWh; two diesel generators of 450 kW @ 1800 rpm and four azimuth thrusters of 300 kW each. The diesels run on low sulphur fuel are equipped with a catalyser and with particle filters on the exhaust. The batteries are charged by the generators.

The four thrusters are powered by vertically mounted permanent magnet motors. In normal operation only one of the two diesel generator sets will be running at near constant load, with a battery installation providing the peak power demand for the crossings.



The ferries use a shore-based automatic mooring solution, which saves energy. A large magnet is clamped to the side of the ferry, locking when loading and unloading, with the thrusters shut down.

THE NEW MERSEY FERRY



Under construction in Birkenhead is the long-awaited £26 million new Mersey ferry. She is the subject of a contract signed in December 2023 between the Liverpool City Region Combined Authority and Cammell Laird for the design and construction of the ferry. Steel cutting is already complete, and completion is due in time for the summer 2026 season.



ROYAL

IRIS OF THE MERSEY (SNOWDROP IS SIMILAR)

The ferry service is currently run with two vessels, the SNOWDROP (617 gt built in 1960 as the WOODCHURCH by Philip & Sons at Dartmouth) and the ROYAL IRIS OF THE MERSEY (611 gt built in 1959 as the MOUNTWOOD by Philip & Sons at Dartmouth). Both had their original Crossley Brothers diesels replaced with Wartsila engines some 20 years ago.



Details of the new vessel are hard to find, but she is said to be about 50 metres long, requiring 327 tons of steel and 90,000 metres of weld. From platers to welders, 25 apprentices will be investing 17,000 hours on the ship, working alongside experienced craftsmen. She will have capacity for 500 passengers with a crew of 6. Plans for two new ferries were announced in August 2019, with some improvement works at the Seacombe terminal. After tendering, the contract was to be with Damen together with Cammell Laird. As said above, the contract was finally signed with Cammell Laird, with a strong emphasis on providing work for local firms. She is the 16th Mersey ferry to have been built by Cammell Laird, and is their Hull Number1395. There are also plans to upgrade one of the existing ferries.



She is to have state of the art navigational and steering systems. She will have an azi-pull propellor system powered by a diesel-electric hybrid-ready propulsion system, which will have the potential for conversion in future to full electric propulsion as the technology evolves. She will also have an exhaust after treatment system to cut Nox emissions.



She will utilize the well-proven Kongsberg azimuthing and pulling thruster incorporating the propellor forward of the gear housing, conferring high manoeuvrability along with fuel saving performance. The ship will be wheelchair accessible to all decks, and, as well as functioning as a ferry she will carry out cruises and be available for conferences and private events.



For the longer term, a second newbuild is anticipated, depending on the Authority's ability to generate the requisite funding.



I know that these are only computer generated images, but give me the existing ferries every time – "Call me Old Fashioned"



THE HALIFAX EXPLOSION

On the morning of 6th December 1917, the French cargo ship SS Mont Blanc collided with the Norwegian vessel SS Imo in the harbour of Halifax, Nova Scotia. The Mont Blanc was loaded with high explosives it caught fire and exploded devastating the Richmond district of Halifax. At least 1782 people were killed by the blast, debris, fires or collapsed buildings an estimated 9000 were injured. The blast was at the time the largest man made explosion; it released the equivalent energy of roughly 29000 tons of TNT.

The Mont Blanc was headed for France with munitions for WW1, unfortunately she was also carrying highly flammable Benzol in barrels on deck, which were damaged in the collision, the contents catching fire, and leaking into the holds of explosives below. The collision happened because neither vessel would yield their position, until it was too late although it was the Mon Blanc's right of way. The ships had exchanged blasts from their respective whistles, which could be clearly heard from the shore, and from other ships moored in the harbour. People were looking at the ships approach each other and were expecting a collision. They collided at roughly 8.45 am, the Imo was well out of the water, which caused the damage to the barrels on the deck, and the fire started. The captain of the Mont Blanc immediately ordered the crew to abandon ship, and they quickly rowed to get as far away as possible.

The ship exploded at 9.04 am 19 minutes after the collision, killing many men on the ships moored in the harbour, but miraculously only one of the crew of the Mont Blanc died. Nearly all structures within a ½ mile radius were obliterated. The pressure wave snapped trees, bent iron rails grounded vessels, and scattered pieces of the Mont Blanc for miles. The tsunami wiped out a settlement of native Indians who had lived in the area for generations.

The death toll could have been worse if it had not been for a train despatcher, who learned of the nature of Mont Blancs cargo and stopped an inbound train from coming into the station. The station was destroyed in the blast and the despatcher was killed. His message to the signalman read, Hold up train. Ammunition ship afire in the harbour and will explode. Guess this will be my last message. Good bye boys.

Not only was the station destroyed, but also the railyards, killing 55 railway workers and destroying and damaging over 500 railcars. Large brick and stone factories nearby, such as the Acadia Sugar Factory disappeared into unrecognisable heaps of rubble, killing most of their workers. The Nova Scotia cotton mill located a mile from the blast was destroyed by fire and the collapse of its concrete floors. The blast was heard as far away as Cape Breton 129 miles away, and Prince Edward Island 110 miles away.

Relief efforts began almost immediately, and hospitals quickly became full. Rescue trains began arriving the day of the explosion, from Nova Scotia and New Brunswick whilst other trains from central Canada and the USA were impeded by blizzards. Royal Navy Cruisers in port sent some of the first organised recue parties ashore with medical personnel and soon began to take wounded on board.

The exact number killed by the disaster is unknown. The Halifax Explosion Remembrance Book identified 1782 victims. The last body, a caretaker killed at the Exhibition Grounds was not recovered until summer 1919. 1630 homes were destroyed completely, and another 12000 damaged, roughly 6000 people were left homeless and 25,000 had insufficient shelter. The city's industrial sector was in large part gone, with many workers among the casualties and the dockyard was heavily damaged.

Many people in Halifax first thought the explosion to be the result of a German attack, as German submarines were know to be in the North Atlantic. An enquiry was set up to investigate the causes of the accident, and apportion blame. The Captain of the Mont Blanc, the pilot, and the Harbour master were all prosecuted, but ultimately acquitted. No action was taken against the Imo which surprised local people as they expected her to be blamed as she was on the wrong side of the channel.

Subsequent legal action took place in the Supreme Court of Canada in May 1919, and the Judicial Committee of the Privy Council in London in March 1920, where it was decided that the Mont Blanc and the Imo were equally to blame for navigational issues that led to the collision. No party was ever convicted for any crime or otherwise successfully prosecuted for any actions that precipitated the disaster.







HMS ZUBIAN THE THIRTEENTH TRIBAL



HMS ZUBIAN

INTRODUCTION

In one of the more bizarre moves in the Royal Navy during WW1, HMS ZUBIAN was formed by joining the surviving parts of two damaged Tribal class destroyers, HMS NUBIAN and HMS ZULU. By late 1916, such was the pressure on British shipbuilders at this stage in the war, it was decided to join the two sections at Chatham Dockyard, instead of scrapping them. The resulting ship, called the ZUBIAN, was commissioned some 6 months later, much quicker than building from scratch.





TRIBAL CLASS (PROBABLY HMS MOHAWK)

The Tribal class were the brainchild of Admiral Fisher, who wanted speeds of 33 knots. They were the first destroyers to be powered by steam turbines rather than by reciprocating triple expansion engines and they were oil fuelled. This resulted in rather large vessels which were somewhat fragile. Their main defect was the high oil consumption of the direct drive turbines, and inadequate fuel storage, resulting in very short range.

They were used in the war in coastal waters where the lack of range was less of a problem. The succeeding class of Royal Navy destroyers, the Beagle class, were smaller, still steam turbine powered but with coal-fired boilers, and were more successful.

Both Nubian and Zulu were in what would now be termed "Batch Three" of the class, which until the Zubian had numbered 12 ships. The ships were built in 7 different shipyards to an Admiralty outline specification only, as was common practice at the time. This meant that there were considerable differences between the ships of the class, although nominally sisterships. Splicing two together would have been therefore much trickier than, for instance, the 1930s Tribal class destroyers.



NUBIAN

HMS NUBIAN

HMS Nubian was built by J.I. Thornycroft at Woolston, being laid down on 18th May 1908, launched on 20th April 1909 and commissioned on 3rd September 1909. She was 285' over all by25' 6" by 8' 6", and her displacement was 990 tons. She was powered by 6 oil-fired Thornycroft boilers providing steam for three Parsons steam turbines of 14,000 shp driving 3 screws and giving 33 knots. She was armed with 2 single 4" guns and two single 18" torpedo tubes. Normal ship's complement was 68.



HMS ZULU

HMS Zulu was built by Hawthorn Leslie & Co at Newcastle upon Tyne, being laid down on 18th August 1908, launched on 16th September 1909 and commissioned on 19th March 1910. She was 285' over all by 27' by 6' 4.5", and her displacement was 1000 tons. She was powered by 6 Yarrow boilers which provided steam for her three Parsons turbines of 14,000 shp driving 3 screws and giving a maximum speed of 33 knots. Her armament was the same as Nubian's.

1909-1916

The careers of the two ships were closely linked. Initial deployments were with the First Destroyer Flotilla based at Harwich. In 1911 the flotilla moved to Portland. Both joined the Fourth Destroyer Flotilla in 1912, still based at Portland. By February 1914, both were part of the 6th Destroyer Flotilla based at Dover – the Tribals forming the basis of the famous Dover Patrol. Over the next 2 years they carried out patrols and helped minelaying and net laying operations in the Channel.

DAMAGE TO THE TWO SHIPS



DAMAGE TO ZULU



NUBIAN

IN DRY DOCK AT CHATHAM SHOWING DAMAGE TO BOW

On the night of 26th/27th October 1916, Nubian was involved in action with some German torpedo boats in what became known as the Battle of Dover Strait. She was hit by a torpedo which severely damaged her bow. Three lives were lost. She was taken in tow by the destroyer HMS LARK but in bad weather the tow parted, and she drifted onto the shore at the South Foreland and driven under the cliff. On 8th November, some two weeks later, Zulu hit a German mine which blew off her stern, causing 15 deaths. She was towed into Calais by the French destroyer CAPITAINE MEHL. The Admiralty decided on 8th November 1916 to splice the remaining sections of the two ships to get one serviceable vessel, combining the forward end of Zulu with the rear and mid

sections of Nubian. Both were towed to Chatham ready for the work to start at Chatham Dockyard.

THE JOINING OF THE TWO SHIPS

The Nubian and Zulu had been built at different shipyards, and although of approximately the same length, they had different beams and had differing framing arrangements. At the section where they were to be joined the difference in beam as 3.5". The instructions given to the Dockyard required them "to cut Nubian back to the forward engine room bulkhead and to rebuild the hull of the after boiler room of Zulu in such a way that the lines fair into one another over the rebuilt boiler space".



DRAWINGS OF THE RIVER CLASS OF 1905 -TRIBALS WERE BASICALLY SIMILAR IN LAYOUT

For the purpose of making the join, the projecting plates and girders of the Zulu were spread outward and those of the Nubian inward so as to allow for overlapping when joining the Zulu sections. The work was carried out in a dry dock at Chatham, and it took around six months to complete. With modern materials, welding equipment and surveying techniques, stitching together of heavy steel hull subsections is now quite commonplace, but the two ships were of differing beams (and draughts), so the operation would have been tricky. It succeeded in that despite heavy wartime handling for the next two years, Zubian did not break into two again. Her increase in draught and

displacement may well indicate a lot of extra structure to avoid such a situation happening.

The resulting ship was about 5 feet shorter than the original two and the draught increased to 9' 9" with her displacement increased to 1040 tons. The engine room was updated and more modern 4" guns fitted. The ship was launched on 7th June 1917 and commissioned on 2nd July 1917 as HMS ZUBIAN.

1917 – 1919



Zubian served with the 6th Destroyer Flotilla for the rest of the war. On 4th February 1918 she was credited with the sinking of the mine-laying submarine UC50 by depth charging. On 23rd April she took part in the Ostend Raid. By 1919, all the 9 surviving Tribals were worn out and discarded. Zubian was sold on 9th December 1919 and scrapped at Sunderland by Fryer & Co.



HMS ZUBIAN



HMS ZUBIAN

A CRUISE ON LEONID SOBINOV IN 1975 by Geoff

Swales

I am a great fan of cruising and 2025 marks the 50th anniversary of my first cruise.

In the summer of 1975, I took a cruise on SS Leonid Sobinov. She was named after a renowned Russian operatic tenor who became the first elected director of the Bolshoi Theatre. The ship started life in the 1950s as RMS Saxonia, a British passenger liner built by John Brown & Company at Clydebank in Scotland for Cunard for their Liverpool-Montreal service. She was registered in Liverpool and was the first of four almost identical sister ships built by John Brown between 1954 and 1957 for Cunard's UK-Montreal service (the other ships being Ivernia, Carinthia and Sylvania). By today's standards, she was a small ship, only about 21,000 GRT.

Saxonia was launched on 17 February 1954 by Lady Churchill, wife of the then Prime Minister. Her maiden voyage from Liverpool to Montreal began on 2 September 1954.



RMS SAXONIA leaving Liverpool on her maiden voyage on 2nd September 1954



RMS SAXONIA on passage between Montreal and Quebec in the St Lawrence

She was extensively rebuilt in 1962 to become a dual-purpose liner/cruise ship and was renamed Carmania. Her port of registry changed to Southampton. She continued transatlantic crossings and cruises until September 1967 when she eventually closed out Cunard's Montreal service. From 1968 she sailed as a full-time cruise ship until withdrawal after arriving at Southampton on 31 October 1971.



The CARMANIA at Southampton in April 1963 following her rebuild.

After being laid up for a time, in August 1973 she was bought by the Soviet Union-based Black Sea Shipping Company and renamed SS Leonid Sobinov, registered in Odessa (now in Ukraine, but at that time within the Soviet Union).



The Leonid Sobinov

The ship was chartered by an Australian company called CTC (Charter Travel Club). CTC ran voyages between the UK and Australia but used the ship mainly for European cruises from the UK. My cruise in 1975 was from Southampton to the Baltic. We picked up some continental passengers at Amsterdam before sailing through the Kiel Canal. We called at the popular Scandinavian capitals of Copenhagen, Stockholm and Helsinki. The real highlight of the cruise was the call at St Petersburg (known then as Leningrad) with excursions to the Hermitage Museum and the Summer Palace. It was an overnight stay, and in the evening, we were taken to the theatre of the Lenin Motor Works for an extraordinary show of Russian folk and Cossack dancing. We returned to Southampton via Rotterdam to drop off our continental passengers. Those of you with long memories may remember that there was a heat wave in the summer of 1975, so we had two weeks of glorious sunshine and flat calm seas.

The ship's crew was from the Soviet Union, generally from cities around the Black Sea such as Odessa. The cruise director and entertainment staff were British, and there was the usual mix of entertainment on board – general knowledge quizzes, talks, films ("Towering Inferno" was popular at the time), music and dancing, as well as the opportunity for lessons in speaking Russian and playing the balalaika. But the entertainment highlights were performances by the Russian crew with many seemingly selected for their ability to sing and dance. The food was mainly Western-based, with occasional Russian specialities, and there was always plenty of Russian vodka available. On occasions, there would also be Russian "champagne" from Georgia (also then within the Soviet Union). During the day, there were plenty of deck sports to participate in. If you were brave enough you could join in the matches between the passengers and the crew in sports such as volleyball – there was only ever one winner of these contests, and it wasn't the passengers!

So how much did this cruise cost? I shared an inside cabin with my parents, and the cost for two adults and one child was £572 plus £13.50 for port taxes.

By 1995, the liner was laid up, and in 1999, she was taken to Alang, India and scrapped after a long and varied career.

She achieved a degree of fame/notoriety in 1979. In January of that year, as she lay in Sydney Harbour, an 18-year-old crew member, Liliana Gasinskaya, slipped out of a porthole wearing only a red bikini, and swam across the harbour to claim political asylum. She rapidly achieved fame as the Red Bikini Girl, and, amongst other things, was the first nude centrefold in Australia's edition of penthouse Magazine.

PORT CHALMERS AND THE C A LARSEN

Ship Type : Crude / Oil Product Tanker.

Dim - grt, nrt, 527.2 x 66.6 x 33.9ft.

Built in 1913 by Swan, Hunter & Wigham Richardson Ltd Wallsend United Kingdom as " SAN GREGORIO " for Eagle Oil Transport Co Ltd London United Kingdom.

Tonnage : grt / nrt / tdw - 9594 / 6069 / Machinery : Quadruple Expansion Steam Engines 4cyl (28.5, 41, 58 & 84 Strokr 54ins) - 794 nhp.

1918; Tonnage openings closed and new tonnages were 12,093 Gross and
9,075 Net.Also converted to oil Firing.
1926; Sold to the Hvalfangerselskapet A/S Rosshavet (J Rasmussen & M
Konow) Sandefjord Norway and renamed " C A LARSEN ".
1926 Converted to Whale Factory Ship by Fredrikstad Mekaniske Verksted A/S

Fredrikstad Norway.

New Tonnage : grt / nrt / tdw - 12.759 / 9.614 / 17.250. New Dim : 540.8' x 66.6' x 42.0'.

1938 Sold to Hvalfangstelskapet Blaahval (Jorgen Krag.) Tønsberg / Sandefjord Norway.

1940 Taken over by the German Kriegsmarine for service as an oiler. 1944 Sunk by the Fleet Air Arm during the "TIRPITZ " raid on Altenfjord. 1945 Returned to Owner.

1946 Sold to Hvalfangerselskapet Arctic A/S (Anton von der Lippe Tønsberg) Tønsberg Norway, renamed "ANTARCTIC ".

1946 Saved & refitted by Framnes Mekaniske Verksted Sandefjord Norway. 1952 Converted to tankership by Kieler Howaldtswerke AG Kiel Germany.

New Tonnage : grt / nrt / tdw - 10.776 / 6.186 / 15.993.

1954. Arrived at Hamburg Germany to be scrapped by Lehr & Co.

In 1928, an emergency saw Port Chalmers' dry dock extended 28 feet – by hand – to accommodate the Norwegian whale factory ship, C.A. Larsen, for repairs after she ran aground at Patterson Inlet, Stewart Island.

Teams worked around the clock to extend the dock from its designed length of 512 feet, to 530 feet.

The damage to the vessel was so serious that the Harbourmaster immediately dispatched tug "Dunedin" to Stewart Island to assist.

After a particularly difficult docking, the C.A. Larsen's rudder was only six inches from the dock entrance locks, and her bow was barely a foot from the newly excavated dock head.

Stevenson and Cook carried out the repairs, and the vessel – the largest vessel ever to dock at Port Chalmers at the time – sailed on 21 May 1928.





THE WILLIAM A. REISS



The William A. Reiss was an American self-unloading bulk carrier. She was built by the Great Lakes Engineering Works at Ecorse, Michigan as the JOHN A. TOPPING. She was laid down on 18th July 1924 and launched on 6th April 1925, entering service for Columbia Transportation Division of Oglebay Norton Co. 015th September 1925.





She was of 8289 gt with dimensions 601.6' x 62' x 32'. She was powered by coal-fired boilers serving a triple expansion steam engine of 2500 ihp. In 1934 she was sold to the Reiss Coal Company and re-named William A. Reiss. In 1953 she was given a new steam turbine engine.





In the winter of 1962/63, she was taken in hand for major surgery by the Manitowoc Shipbuilding Company. She was deepened by 7' 6" by raising her spar deck as far aft as the engine room. Her depth was increased from 27.8' to 35.3', which increased her gross tonnage from 8289 to 10,849. Although the deepening increased her capacity by some 28%, it caused problems of differences in level, requiring ballasting at some of ports.



INSIDE THE HOLD



REAR EXTENT OF DEEPENING



In 1969 the whole of the Reiss fleet was bought by the American Steamship Company. The ship was sold to the Kinsman Marine Transit Company in 1971 and back to Columbia in 1974. In 1976 she was converted from coal to oil fuel with new automated boilers by G & W Industries. On 28th August 1981 she was laid up in Toledo, Ohio, and there she remained for the next 13 years.

In 1994 she was sold for scrapping to Marine Salvage Ltd. of Port Colborne, Ontario, but resold to Indian shipbreakers and she arrived at Alang on 16th December 1994, having been towed by the tug NEFTEGAZ 56.

On the face of it, the decision to deepen the 37-year-old ship in 1962 was curious, to say the least. But even now, "lakers" are designed for a 45 to 50 year service life, much more than for seagoing vessels. The long life is partly

because corrosion of steel is slower in fresh water than salt, but mainly as a result of the Jones Act. This piece of American protectionism requires that all ships carrying cargo between American ports should be American built, owned and manned.

Because of the Act, there was little incentive for American shipowners to modernise their fleets with expensive new ships. Steam engines, both triple expansion and turbines continued in use widely, and coal continued to be a source of fuel for lakers until recently, and the last coal-burner, the S.T. CRAPO, was not converted to oil until 1995.

The deepening of the William A. Reiss was a far more difficult exercise than that carried out a few years ago by Cobelfret on several of their comparatively young Ro-Ro ships. The alteration consisted of adding an extra vehicle deck and compensating for the loss of lateral stability by adding sponsons to each side.

"Warts and all", the deepened William A Reiss operated for a further 20 odd years after her surgery.



RA URUGUAY



The corvette ARA Uruguay, built in England, is the largest ship afloat of its age in the Armada de la República Argentina (Argentine Navy), with more than 140 years passed since its commissioning in September 1874. The last of the legendary squadron of President Sarmiento, the Uruguay took part in revolutions, ransoms, expeditions, rescues, and was even floating headquarters of the Navy School. During its operational history 1874–1926 the Uruguay has served as a gunboat, school ship, expedition support ship, Antarctic rescue ship, fisheries base supply ship, and hydrographic survey vessel, and is now a museum ship in Buenos Aires. The ship was built in 1874 at Laird Bros. (now Cammell Laird) shipyard of Birkenhead, England, at a cost of £32,000. This ship is rigged to a barque sailplan (three masts, two of which have cross spars). The ship's steel hull is sheathed in teak.

The ship's namesake is an earlier Argentine Navy schooner, a seven-gun combatant in the Battle of Juncal, 1827.

Gunboat and training ship (1874–1887)

Originally built as a gunboat, the ship was soon to be used as a training ship.

Naval training headquarters ship (1887)

After an episode known as the "Mutiny of the Overcoats" ("el Motín de los Gabanes" de Zárate) affected the continuity of studies in the emerging Naval Academy, the ship became a floating headquarters for naval training. In 1879,
the gunboat, anchored in Buenos Aires, witnessed the graduation of the academy's first class of Naval Officers.^[3]

In 1878 it became part of the expedition of Commodore Louis Py to Patagonia, south of the Santa Cruz River, along with the monitor Los Andes and the gunboat Constitución, with the goal of asserting Argentina's sovereignty claim on that region, threatened by Chile.

In 1884 it transported foreign scientific committees who came to observe a Transit of Venus (the passage of the disk of Venus across the Sun)



ARA Uruguay near 1903 in Buenos Aires

In 1887 the ship was removed from its training assignment and fitted for expedition support.

In 1903 the ship was extensively refitted specifically as a steam rescue ship with auxiliary sail propulsion. The original horizontal reciprocating engine was replaced with a more compact yet more powerful engine and boilers salvaged from a wreck, allowing addition of more water storage, coal bunkering and fuel oil for heating. Additional bulkheads to create a total of eight compartments and hull reinforcement were added. The bilge keels were removed to facilitate damage-free passage through ice. Hard shell above deck storm and wave protection for crew was added fore and aft. Additional insulations of cork and sawdust were added.

The ship's most notable action was carried out in 1901–1903 when the Uruguay supported and then later rescued the Swedish Antarctic Expedition led by Otto Nordenskiöld, their ship, the Antarctic, having been destroyed by ice. The rescue effort was led by Lieutenant Commander Julián Irízar who returned from his London diplomatic post of Naval Attache.

A special crew of eight officers and nineteen men was selected based upon experience, courage, and ability to withstand the severe polar conditions. With

all of the expedition members rescued successfully, the ship returned through a severe storm in a thoroughly battered condition, having been rolled up to 40 degrees and now partially dismasted. Arriving first at Puerto Santa Cruz, they telegraphed their success to headquarters. On December 2, 1903, they arrived at home port to a great rejoicing by the citizens of Buenos Aires, with all participants receiving a hero's welcome from one hundred thousand dockside greeters, to be followed by many days of receptions and parades.

The Third French Antarctic Expedition, led by Jean-Baptiste Charcot, was supported by the Uruguay.

Base support and hydrography (1904–1922)

The ship operated through the Drake Passage, around Cape Horn, and resupplied a base in the South Orkney Islands (called by the Argentines Órcadas) with trips to South Georgia (called by the Argentines San Pedro Island) and supporting the Argentinean Fisheries Association (Sociedad Argentina de Pesca) whaling station with coal and food supplies. During this time ship was engaged in performing hydrographic and geographic surveys for the preparation of maritime navigation charts.

She was dismissed from service in 1926 (with 52 years of naval service), to become a floating ammunition dump

In 1954 the Uruguay was rebuilt in the Río Santiago Shipyard. It was moored two years later at the pier of the Naval School, now officially designated as a museum ship.

Removed from naval service in 1962, the Uruguay was in 1967 declared a National Historic Landmark. Currently integrated since 1967 as a museum ship with the frigate ARA Presidente Sarmiento in the Museum of Sea and Navigation.[[] It is moored at Puerto Madero in the city of Buenos Aires, in the dock area No. 3, a short distance from the Sarmiento.

SAILING SHIPS OF THE FALLS LINE



FALLS OF HALLADALE IN BRISTOL AVON IN 1886

The Falls Line was established by Wright Breakenridge and Company in Glasgow in 1878. In 1892 the company morphed into Wright, Graham & Company. It had ceased ship owning by about 1914, but during the life of the company it had owned nine deepwater square-riggers as well as five steamers. All of the ships were named after Scottish river falls.

Of the sailing ships, the Falls of Clyde is still afloat (just) in Honolulu, but its future is very much in doubt. The others all were lost over 100 years ago. It is interesting to note that the last three ships to be built were rigged as four-masted barques rather than fully rigged ships for operating economy. The Falls of Clyde was also re-rigged as a barque in 1899 for the same reason.



FALLS OF CLYDE

THE FALLS OF CLYDE

She was an iron-hulled four-masted fully rigged ship built for the Falls Line by Russell & Co. of Port Glasgow. She was launched on 12th December 1878 and completed on 13th February 1879. She was of 1807 grt and 1741 nrt with dimensions 266.1' x 40' and a depth of 23.5'.

In 1898 she was bought by Captain W. Matson of the Matson Navigation Company and taken to Honolulu in 1899 and registered under the Hawaiian flag. In 1900, Hawaii was annexed by the United States. After a special Act of Congress to secure the foreign-built ship to sail as a U.S. vessel, she changed to US registry.

Matson rigged her as a four-masted barque and added a deckhouse, charthouse and re-arranged her aft quarters to accommodate passengers. From 1899 to 1907 she made over 60 voyages between Hawaii and San Francisco, averaging 17 days each way on her voyages.



CONVERSION

TO BULK OIL TANKER

In 1907, the Associated Oil Company bought her and converted her into a bulk oil tanker. Ten large steel tanks were built into her hull, and a plant room, boiler and generator fitted forward of an oil-tight bulkhead. In this configuration she took kerosene to Hawaii and returned to California with molasses for cattle feed.

In 1927 she was sold to the General Petroleum Company who cut down her masts and converted her into a floating fuel depot in Alaska. In 1959 she was bought by W. Mitchell, who had her towed to Seattle, intending to sell her to a preservation group. His plans fell through, and in 1963 she was to be sunk as part of a breakwater at Vancouver. In October that year, however she was towed to Honolulu for restoration, and she was opened to the public in 1968.

In 1970, Sir William Lithgow, the grandson of the ship's original designer William Lithgow, was engaged to assist in her restoration as a fully rigged ship. His Glasgow shipyard donated new steel masts as well as topgallants, jib and spanker booms of Oregon pine.

In 1982 she was severely damaged in a hurricane and by 2008 she was in a very poor state. In 1988, her owners, the Bishop Museum announced plans to sink her by the end of the year unless private funds were raised for her permanent care. That September, the museum transferred ownership of the vessel to Friends of Falls of Clyde, which intended to restore her. The hoped-for funding did not materialise in sufficient quantities, and in June 2016 the Harbour Division of Hawaii Department of Transportation revoked the permit for her to remain at her berth, citing safety and security risks. In August 2016 a Glasgow-based group launched the Save the Falls of Clyde International Campaign, with a view to returning her to the Clyde. In July 2021 the Harbour Division solicited bids for the removal of the ship from Honolulu harbour. That November the Harbour Division accepted a bid from the Friends of Falls of Clyde International to transport the ship, by semi-submersible, to Scotland for restoration. It cancelled the acceptance in May 2022, however, saying that FFCI had not fulfilled their side of the contract. In July 2024 the Harbour Division again solicited bids for her removal, now with added performance/insurance requirements, She has been declassified from the Hawaiian and National Registers of Historic Places because of her very poor state.



Decisions on her future are ongoing, but with pumps running almost constantly to keep her afloat, her chances of surviving look poor or non-existent.



FFALLS OF CLYDE



FALLS OF CLYDE MODEL



FALLS OF BRUAR

CONSTRUCTION

THE FALLS OF BRUAR

She was an iron-hulled four-masted fully rigged ship built for the Falls Line by Russell & Co. of Port Glasgow. She was launched on 11th March 1879. She was of 1806 grt and 1740 nrt with dimensions 266.2' x 40' with a depth of 23.5'.

On 2nd September 1887 on a voyage from Hamburg to Calcutta with a cargo of salt, she was thrown onto her beam ends in a gale and foundered off Smith's Knoll in the North Sea with the loss of all her 24 crew.



THE FALLS OF DEE

She was an iron-hulled four-masted fully rigged ship built for the Falls Line by Russell & Co. of Port Glasgow. She was launched on 19th April 1882. She was of 1974 grt and 1916 nrt with dimensions 276.7' x 41' with a depth of 23.7'.

In 1901 she was sold to John Herron & Co. of Liverpool. By 1904 she was owned by Sphere Shipping Co. Ltd of Liverpool. In 1910 she was acquired by A/S Tonsberg Hvalfangerie of Tonsberg, Norway and renamed TEIE. On 28th May 1917 she was sunk by UC-45 south of the Fastnet, but with no casualties.



FALLS OF AFTON

FALLS OF AFTON

She was an iron-hulled four-masted fully rigged ship built by Russell & Co. for the Falls Line. She was launched in February 1882. She was of 1974 grt and 1899 nrt with dimensions 276.7' x 41' with a depth of 23.7'.

In 1901 she was sold to F.G. Leva of Lussingrande, Trieste and renamed FRANCESCO GUISEPPE. In September 1907 she was sold to A/S Falls of Afton of Tvedestrand, Norway and her name was changed back to Falls of Afton. In September 1916 she was sold to Einersens Rederi A/S of Oslo. On 20th February 1917 she was sunk on a voyage from Buenos Aires to Rotterdam with a cargo of linseed oil by UC-17 southwest of Wolf Rock in the English Channel.



FALLS OF FOYERS

FALLS OF FOYERS

She was also an iron-hulled four-masted fully rigged ship built by Russell & Co. for the Falls Line. She was launched in April 1883. She was of 2007 grt and 1974 nrt with dimensions 274.1' x 41' with a depth of 24.1'.

In 1899 she was wrecked at Heligoland on a voyage from Junin, Buenos Aires to Hamburg with a cargo of nitrates.



FALLS OF EARN

FALLS OF EARN

She was an iron-hulled four-masted fully rigged ship built by Russell & Co. for the Falls Line. She was launched on 30th May 1884. She was of 2385 grt and 2292 nrt with dimensions 302.6' x 42.1' with a depth of 24.5'.

On 1st July 1891 she fouled her anchor and sank at Acheen Head, Sumatra whilst on a voyage from Penarth to Acheen, Sumatra. On 31st December 1891 her registry was closed.



FALLS OF HALLADALE

FALLS OF HALLADALE

She was an iron-hulled four-masted barque built by Russell & Co. for the Falls Line. She was launched on 21st July 1886. She was of 2085 grt and 2026 nrt with dimensions 275.2' x 41.6' with a depth of 23.9'.

In 1902she was sold to Thomas Law's Shire Line. On 14th November 1908 she was wrecked at Curdies Inlet, Wahambol, Victoria, Australia bound for Melbourne from New York with a general cargo. Her crew of 29 were lost.



FALLS OF GARRY

FALLS OF GARRY

She was an iron-hulled four-masted barque built by Russell & Co. for the Falls Line. She was launched on 4th June 1886. She was of 2088 grt and 2026 nrt with dimensions 275.1' x 41.6' with a depth of 23.9'.

In 1899 she was sold to Kopsen, Craig & Walker of Sydney. In 1904 she was bought by Hatfield, Cameron & Co. of Glasgow. By 1910 she was owned by Wemyss Shipping Co. Ltd. of Glasgow. On 21st April 1911 on a voyage from Port Pirie, South Australia to Queenstown for Orders with a cargo of 3100 tons of wheat, she stranded on Quay Rock, off Ballymacus Point, Co. Cork. All 26 crew were saved.



FALLS

OF ETTRICK

FALLS OF ETTRICK

She was an iron-hulled four masted barque built by Russell & Co. for the Falls Line. She was launched on 27th February 1894 and completed on 24th March1894. She was of 2264 grt and 2135 nrt with dimensions 278.3' x 42' with a depth of 24.4'.



FALLS

OF ETTRICK ON WINDSOR REEF

On 27th April 1894 she dragged her anchor off Sandheads on her maiden voyage from Liverpool to Calcutta with a cargo of salt, and was towed to Calcutta. In 1899 she was sold to Ettrick Sailing Ship Co. of London. Later that year she was sold to the Anglo-American Oil Co. Ltd. On 27th March 1903 she was wrecked on Windsor Reef, Thwart-the-Way, Sunda Strait on a voyage from Sourabaya, Indonesia to Delaware.

M1096 FISCHE





THE HOUSEBOATS

Taking pride of place among the wonderful collection of houseboats at Shoreham by Sea is the FISCHE. She was a German Federal Navy Schutze class inshore minesweeper commissioned in January 1960. Whilst still serving in the German navy, the vessels of the class were reclassified as fast minesweepers.



FISCHE

The Fische was built by Abeking & Rasmussen at Lemwerder, being ordered on 27th January 1959, launched on 14th July 1959 and put into service on 12th January 1960. The Schutze class of 30 vessels closely resembled the last group of WW2 R-Boats, although somewhat larger. Their standard displacement was 241 tons with dimensions 47.4m x 6.9m x 2.3m (full load). They were built from wood, substantially teak, and composite non-magnetic materials to minimise their magnetic signature.



SCHUTZE CLASS

When built, they were powered by twin Mercedes-Benz diesels of 2250 bhp driving two constant pitch propellors giving a maximum speed of 25 knots. Ship's complement was 39. Like our Ton class, they were armed with a single 40mm gun together with comprehensive special equipment for mine seeking and sweeping. They were lighter and much faster than the Tons, but less well suited for open sea conditions.



The Fische was deleted on 20th April 1989, the majority of the class being discarded around that time. They don't seem to have been modified into minehunters like a number of Tons were. A few, like the STEINBOCK found uses as motor yachts and youth hostels. The story of the Fische after 1989 is somewhat fragmented, but in 1996 she was taken to Southampton for

conversion into a luxury yacht, but that project fell through. She was that acquired by Welsh buyers for conversion into a Radio Station.



FISCHE AT SHOREHAM



STEINBOCK A YOUTH HOSTEL IN WILLEMSHAVEN



FISCHE

AT SHOREHAM



COLE FAMILY

In 2003, she was bought by her present owners Fred & Polly Cole and towed to Shoreham for use as a houseboat. Their previous vessel, Fairmile D type MTB 682 Sea Luna had ceased to float and was no longer viable as a houseboat. They had broken her up themselves before the Fische was brought in. A protracted dispute with the Adur District Council Planners ensued, but finally permanent planning permission for the Fische at Shoreham was granted.

THE



INSIDE

THE FISCHE AT SHOREHAM

A TALE OF TWO GREAT HARRYS

1, INTRODUCTION



Scizieme söcle, --- Le Grand-Harry, (Voy. 1838, p. 305.)

HENRY

GRACE A DIEU OF 1514

Causing great confusion to historians was the re-use of certain names of Royal Navy ships. A case in point is the name GRACE DIEU. The first warship I have come across of this name was built in 1418 and destroyed by fire after being struck by lightning in 1439. She was nicknamed GREAT HARRY. The second Grace Dieu I have found was built in 1449 and rebuilt in 1473. She was broken up in 1487. The third was built in 1488, (confusingly often referred to as the Great Harry) and was later renamed REGENT. She was destroyed in 1512 at the Battle of St. Matthieu.

The fourth ship, called HENRY GRACE DIEU was built in 1514-16 and rebuilt in 1539. She was renamed EDWARD V1 in 1547 but was accidentally burnt in 1553. She was also called the GREAT HARRY.

The re-use of the name is probably related to the idea of "the Divine Right of Kings", the number of King Henrys (i.e. Harrys) and the death of Henry V111 in 1547, when predictably, the Henry Grace a Dieu was renamed Edward after the new king Edward V1. The name Grace Dieu doesn't seem to have been reused after the 1553 accident, possibly because the Divine Right concept had gone out of fashion.



COMPUTER

IMAGE OF THE GRACE DIEU

2. THE GRACE DIEU of 1416-18

The Grace Dieu was the last and largest of four "great ships" built for Henry V between 1413 and 1420, the others being the TRINITY ROYAL, the JESUS and the HOLIGOST . Her building near the Town Quay, Southampton in a specially-built dock was overseen by an official named Robert Berd, but she was designed and built by the project's master shipwright John Hoggekyn.



She was of some 1400 tons burden (roughly her displacement), with dimensions 218' x 50'. She was of the "Carrack" type and was clinker built with three planks nailed together along each part of her hull and waterproofed with tar and moss sandwiched between the timbers. Reportedly, 2735 oaks, 1145 beech and 14 ash trees were felled for her construction. Her mainmast was over 165' long and she was either 2 or 3 masted.

She was blessed in 1418 by the Bishop of Bangor, probably on the day her hull was floated out of the building dock. She was, however, not ready for sea until 1420. She was comparable in size with HMS VICTORY, over 300 years later, and twice as large as the MARY ROSE, which was launched just under a 100 years after her.

She was equipped for use in battle against the ships of Genoa, who was an ally of France, with high sides and a forecastle that rose over 50' above the water line. This was so her archers could shoot into the much lower carracks that she would run alongside. However, by the time she was completed, England was at peace with France after the signing of the Treaty of Troyes.

The Grace Dieu only ever made one voyage, with her ordered to cruise down the Channel. A mutiny before she left port and again shortly after resulted in her being taken to St. Helens on the Isle of Wight. As soon as she berthed, her crew departed.



When Henry V died in 1422, his ships were treated as his private property. Many of the smaller ships were sold to pay off his debts The three older Great Ships were laid up between 1426 and 1430. The Grace Dieu was laid up at anchor in the River Hamble a few years later. In 1432 much of the heavy gear was removed to lighten her and in 1834 she was towed upriver to Bursledon and was placed in a mud dock cut into the riverbank and effectively abandoned.

On the night of 7th/8th January 1439 she was struck by lightning and burnt down to the waterline. Nails and ironwork were salvaged from the wreck, but 1452 records about the ship came to a stop.



THE WRECK SITE

400 years later, a stream on the bank of the Hamble changed course, washing away some mud to reveal a big shipwreck. In 1859, the wreck was mentioned in a local guidebook but misidentified it as a Viking warship. It was not until 1933 that the wreck was positively identified as being the Grace Dieu. In 2005, a Sonar survey revealed the full shape and extent of the remaining hull. The bottom 6' 6" of the hull survives and 106' 6" by 40' of it remains. The wreck has been protected since 1974 under the Protection of Wrecks Act of 1973.



THE HOLIGOST

Alongside the Grace Dieu is another wreck which is thought to be that of the Holigost, another of the four Great Ships. Whilst the identity of the wreck has yet to be confirmed, it is already a Protected Wreck, managed by Historic England.



HENRY GRACE A DIEU

3. THE HENRY GRACE A DIEU OF 1514

The Henry Grace a Dieu was built between 1512 and 1514 at the purpose-built Gun Wharf in Old Woolwich, and then fitted out at the Naval Dockyard at Erith. She was built by William Bond, master shipwright, under the direction of Robert Brygantine, Clerk of the Ships on the orders of Henry V111. She was built to outshine the newly-built King of Scotland's Great Ship, the GREAT MICHAEL. When completed she was the largest warship in the world. Data about her details is somewhat conflicting, but her dimensions are given as 190' o.a. x 50' with 20' draught, Her displacement as built was 1400 tons and ship's complement was 1420 men. Unlike the clinker-built Grace Dieu of 1416, the Henry Grace a Dieu was of carvel construction.

She had a large forecastle 4 decks high and a sterncastle 2 decks high. She was one of the first vessels to feature gun ports. Information on her initial sail plan is lacking, but presumably she had three masts, the front two being square rigged with courses and topsails only, with the after mast setting a lateen sail.

Henry bought 50 large and medium-sized bronze and iron cannons for the ship. In all, she mounted 43 heavy guns and 141 light ones. Like most ships of

the carrack type, she was long and narrow and top heavy, making them unsteady in anything of a rough sea, and consequently a poor gunnery platform. Her rudder also proved to be too small for the ship.



To correct her lack of stability, she was rebuilt at Erith in 1536, with the height of the hull reduced and her rig modified to improve her sailing performance. Her tonnage was reduced to 1000 tons and her crew to 700 to 800. She now carried 151 guns, of which 21 were of bronze. An extra mast was added with lateen sails and the two square rigged masts now carried smaller courses, topsails and topgallants.



She saw little action. She was present at the Battle of the Solent against French forces in 1545 when the MARY ROSE was lost. She was used more as a diplomatic vessel, including carrying Henry V111 to the summit with King Francis of France at the Field of the Cloth of Gold, although she drew too much to get into the harbours at Dover and Calais.

After the death of Henry and the accession of Edward V1 in 1547, she was renamed KING EDWARD, but the new king seems to have had little love for the now old ship, and she fell into disrepair. She was accidentally destroyed by fire at Woolwich in 1553, after which her hull was left to rot.



PROJECT HABAKKUK

Conceptual design of Project Habakkuk aircraft carrier with 600-metre (1,969 ft) runway

Project Habakkuk was a plan by the British during the Second World War to construct an aircraft carrier out of pykrete, a mixture of wood pulp and ice, for use against German U-boats in the mid-Atlantic, which were beyond the flight range of land-based planes at that time. The plan was to create what would have been the largest ship ever at ,969 ft long, The idea came from Geoffrey Pyke, who worked for Combined Operations Headquarters. After promising scale tests and the creation of a prototype on Patricia Lake, Jasper National Park, in Alberta, Canada, the project was shelved due to rising costs, added requirements, and the availability of longer-range aircraft and escort carriers which closed the Mid-Atlantic gap that the project was intended to address.

Geoffrey Pyke was an old friend of J. D. Bernal and had been recommended to Lord Louis Mountbatten, Chief of Combined Operations, by the cabinet minister Leopold Amery.

Pyke conceived the idea of Habakkuk He had been considering the problem of how to protect seaborne landings and Atlantic convoys out of reach of aircraft cover. The problem was that steel and aluminium were in short supply, and were required for other purposes. Pyke decided that the answer was ice, which could be manufactured for just 1% of the energy needed to make an equivalent mass of steel. He proposed that an iceberg, natural or artificial, be levelled to provide a runway and hollowed out to shelter aircraft.

In early 1942 the project would have been abandoned if it had not been for the invention of pykrete, a mixture of water and woodpulp that when frozen was stronger than plain ice, was slower-melting and would not sink.

Pykrete could be machined like wood and cast into shapes like metal, and when immersed in water formed an insulating shell of wet wood pulp on its surface that protected its interior from further melting.

Perutz proceeded to conduct experiments on the viability of pykrete and its optimum composition in a secret location underneath Smithfield Meat Market in the City of London.[[]The research took place in a refrigerated meat locker behind a protective screen of frozen animal carcasses.^[10]

The decision was made to build a large-scale model at Jasper National Park in Canada to examine insulation and refrigeration techniques, and to see how pykrete would stand up to artillery and explosives..

The Canadians were confident about constructing a vessel for 1944. The necessary materials were available to them in the form of 300,000 tons of wood pulp, 25,000 tons of fibreboard insulation, 35,000 tons of timber and 10,000 tons of steel. The cost was estimated at £700,000.

Naval architects and engineers continued to work on Habakkuk with Bernal and Perutz during the summer of 1943. The requirements for the vessel became more demanding: it had to have a range of 7,000 miles

Naval architects produced three alternative versions of Pyke's original concept, which were discussed at a meeting with the Chiefs of Staff in August 1943:



Aircraft carrier drawings.



Cross section, showing 40 ft (12 m) thick walls made of pykrete

The final design of Habakkuk II gave the bergship, as it was called, a displacement of 2.2 million tons. Steam turbogenerators were to supply 33,000 for 26 electric motors mounted in separate external nacelles . Its armament would have included 40 dual-barrelled 4.5" DP (dual-purpose) turrets and numerous light anti-aircraft guns, and it would have housed an airstrip and up to 150 twin-engined bombers or fighters.

According to some accounts, at the Quebec Conference in 1943 Lord Louis Mountbatten brought a block of pykrete along to demonstrate its potential to the admirals and generals who accompanied Winston Churchill and Franklin D. Roosevelt. Mountbatten entered the project meeting with two blocks and placed them on the ground. One was a normal ice block and the other was pykrete. He then drew his service pistol and shot at the first block. It shattered and splintered. Next he fired at the pykrete to give an idea of the resistance of that kind of ice to projectiles. The bullet ricocheted off the block, grazing the trouser leg of Admiral Ernest King, and ended up in the wall.

By the time of the 1943 Quebec Conference the Habakkuk project had won the support of both Churchill and Mountbatten,[[] and was assigned to the National Research Council of Canada because of the cold Canadian winters and Canadians' prior familiarity with ice physics. The small prototype built in 1944 on Patricia Lake near Jasper, Alberta, confirmed the researchers' forecast that the full-size vessel would cost more money and machinery than a whole fleet of conventional aircraft carriers. (

The final meeting of the Habakkuk board took place in December 1943. It was officially concluded that "The large Habbakuk II made of pykrete has been found to be impractical because of the enormous production resources required and technical difficulties involved."

Expense and the developement of longer range aircraft caught up with the project

THE S.S. COTOPAXI OF 1918



The Cotopaxi was an American Great Lakes steam powered bulker built by the Great Lakes Engineering Works (GLEW) at their Ecorse, Michigan yard. She was ordered by the Emergency Fleet Corporation to transport cargo to Europe and built to their standard "Design 1060" of which 24 ships were constructed, 17 of them by GLEW, and 7 elsewhere. She was ordered on 5th March 1918, laid down on 29thMay 1918, launched on 15th November 1918 and completed on 30th November 1918.



Because of the requirement to serve Europe, the ships of this type had to be able to transit the Welland Canal, which was then the only way in and out of the Great Lakes. Lock sizes on the canal limited ships to 270' over all length and 45' beam.



Unusually for Great Lakers at the time, the Design 1060 had their deckhouse and engine at the stern with 4 cargo hatches forward, and were known as "Stemwinders". The Cotopaxi was of 2351 grt and 4062 dwt with dimensions 253' x 43' and a depth of 25.5'. She had 2 coal-fired Scotch Marine boilers providing steam for a 3-cylinder triple expansion engine of 1350 indicated horsepower manufactured by GLEW giving a speed of 9 knots.



А

DESIGN 1060 VESSEL

The Cotopaxi was completed shortly after the ending of hostilities. She arrived at Boston on 22nd December 1918 to begin working for the United States Shipping Board serving routes from U.S. ports and the east coast of South America.

On 16th June 1919, on a voyage from Philadelphia to Salvador in Brazil, she ran aground in the Braganca Channel, Para, Brazil. After jettisoning 400 tons of coal, she limped into port badly damaged, including to her engine. The cost of her repairs was high, but she was put back into service.

On 23rd December 1919 she was sold to the Clinchfield Navigation Company. In 1920 she entered Havana Harbour on a voyage from Charleston, South Carolina with a cargo of coal and collided with the tug SATURNO which quickly sank. The inquiry found that both vessels were equally at fault and awarded costs etc. equally.

On 29th November 1925 she departed Charleston for Havana with a cargo of 3800 tons of coal with a crew of 32. On 1st December a distress call from the ship was received, saying that she was listing and taking on water during a tropical storm. She was officially listed as overdue on 31st December 1925.

No trace of her was found at the time, and stories multiplied over the years since that she had been lost mysteriously in the Bermuda Triangle. In the 1977 film, Close Encounters of the Third Kind, the Cotopaxi was connected with the legend of the Bermuda Triangle and was discovered in the Gobi Desert, presumably set there by extra-terrestrial forces.



FAKE

NEWS

In September 2015 there was a fake news story on Facebook with the headline "Bermuda Triangle: Ship Reappears 90 Years after Going Missing". It was accompanied by a photograph of a rusty ship floating off the coast of Cuba. The story claimed that the Cuban authorities had intercepted the ship which had been floating around undetected for almost 100 years.



ANCHOR WINDLASS

In the 1980s the wreck was discovered in 100 feet of water some 35 miles off the coast of St. Augustine, Florida, but it was not identified until 2020. It was known locally as the Bear Wreck. In January 2020, the wreck was positively identified by Michael Barnette, after 15 years of underwater surveying and archive research. She was well outside the Bermuda Triangle.

After 100 years, the cause of the foundering is not clear, but experts think that the wooden hatch covers may have allowed seawater to penetrate the holds in heavy seas with little freeboard.

THE



WOODEN HATCHCOVERS ON A DESIGN 1060 SHIP

THE S.S. SANTIS OF 1892



SAENTIS IN 1930

The paddle steamer Santis (or SAENTIS) was built in Zurich in 1892 for service as a passenger ferry on Lake Constance for Swiss Northeast Railways. She was of 49 metres long with a capacity for 400 passengers with a steel hull and wooden decks. She was powered by coal-fired boilers providing steam for her 3-cylinder triple expansion steam engine.



SAENTIS

IN 1905

She served for 40 years on the lake for the Swiss Northeast Railways and later the Swiss Federal Railways. In 1920 she was converted to run on oil fuel, but this did not prove very successful. By the early 1930s she was no longer viable as a passenger ship and her disposal was needed. With the Great Depression of that time, the price of scrap steel was so low that conventional shipbreaking was not an economic proposition.



SCUTTLING IN 1933



SCUTTLING IN 1933

Instead, it was decided by the Swiss Lake Constance Shipping Company to scuttle the SANTIS and her older sistership, the HELVETTA, in the middle of the lake in deep water on the Swiss/German border. Her timber decks were stripped out, but otherwise she was sunk fully intact and was then forgotten for the next 80 years.



THE WRECK

Her wreck was discovered and identified during an underwater survey in 2013, and because of the darkness and the lack of oxygen in the water at her depth of some 210 metres she was found to be remarkably intact. A project to raise and restore her was began, and the Romanshorn Ship Salvage Association bought the wreck with the intention of bringing it to the surface. The recovery of the ship was urgent because the invasive Quagga mussels had begun to attach themselves onto it.



A PADDLE WHEEL

The proposal involved using large inflatable bags in conjunction with a steel lifting platform. The weight of the wreck was estimated to be 200 tons. The proposed procedure was to raise her up to 12 metres below the surface, and then to remove the platform before towing her to a dry dock in Romanshorn . The 25 ton platform was fabricated in the shipyard whilst crowdfunding raised 182,000 euros for the project. The first phase was programmed to be carried out in March 2024 with the second phase following in April. The full restoration was then to take place at the shipyard, over an estimated 2-year period. Once completed, she was to be displayed at a Swiss museum, although which one was never resolved.



HAPPIER TIMES


LIFTING

SCHEME

In March the raising work was started as programmed but it failed when the brakes on the cable winch which would have lowered the platform down to the ship did not hold. The platform crashed down onto the ship, damaging the hoses and breaking the spreader beams. The platform was no longer usable. The project appears to have been abandoned, and the S.S. Santis, dubbed "The Titanic of the Alps", will remain undisturbed.

THE TRAWLER DAYSPRING



The Dayspring FR 198 was a typical North Sea trawler, intended for herring and mackerel fishing. Her wreck, now known in tourist information, as "the Corpach Wreck", however, has now become one of the most photographed attractions in the west highlands of Scotland.



She was built by J. and G. Forbes at Sandhaven in Aberdeenshire in 1975.Her hull was carvel-built of larch on oak, but her bulkheads and superstructure were of steel and her hatch covers were of steel and aluminium. She was of 167 gt with dimensions 25.6m x 7.2m x 3.2m.She was powered by a Cat D398B diesel of 850 bhp with a Cat 3304 generator engine set.





Her first owners were A. Tait and others of Cairnbulg in Aberdeenshire. In 1980 she was bought by R. Green of Fraserburgh and renamed GOLDEN HARVEST and fished using seine nets. Later she paired with REPLENISH for whitefish. In 1997she was sold to I. Balance of Kilkeel in Ireland and to E. McMath also of Kilkeel in 1998.





In 2000 she was de-licenced and sold to J. Boyd of Kinlochleven on 12th September 2000. Kinlochleven is at the eastern end of Loch Leven. John Boyd's plan was to convert her into a floating sea food restaurant, and she was moored at Kinlochleven pier until 2009. His plan never materialised, and she was left to deteriorate.

In May 2008 she was bought by L. & A. Pomahac, a boatbuilder who was living nearby. He intended to restore her as a houseboat. He moved her to Camas na Gall Bay in Loch Linnhe on 7th July 2009 and put her on a swinging mooring. Between May and November 2010 many repairs were carried out by Boyd Bros. of Corpach, including the removal of her engine.

On 8th December 2011 her mooring chain failed during a severe storm and she drifted onto a lee shore, grounding near the Corpach Sea Lock which gives access to the Caledonian Canal.. Her owners were away at the time, but the Coastguard made sure she was beached safely. There she remains, though sadly there has been a lot of vandalism since. With the proximity of Ben Nevis in the background, it is perhaps not so surprising why she has become so popular with photographers.

It is sad though that our local wrecks, such as the Souvenir, don't get as many photographers. We are bit lacking in mountains and access is rather muddier, though.

KOMET OF 1911



The Komet was designed as an administrative vessel cum yacht for the German New Guinea protectorate. She was built by Bremen Vulcan a.g. and was laid down on 2nd August 1910, launched on 4th June 1911 and delivered in August 1911. She was of 977 grt with dimensions 64m x 9.5m. She was of steel up to boat deck level and timber, mostly mahogany, above. Her two coal-fired boilers served twin triple expansion steam engines of 1400 hp in total giving a speed of 13 knots. She was armed with a 37mm Hotchkiss gun and an 8mm machine gun. She had a crew of 58, mostly New Guinea seamen.





HMAS UNA REFIT IN SYDNEY 1914

Up until the start of WW1, she patrolled the various islands and ports of New Guinea, showing the flag for the Germans. She was commissioned in the German Navy in early August and put at the disposal of Admiral Graf Spee's fleet. On 15th September, she coaled the armed merchant cruiser PRINZ EITEL FREIDRICH. When her base at Raboul in New Britain was captured by the Australians, she hid in a small uncharted harbour (nicknamed the Komethafen) 180 miles from Raboul.

On 10th October 1914, she was taken by surprise in the Komethafen by the ex-German HMAS NUSA, and taken as a war prize. She was commissioned as the HMAS UNA on 17th November 1914 after a refit in Sydney. She served in the Australian navy as an armed sloop/patrol boat armed with three 4" guns and two 12 pounders. She was based in New Guinea until decommissioned on 30th June 1920.



UNA OCTOBER 1918

On 27th October 1925 she was sold and served as a pilot boat for the Port Phillip pilot service, near Melbourne, and was renamed AKUNA. In WW2 she performed naval duties as an examination vessel in Port Phillip Bay, but she was not commissioned into the RAN. In 1943 she was returned to the pilot service. She lasted as stand-by vessel up to 1954 and was broken up in Melbourne in 1955. In Australian museums are her wheel and anchor together with her original 37mm Hotchkiss gun.



AKUNA IN 1925



THE ZWARTE ZEE AND THE WITTE ZEE



ZWARTE ZEE

The Zwarte Zee and the Witte Zee (Black Sea and White Sea) were oceangoing salvage tugs operated by Smit International Zeesleep en-Bergingsbedrijf, Rotterdam. They were designed by J.C.A. Hoogenbosch, and were, perhaps, the best-looking tugs of their type ever built.



THE ZWARTE ZEE was built by J & K Smit's Kinderdijk yard and was of 1539 grt. Her dimensions were 77.5m x 12.35m x 6.5m. She was powered by twin Smit-MAN 12-cyl.single-acting direct-reversible 4-stroke diesels totalling 7000 bhp coupled to a single propellor giving a top speed of 17 knots. Maximum bollard pull was 73 tons. She was laid down on 24th April 1962, launched on 12th October 1962 and delivered on 18th April 1963.





When completed, she was the world's largest and most powerful ocean-going tug. By 1983 she was obsolete, with later tugs being more efficient and cheaper to operate. On 15th December1983 she was laid up in Singapore. On 1st May 1984 she arrived at Kaohsiung, Taiwan for scrapping, and the work started on 17th May.



WITTE ZEE

THE WITTE ZEE was also built by J & K Smit's Kinderdijk yard and was of 1539 grt. Her dimensions were 77.5m x 12.85m x 6.9m. She was powered by twin Smit-MAN 12-cyl 4-stroke diesels totalling 7000 bhp driving a single propellor giving a top speed of 17 knots. Maximum bollard pull was 73 tons. She was launched on 3rd May 1966 and delivered on 3rd October 1966. She too had

become obsolete and was laid up in Bahrain in October 1983. She was sold to Pakistani shipbreakers and arrived at Gadani Beach on 19th April 1984.





WITTE ZEE FITTING OUT







ONE FACT WONDER MARITIME MUSEUMS

Maritime Museum Ushuaia



The Jail at the End of the World, as a correctional facility, was closed in 1947. Declared a National Historic Monument, it houses four very interesting museums the Ushuaia Maritime Museum has a vast collection of models that tell the story maritime of Tierra del Fuego since the arrival of the first explorers; the Museum of the Presidio, highlights the criminal history and the lives of the prisoners in each of the old cells, the local history and the development of the city of Ushuaia. The Antarctic Museum with exhibits on the expeditions of the most famous explorers such as Amundsen, Scott, Shackleton, Nordenskjold.

There is another museum in Ushuaia run by the Argentine Navy, I went there and received some odd looks when I signed the visitors book, Nationality? As I recall the Museum was near the Naval Hospital which interested me as at the time I had had a severe chest infection, the ships Doctor gave me a massive dose of antibiotics with the warning that if the infection turned into pneumonia he would be unable to treat me and I would be hospitalizes ashore, guess where? Strange that two weeks ago there was a website for the Naval Museum gone now! The site for the one above is still running

Merseyside Maritime Museum by Geoff Swales

Recently, I had a short break in Liverpool and among other activities, I visited the Merseyside Maritime Museum based in the city. The museum is situated in the Royal Albert Dock, which is a great location – it is close to several attractions including the "Beatles Story", the Museum of Liverpool and the Mersey Ferry Terminal. It is also close to the buildings known as "Three Graces" which form a beautiful skyline on the waterfront – the Royal Liver Building, the Cunard Building and the Port of Liverpool building.



There are some interesting collections in the museum, and there were two that I particularly enjoyed.

The first tells the story of the sinking of *RMS Titanic*. *Titanic* is perhaps commonly associated with Belfast where she was built and there is, of course, the excellent Titanic Museum in Belfast. But *Titanic* has strong associations

with Liverpool. She was registered in Liverpool because the offices of the White Star Line were located there. However, she never actually visited Liverpool. There was plenty of information about the sinking and its aftermath and plenty of artefacts of interest, including a beautiful model of the ship.



Model of RMS Titanic

One story that caught my attention was the suggestion that there was a late change in the ship's officers for its maiden voyage, and a departing officer left the ship prior to its sailing with the key to the cabinet containing the ship's binoculars. And Frederick Fleet, the ship's look-out who warned of the impending collision suggested that had he been equipped with binoculars he might have spotted the iceberg sooner. But the truth of many stories about Titanic is not always clear, so who knows if that was really the case.

Another collection covered the sinking of the *MV Derbyshire*. She is the biggest British registered merchant ship ever to have been lost at sea. Built in 1976, she was an oil/bulk/ore carrier. She was registered in Liverpool and owned by the local firm Bibby Line. On her final voyage more than a third of the crew were from Liverpool. She was lost in September 1980 in the South China Seas during a typhoon, en route from Canada to Japan. All 44 people onboard died, including 42 crew members and 2 of their wives. Incredibly it was 20 years before the reasons for the sinking were discovered. The museum's collection tells the story of how the families of the lost crew fought to discover the truth, through the formation of the Derbyshire Family Association (DFA). Initially, there was no formal investigation. Suggestions grew that there were issues with cracking of deck plating in an area of the ship known as frame 65, following problems identified with one of *Derbyshire's* sister ships, *Tyne Bridge*. On 18 November 1986 another of Derbyshire's sister ships, *MV Kowloon Bridge*, developed severe deck cracking at frame 65 in the North Atlantic and eventually broke her back near frame 65.

Following the loss of *Kowloon Bridge*, the UK Government agreed to hold a formal investigation into the loss of the Derbyshire, which took place between October 1987 and March 1988. There was no firm conclusion, concluding only that the ship was overwhelmed by the force of nature.

In 1994 a search for the wreckage started, run and paid for by the International Transport Federation. Within 24 hours, the wreckage was located. A second expedition to the wreck site, funded by the UK Government, took place in 1997. Based on the evidence this provided, it was established that frame 65 had not caused the loss of the ship. Instead, it was concluded that the ship had sunk because the lid to a store hatch on the fore deck had been left unsecured. Water had then flooded into the fore part of the ship causing the bow to sink down deep into the momentous seas.

The hatch on number one cargo hold had then failed under the weight of the seas and the hold flooded, making the bow sink even deeper. As the bow gradually sank deeper each hatch cover in turn collapsed under the weight of the seas and each hold filled with seawater.

This conclusion was deeply upsetting to the families because the claim that the store hatch had not been properly secured implied serious negligence on the part of the crew

The Government reopened the formal investigation, which started on 5 April 2000, and evidence was taken from a number of experts.

The inquiry decided that, contrary to the findings of the second expedition, the flooding of the fore part of the ship was not caused by the store hatch being

unsecured. Instead, it discovered that some of the air pipes on the foredeck were damaged by continuous mountainous seas.

The sea started crashing onto number one hatch cover as the bow dropped lower in the water. As the hatch cover was not designed to withstand such enormous pressures it eventually gave way and water flooded number one hold, so the bow went down even more. The same happened to the other hatches one after the other, until each hold filled with water and the ship finally sank.

The inquiry concluded that it was most unlikely that the ship had been lost due to any other cause – including faults at Frame 65. To the relief of the families, the crew were cleared of blame for the loss of *Derbyshire*.

There are plenty of other items of interest in the museum. There is a collection relating to the *Lusitania*, which had strong links to Liverpool - Cunard was based in the city at the time, and Liverpool was *Lusitania's* home port, so the liner was a familiar sight at the landing stage. When it sank in 1915, many people in the city lost family and friends. There is also information about the history of the Liverpool docks. The museum also hosts the International Slavery Museum which is based on the third floor within the Maritime Museum. And some excellent lemon drizzle cake is available in the museum's café.

I would recommend a visit to the museum, but there is a problem. On 6th January 2025, the museum closed for a period of essential maintenance and repair work ahead of a three-year major capital project - subject to funding - to redevelop the museum. This is part of a wider Waterside transformation project all described as part of a "masterplan to reimagine Liverpool's waterfront". It appears that the museum will re-open in 2028. So, if you are interested in the museum's collections, you will need to rely on its website for the foreseeable future.

THE DOLPHIN SAILING BARGE MUSEUM



THE ORIGINAL MUSEUM

The Dolphin Sailing Barge Museum was set up by a group of enthusiasts in 1961 with the aim of preserving traditional skills in the maintenance and restoration of Thames sailing barges as well as recording the history of the barges. It was based the Dolphin Yard, a former barge yard in Milton Creek, Sittingbourne, Kent, and the Museum Trust leased the site from Bourncrete Ltd., manufacturers of precast concrete products.



CELTIC AND CAMBRIA AT ORIGINAL SITE



THE ORIGINAL SITE



THE

ORIGINAL SITE WITH BARGE BLOCKS VISIBLE

The museum site included the yard's original sail loft and blacksmith's forge as well as barge blocks in the creek alongside. The museum gathered and displayed numerous barge artifacts and photographs, but it tended to concentrate on restoring barges berthed nearby. I visited it a few times in the 1970s and 80s, and remember seeing the ANGLIA and OAK, now both longgone, and the little ARDEER for which we sponsored a spike for doubling her bottom. There was also the large steel barge CELTIC, which sadly is still there in the creek, in a sorry state. The sail loft building was destroyed by fire in 2008, arson being suspected. The museum closed soon after the fire.



AFTER THE FIRE



NEW SITE WITH RAYBEL ON THE BERTH

THE

In 2017, the group of enthusiasts were granted a new site, Lloyd's Wharf, around half a mile upstream of the Dolphin Yard, as a feature cum "planning gain" for a large residential development. Funded partly from the fire insurance, with contributions from Swale Council, the Heritage Lottery Fund and the Sailing Barge RAYBEL fundraising, a new museum building, externally a replica of the original sail loft, was completed in 1919. Included in the restoration plans for the site is the relocation of the former forge building from the Dolphin site to the new museum. The museum opened in 2020, but currently it is only open to the public for special occasions, and is short of artifacts to fill it, as most of the items held were lost in the fire.



RAYBEL IN DRY DOCK AT LLOYD'S WHARF

Mystic Seaport Museum Connecticut



MYSTIC SEAPORT MUSEUM | MAP & GUIDE (MARCH 31 - APRIL 30)



Mystic is the largest maritime museum in the USA with a collection of sailing ships and boats and for the recreation of a 19th century village. There are some 60 historic buildings on a 19-acre site established in 1929

In December 25, 1929, Edward E. Bradley, an industrialist; Carl C. Cutler, a lawyer; and Dr. Charles K. Stillman, a physician; signed the papers incorporating the Marine Historical Association, today known as Mystic Seaport Museum.



Seaport support research and runs the Frank C Munson Institute of America Maritime Studies with a graduate level programme established in 1955 by Prof Robert G Albion

The 1970s saw the creation of the Henry B. duPont Preservation Shipyard, additional exhibition buildings, and several new accredited educational programs. By the 1990s, Mystic Seaport was widely recognized as Americas leading maritime museum

In 1998, Mystic Seaport began construction of the freedom schooner *Amistad* marking a major educational program centred on the re-creation of an historic vessel from the keel up

The Collections Research Centre at Mystic Seaport opened in 2001. The Museum's state-of-the-art Collections Research Centre provides easy and convenient ways for scholars and researchers from around the world to access Mystic Seaport Museum's renowned archives, via the Internet and integrated

databases. It's just one of many ways this showcase of the past two centuries is preparing for the next one.

On September 24, 2016, Mystic Seaport opened the Thompson Exhibition Building, the building is the final element of the McGraw Gallery Quadrangle,



The Thompson Exhibition Building in

2018.

The 14,000-square-foot building houses the Collins Gallery, a 5,000-square-foot hall featuring soaring ceilings and a flexible layout to accommodate objects of varying size and installations of all types.



Emma C Berry n Built 1866

Sabino Built1908



Joseph Conrad Built 1882



Annie Built 1880



Roann Built 1947

Kingston II Built 1937

ANSWERS TO QUIZ 88

WSS quiz answers – January 2025

1. What is the name of the CalMac ferry operating services to the Isle of Arran which has recently started in service?

MV Glen Sannox

2. Which ferry operator recently announced that a zero-emission, electric high-speed ferry will start operating between Southampton and Cowes (Isle of Wight) from late 2025?

Red Funnel

3. Four warships involved in the War of the Spanish Succession were shipwrecked off the Scilly Isles in 1707, with the loss of up to 2,000 lives. This may have been a factor in the introduction of the Longitude Act in 1714, offering a substantial prize to inventors of a reliable method of measuring longitude at sea. Name any one of the four ships.

HMS Association, HMS Eagle, HMS Romney, HMS Firebrand

4. What is the name of the first US destroyer to be sunk by enemy action when it was torpedoed by a German U-boat near the Scilly Isles in December 1917?

USS Jacob Jones

5. In what year was the BBC's shipping forecast first broadcast?

1925 – it is celebrating its centenary this year

6. What is the name of the containership, operating under charter to Maersk, which collided with and destroyed Baltimore's Francis Scott Key Bridge?

MV Dali. The ship has now been repaired at a shipyard in China and has returned to service.

7. What is the name of the Royal Navy destroyer located in the Historic Dockyard Chatham which acts as the National Destroyer Memorial?

HMS Cavalier

8. Which cruise operator has Jewel Class ships called Gem, Jade, Jewel and Pearl?

Norwegian Cruise Line

9. Which organisation, founded in 1909, has a responsibility extending from just downstream of Teddington Lock to the end of the Essex/Kent strait of the North Sea (between Gunfleet Lighthouse near Frinton to the North and Margate to the South)?

Port of London Authority

10. What type of ships are the Royal Navy ships: Daring, Diamond and Duncan?

Type 45 Destroyers (Daring class)