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### [In the Black Sea, the enemy suddenly activated the presence of large amphibious ships](#)

In the Black Sea, 14 warships of the Russian fleet, including 4 surface missile carriers equipped with 26-calibre missiles, continue their stay in missile safe areas (near the southern coast of Crimea). The presence of 4 large amphibious ships was suddenly activated. This was reported by the Operational Command "South", reports UNN. "The sea is stormy, which means that the landing force, despite its quantitative presence, will be qualitatively unable to implement crazy tasks. At the same time, the sea can generously throw mine surprises. Therefore, not only the threat of missile strikes. is carried by the Black Sea in the presence of the enemy. The danger of undermining in coastal waters and some areas of the coastline remains relevant", - says the message OK "South". We will recall Unsuccessful on land, the enemy conducted 19 air strikes along the contact line during the day of battle. 3 strikes were carried out by our aircraft, and 270 firing missions were carried out by missile and artillery units.

Source: <https://www.blackseanews.net/read/194223>

### [After Romania and the coastal battery programme, Spain also chooses NSM. Madrid to replace Harpoon anti-ship missiles](#)

To replace the Harpoon anti-ship missile in its naval forces by 2030, Spain launched a tender to which MBDA responded with the Exocet MM40 Block 3C, Sweden's Saab with the RBS 15 Mk3+ and Norway's Kongsberg Defense & Aerospace with the Naval Strike Missile (NSM).

Finally, Madrid chose Kongsberg's offer to equip its newest frigates.

According to a 9 September press release, the manufacturer confirmed that NSM has been selected by Spain to equip the five Álvaro de Bazán (F-100) class frigates, as well as the future five F-110 class frigates to be built by Spanish shipyard Navantia.

"KONGSBERG has received confirmation that the Spanish Navy will purchase the Naval Strike Missile (NSM) to replace the Harpoon missile when it is retired from active service," the press release said.

However, from an industrial point of view, this choice is not surprising as Navantia and Kongsberg are used to working together, with the Royal Norwegian Navy's four frigates, all equipped with NSM, being built by the Spanish shipyard, French publication Zone Militaire estimates.

NSM also chosen by Romania

In addition to Spain [and, of course, Norway], the NSM anti-ship missile has been chosen by the US, Poland, Romania, Canada, Malaysia, Germany and, more recently, Australia.

The NSM is a fifth-generation anti-ship missile. With a low radar signature and a range of about 185 km, it is equipped with a combined navigation system consisting of an inertial unit, a GPS and a TERCOM [TERrain CONtour Matching] navigation system, which allows it to fly at very low altitude.

Capable of performing random manoeuvres to counter adversary defences, it has an advanced target detection, recognition and discrimination capability based on the combination of an infrared guidance head and a database of potential targets.

On the same day as the NSM confirmation for Spain, Kongsberg also announced a \$33.4 million order from the US Navy.

Romania has chosen, in April 2021, to protect its sea coast with NSM missiles which, will be mounted on mobile launch facilities. According to the contract, the missiles and facilities are to be delivered by 2024.

Source: [https://www.defenseromania.ro/dupa-romania-si-programul-bateriilor-de-coasta-spania-alege-si-ea-nsm-madridul-va-inlocui-rachetele-antinava-harpoon\\_618128.html](https://www.defenseromania.ro/dupa-romania-si-programul-bateriilor-de-coasta-spania-alege-si-ea-nsm-madridul-va-inlocui-rachetele-antinava-harpoon_618128.html)

### [Unmanned underwater vehicles launched from the "Captain-Commander Alexandru Cătuneanu" ship](#)

The hydrographic seagoing vessel "Captain-Commander Alexandru Cătuneanu" is participating in the multinational exercises "REPMUS 22" and "DYMS 22" in the North Atlantic Ocean and the Port of Lisbon. The two exercises are organised by the Portuguese Naval Forces from 9-23 September and 23-30 September respectively. "REPMUS" and "DYNAMIC MESSENGER" ("DYMS 22") are NATO exercises, conducted in the North Atlantic, aimed at promoting the development of unmanned maritime systems capabilities and improving the interoperability of these systems. The main objective of the exercises is to strengthen cooperation and increase interoperability between NATO structures in the fields of hydrography, oceanography and autonomous hydrographic and oceanographic research equipment.

On Thursday, 8 September, five underwater unmanned vehicle / glider (AUV / glider) were launched from the maritime hydrographic vessel "Captain-Commander Alexandru Cătuneanu" to carry out research missions to obtain and transmit oceanographic data during the two exercises. These gliders belong to the Romanian, French and UK Naval Forces and are operated via satellites. The data collected are processed in the ship's own laboratory by specialists from the Maritime Hydrographic Directorate with the support of a representative of the Portuguese Hydrographic Institute.

"REPMUS 22" is the largest annual robotics exercise in Portugal, bringing together various navies, as well as academic and industrial research institutions, in an effort to test and put into practice technologies and concepts that enable more efficient operations.

"DYMS 22" is a NATO exercise in which NATO operational communities work together with industry and academia to promote the operational integration of unmanned maritime systems into NATO operations through extensive experimentation.

The seagoing hydrographic ship "Captain-Commander Alexandru Cătuneanu" is commanded by Lieutenant-Commander Toma Laurențiu and has on board a crew of 59 military personnel as well as four staff officers.

Source: <https://cugetliber.ro/stiri-eveniment-vehicule-subacvatice-fara-pilot-lansate-de-la-bordul- navei-capitan-comandor-alexandru-catuneanu-464929>

### [Seven more grain ships left Ukrainian ports through the "grain corridor".](#)

On September 13, seven more ships carrying Ukrainian agricultural products left the ports of Chornomorsk, Odessa and Pivdenny through the "grain corridor". This was reported by the Turkish Ministry of Defence on Twitter, Ukrinform reports. "In the grain transport: as of this morning, 7 more grain ships have left Ukrainian ports," the message said. According to OVA Odessa, in general, during the "grain initiative" more than 120 ships left the ports of Greater Odessa, more than 2.7 million tons of agricultural products were exported to 19 countries. As reported, in Istanbul on 22 July, at the suggestion of the United Nations, Ukraine, Turkey and UN Secretary-General Antonio Guterres signed the Initiative on the safe transport of grain and food products from the ports of Odessa, Chornomorsk and Pivdenny.

Source: <https://www.blackseanews.net/read/194274>

### [Qatar celebrates the arrival of the corvette "Al Zubarah" and the OPV "Musherib".](#)

The Fincantieri-built Doha-class air defence corvette "Al Zubarah" and the offshore patrol vessel "Musherib" were welcomed by the Qatar Emiri Navy on 12 September 2022. Amir Sheikh Tamim bin Hamad al-Thani, Emir of Qatar and representatives from Fincantieri attended the ceremony.

The arrival in Qatar of the corvette "Al Zubarah" and the OPV - Offshore Patrol Vessel "Musherib", built at the Riva Trigoso and Muggiano Integrated Military Shipyard as part of the Qatar Ministry of Defence's naval procurement programme, was celebrated today with a ceremony at the Umm Al Houl base in the presence of Amir Sheikh Tamim bin Hamad Al-Thani. On this occasion, the company was represented by President Claudio Graziano and Chief Executive Officer and Managing Director Pierroberto Folgiero. A delegation from the client country led by Khalid bin Mohammed Al Attiyah, Deputy Prime Minister and Minister of State for Affairs and General Staff, Major General Abdulla Bin Hassan Al Sulaiti, Commander of the Qatar Emiri Naval Forces, also attended. The ships will soon enter service for the upcoming FIFA World Cup Qatar 2022. The Fincantieri Services Doha offices, which will monitor the Group's activities in the area, were then inaugurated.

With a maximum displacement of around 3,250 tonnes, a length and 107 and 14.7 metres wide respectively, the new Al Zubarah class corvettes have a CODAD-configured propulsion system based on four diesel engines connected via gearboxes to two variable pitch shaft lines. conventional propellers and rudders providing a maximum continuous and cruising speed of 28 and 15 knots respectively. With such compact size and displacement and a crew core of 98 plus accommodation for 14 additional crew, the new platform features a sophisticated and robust combat system with a full range of anti-air warfare (AAW, with

Aster 30 Block 1 and RAM missiles) and anti-surface warfare (ASuW) operations, while the capabilities of the ASW platform are limited to self-defence, although the ship can accommodate and operate an NH90 NFH maritime helicopter that can be equipped with an ASW that includes light torpedoes.

Source: <https://www.navalnews.com/naval-news/2022/09/qatar-celebrates-the-arrival-of-al-zubarah-corvette-and-musherib-opv/>

### [Kongsberg receives new NSM order for U.S. Navy's OTH-WS program](#)

Kongsberg Defence & Aerospace AS (KONGSBERG) has received an order from Raytheon Missiles & Defense for Naval Strike Missiles (NSM) to the US Navy Over-The-Horizon Weapon System (OTH WS) program valued at 328 MNOK (~\$33.5 million).

The order is related to the OTH WS framework agreement announced on May 31, 2018, with a total cumulative scope of 7.8 BNOK (~793 million). So far, KONGSBERG has received orders for 1,762 MNOK (~\$180 million) under this framework agreement. Raytheon is the prime contractor for the US Navy.

"We are seeing a significant increase in annual calls. This creates jobs and demand for increased production capacity for both us and our suppliers. As announced at KONGSBERG's CMD in June, the company has begun a significant investment in a new missile factory." Øyvind Kolset, Director of Kongsberg's Missile Systems Division

#### Over-the-horizon weapon system (OTH-WS)

The OTH-WS programme is a long-range, surface-to-surface warfare system designed to engage maritime targets both within and beyond the radar horizon. The system consists of an operator interface console, Naval Strike Missile (NSM) and Missile Launch System. OTH-WS is a stand-alone system that requires minimal integration into the host platform. OTH WS will receive targeting data via tactical communications from combat platforms or airborne sensors and requires no guidance after launch. The U.S. Navy plans to integrate the OTH WS on Littoral Combat Ship (LCS) variants; guided missile frigate, FFG(X); and LPD-class amphibious ships. The Marine Corps is also procuring NSM to install on the Navy/Navy Expeditionary Ship Interdiction System, which places an NSM launcher on a mobile launch platform based on Joint Light Tactical Vehicles (JLTV).

Source: <https://www.navalnews.com/naval-news/2022/09/kongsberg-receives-a-new-nsm-order-for-us-navys-oth-ws-program/> ; <https://www.dote.osd.mil/Portals/97/pub/reports/FY2020/navy/2020oth-ws.pdf?ver=MR9sHHzGOSmGqyf0erpJRw%3D%3D>

[Photos released by the USN in late August reveal that new electronic countermeasures and SATCOM equipment have been installed aboard the Egyptian frigate Al-Galala.](#)

Every picture tells a story as Egyptian Navy frigate receives Italian EW upgrade  
Photos released by the USN in late August reveal that new electronic countermeasures and SATCOM equipment have been installed aboard the Egyptian frigate Al-Galala. Recent photographic evidence shows that at least one of the two FREMM frigates built in Italy for Egypt has been fitted with new electronic countermeasures (ECM) and SATCOM systems. Shephard reported in January 2022 that several ECM technologies had been removed from Egyptian FREMM ships for Italian national security reasons - but images released by US Naval Forces Central Command on 30 August revealed that the Egyptian Navy frigate Al-

Galala is now equipped with a new ECM System and SATCOM antenna. When the original €1.2 billion (\$1.3 billion) contract was signed in August 2020.

Source: <https://www.shephardmedia.com/news/naval-warfare/every-picture-tells-a-story-as-egyptian-navy-frigate-obtains-italian-ew-upgrade/>

### First methanol-fuelled fuel cell system approved by RINA

Research continues to expand on the potential of fuel cells to meet the energy challenges for the next generation of ocean shipping. In the latest development, German battery technology company Freudenberg e-Power Systems has received type approval from classification society RINA for its first methanol-powered fuel cell system, an application the company believes could be the solution for large vessels, such as cruise and container ships, that sail long distances. The new fuel cells build on hydrogen fuel cell work that is currently applied for limited applications on cruise ships as well as others such as offshore support vessels. Freudenberg has developed an innovative approach to the use of methanol that combines highly efficient fuel reforming technology with a long-life PEM fuel cell in a modular, scalable system unit. It generates hydrogen through steam reforming, which then reacts with oxygen in the air in the fuel cell to produce the electricity needed for both propulsion and the ship's electrical system. The heat required for the reformer can be obtained directly from the waste heat of the fuel cells. The fuel cell stack, the reformer and control electronics, and all the components for supplying the media are housed in a prefabricated modular unit. The company points out that hydrogen is not practical for cruise ships, tankers or containers, which require routing flexibility and often operate voyages of more than 5,000 nautical miles. While fuel cells have advantages due to their high efficiency and low maintenance requirements, Freudenberg says that due to its low volumetric energy density, hydrogen as a direct energy storage medium is not practical because of the sheer volume and huge hydrogen tanks in a cryogenic or highly compressed system. condition that would be required. In addition, pure electric battery solutions have high weight and space requirements. The methanol we highlight is a simple alcohol that is liquid under normal environmental conditions and has a volumetric energy density about three times that of liquefied hydrogen. The safety of their approach, Freudenberg says, is demonstrated in RINA type approval while using the chemical process they believe creates an economical alternative for shipping. "Gaining type approval is a major milestone for the maritime industry," said Dr Manfred Stefener, managing director of Freudenberg Fuel Cell e-Power Systems, "This lays the foundation for fuel cell systems to be used at megawatt scale on cruise ships and the international ocean fleet. The marine energy systems of the future will be safe and highly efficient thanks to fuel cell technology." Freudenberg is currently working with a project consortium focusing on passenger transport, which includes Carnival Maritime (AIDA Cruises), Meyer Werft, as well as Lürssen Werft, besecke, DLR, EPEA and classification society DNV GL. Meyer Werft is currently building the Silver Nova, which will be equipped with the world's largest fuel cell system on a cruise ship. The 54,700 gross tonne vessel is due to enter service in July 2023 and will be able to run its hotel operations on fuel cell without power from combustion engines. Meyer Werft and Freudenberg are also working together on the Pa-X-ell2 research project, in which a fuel cell system is being retrofitted aboard Carnival Corporation's AIDAnova. The companies also plan to cooperate further, not only on newbuildings but also on existing ships. Meyer Neptun Engineering is developing retrofit solutions and will work closely with Freudenberg to advance joint development for future fueling solutions.

Source: <https://www.maritime-executive.com/article/first-methanol-powered-fuel-cell-system-approved-by-rina>

## Danish training ship hits US Navy LCS

On Sunday, a Danish sail training ship suffered minor damage in a collision with the battleship USS Minneapolis-Saint Paul at a pier in Baltimore, Maryland. According to local media, the Danish training ship Danmark was being towed by two tugs when it struck some piers near the pier.

"No U.S. Navy personnel were injured and no serious damage sustained aboard the USS Minneapolis St. Paul (LCS 21)," a Navy spokesman said in a statement. The Navy said the victim was part of a "fantastic" week for the fleet in Baltimore. A video of the scene shows that a boom from the stern of the sailboat contacted the lifelines on the Minneapolis-Saint Paul bow, breaking several. An aerial photo provided by a bystander appears to show that the sailboat's stern also made contact with the LCS stem. NEW: Video shows Danish ship Danmark colliding with USS Minneapolis-St. Paul as Danmark was being pulled out of Inner Harbor #fleetweekfail pic.twitter.com/fplUhYuhCk - Christian Schaffer (@schaffer\_tv) September 11, 2022 Fleet Week in Baltimore went according to plan in other respects. The event includes ship tours, flyovers, exhibitions and Fleet Week festivals at several Baltimore locations. The event continues through Tuesday. Other ships in port for Fleet Week include the amphibious USS Carter Hall, the fast transport USNS Newport, the Royal Canadian Navy patrol ship HMCS Moncton and the U.S. Coast Guard cutter USCGC James Rankin. More than 2,300 military personnel are expected to participate. The Danmark is a full sail training ship built in 1933, operated by the Danish Maritime Authority. She operates with a student crew of 80 and serves as a training platform and overseas ambassador for Danish shipping. USS Minneapolis-Saint Paul is the latest ship delivered in the Freedom-class series of littoral combat ships. She is one of six Freedom LCS ships not listed for early retirement.

Source: <https://www.maritime-executive.com/article/danish-sail-training-ship-strikes-a-u-s-navy-lcs-at-baltimore-pier>

## Jordan detains cargo ship that strayed near coral reef

Jordan on Tuesday detained a cargo ship arriving from Egypt that was towed after it strayed near a coral reef nature reserve off the beach of the Red Sea port of Aqaba, port officials said. Any possible environmental damage caused by the ship named Lotus, far off course and in shallow waters near the 7km-long marine reserve, has been assessed, they said. "Its route has been corrected and it has been towed to the quay and is safe," a port official told Reuters, adding that the vessel has been banned from leaving port pending an investigation into why it strayed off course and any damage caused. The cargo ship arrived early on Tuesday to load a shipment of potash from the city's fertiliser dock, an official said. The pristine coral reef in the city of Aqaba - with its many species of fish and dozens of shallow-water formations - is a major tourist attraction at Jordan's only outlet to the sea.

Source: <https://www.marinelink.com/news/jordan-detains-cargo-ship-strayed-near-499414>