

MS DAILY BRIEF - 24 August 2022

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French Rafale M jets will take off from France's new aircraft carrier using EMALS - American electromagnetic catapults

It's official. France's new nuclear-powered aircraft carrier will feature "made in the USA" electromagnetic catapults. It's the new Electromagnetic Aircraft Launch System (EMALS) electromagnetic catapult system.

The French publication Zone Militaire reports that on 19 August the Pentagon officially announced that it had awarded the American manufacturer General Atomics a contract worth almost 9 million euros for the development of EMALS electromagnetic catapults plus auxiliary systems for the French aircraft carrier to be built under the PANG programme.

The PANG programme will lead to the construction of a new state-of-the-art French aircraft carrier for the French Navy, a nuclear-powered aircraft carrier that will replace the French aircraft carrier Charles de Gaulle. The new aircraft carrier is currently in the design phase.

Paris plans for the new aircraft carrier to replace the Charles de Gaulle in 2038.

The French were inspired in their choice of electromagnetic catapult by the new American aircraft carrier USS Gerald R. Ford.

As a reminder, last year the US Defense Security and Cooperation Agency (DSCA) issued a favourable report recommending that the US Congress accept a potential sale of two electromagnetic catapults to France, plus several auxiliary systems for the PANG programme.

DSCA estimates the value of the contract at \$1.3 billion, or about €1.2 billion. The French point out that the price is only an estimate, expecting it to be lower or even higher in the end, depending also on the euro exchange rate.

The new electromagnetic catapults chosen by the French are the same ones on the US's newest aircraft carrier - the USS Gerald R. Ford. Last year, a French delegation visited the US and "inspected" the American aircraft carrier.

The fact is that the Americans seem to have solved the problem with the EMALS electromagnetic catapult. This seemed to be the Achilles heel for the American aircraft carrier. Problems with this new system started as early as 2017. At the time, former President Donald Trump, after inspecting the ship, expressed disappointment with the new electromagnetic catapult systems and called for a return to the old systems implemented on Nimitz-class aircraft carriers. But the Americans seem to have solved the USS Gerald R. Ford's big problem and now EMALS will be deployed on France's new state-of-the-art aircraft carrier.

STOBAR and CATOBAR catapult systems

The STOBAR (Short Take-off but arrested recovery) take-off system is the classic system, using the ski jump. It should be noted that aircraft operating from this system have a smaller payload and a shorter range compared to aircraft operating from the CATOBAR configuration.

The CATOBAR (Catapult Assisted Take-off Barrier assisted recovery) take-off system is the take-off system operating with a steam catapult or electromagnetic catapult.

It should be noted that CATOBAR systems are used by nuclear-powered aircraft carriers, such as the Chares de Gaulle or US aircraft carriers. For example, Admiral Kuznetsov, which has conventional propulsion, uses the STOBAR take-off configuration.

Source: https://www.defenseromania.ro/aeronavele-rafale-m-franceze-vor-decola-de-pe-noul-portavion-al-frantei-folosind-catapulta-electromagnetica-americana_617836.html

The luxury yacht "Saga", about 40 metres long, sank on Saturday around 1pm about nine nautical miles off the coast of the port of Catanzaro, Italy. Five passengers were rescued by a Romanian vessel.

The superyacht "Saga", sailing under the flag of the Cayman Islands with an Italian crew on board, was en route from Gallipoli to Milazzo,

On Friday evening, the Operations Command of the Crotona Port Authority was called by the ship's master who reported that the vessel was taking on water at the stern.

A Romanian patrol boat, on duty on behalf of Frontex agency, and a patrol boat CP 321 from Crotona were sent to the area.

The first four passengers and one crew member were immediately secured on the Romanian patrol boat and subsequently transferred to the patrol boat and taken to the port of Marina Catanzaro, while the shipping company contacted a towing company in Crotona to try to rescue the yacht.

At dawn the tug Alessandro Secondo arrived from Crotona and began to tow the Saga towards Crotona, the only port the vessel could have entered, taking on board four other crew members, including the captain.

The personnel on board the yacht "Saga" were transferred to the patrol boat Cp 321 to be taken to port.

Mega yacht Saga di 40 metri affonda al largo di Catanzaro: salvati tutti gli ospiti a bordo
<https://t.co/Lgk8aYG5wE>

- Il Messaggero (@ilmessaggeroit) August 20, 2022

The situation worsened due to the weather conditions and the constant heeling of the yacht, so much so that it seemed impossible to reach Crotona and the only possibility to save it proved to be unsuccessful, according to ilmessaggero.it.

Despite the effort, the water invaded the yacht, so it was necessary to abandon it, which sank in a very short time.

Source: <https://newsweek.ro/international/video-iahtul-de-lux-saga-s-a-scufundat-in-italia-cinci-pasageri-salvati-de-o-nava-romaneasca>

A ship with food products left the port of Chornomorsk

Today, another food ship left the port of Chornomorsk via the "grain corridor". This is reported by Ukrinform with reference to the Turkish Ministry of National Defence on Twitter. "As part of the grain shipment, another ship left the Ukrainian port of Chornomorsk this morning. In addition, 3 ships heading from Ukraine and 3 ships heading to Ukraine will be checked today," the message said.

Source: <https://www.blackseanews.net/read/193433>

ANPA "Surogat-V". A new version of a promising concept

In recent years, the Rubin Central Design Office has been actively involved in the topic of autonomous underwater vehicles (AUV) and has already developed a number of similar projects. At the recent Army-2022 forum, the office presented a new model of this class - the Surrogate-V. It was created on the basis of an already well-known design, but thanks to several innovations, it was possible to expand the functions of the complex and the range of its tasks.

Autonomous slave

At last week's Army-2022 forum, MT's Rubin Central Design Office showed materials about a number of its developments, both already known and completely new. In particular, a model of a new AUV called "Surrogate-B" or Surrogate-W was demonstrated. The letter "B" in the name stands for "slave" or "wingman" and reflects the main feature of the design.

The new "Surrogate-V" project envisages the construction of a heavy multi-purpose AUV designed to be placed on submarines and capable of working alongside them. The developer organisation said such a device would take over some of the tasks of fully-fledged submarines. Its use will allow various activities to be carried out efficiently without risk to the transport vessel.

AUVs are proposed to be used for reconnaissance using active search tools, for communication, etc. With such work, the device may unmask and give away its location, however, the submarine, which plays the role of "leader", will remain safe. The Surogat-V device looks like a small submarine. It has a streamlined body with several protruding elements, planes and rudders. In the body and on most sides there are hydroacoustic instruments under a characteristic band of absorbent material. In the stern there is an annular channel for the water jet.

Some features are revealed.

The displacement of the product has remained at the previous design level - 40 tons. Due to the introduction of new solutions and components, the functions of the device are expanded. In addition, new lithium-ion batteries increase the cruising range to 800 miles. A new power plant based on electrochemical generators is under development. The AUV will be recharged both on board the carrier and using shore-side charging stations.

The ANPA Surogat-V model was presented on the same stand as the promising Arktur nuclear submarine model. The latter can be the carrier of various underwater vehicles,

including heavy class products. Special compartments are provided for their placement at the rear of the hull. Prospects for the Surrogat-B project have not yet been specified. It is not known how soon construction and testing of the experimental equipment will take place. The Ministry of Defence is not commenting on this either. However, models of the new technology have been on display at the Naval High Command stand, indicating interest in such developments. Apparently, details of the work will be announced as certain events unfold.

New modification

It should be noted that the current Surrogate-V AUV design was not developed from scratch. It was based on the project of the same name, the existence of which became known a few years ago. So, in 2016-17 it became known that the Central Design Office of MT "Rubin" launched a project with the code "Surogat" on its own initiative. Its purpose was to create a special underwater vehicle for conducting fleet exercises. According to information at the time, the Surrogate product will be an unmanned submarine with a length of 17 m and a displacement of 40 tons, for which a complete power plant based on lithium-ion batteries has been created. The propeller engine was to provide a cruising speed of 5 knots, making it possible to achieve a range of up to 600 miles. Maximum speed - 24 knots with range restrictions.

An autonomous control system with a number of basic functions was created for the Surogat. It must control the movement and ensure the passage of a certain route, as well as apply a target load of one type or another. The device was intended to be used as a training target for practising anti-submarine defence tasks. For this purpose, it was proposed to install the necessary devices on it, as well as built-in and towed antenna devices. With their help, the surrogate, justifying its name, had to mimic the physical fields of a large submarine. The possibility of simulating ships of different types, domestic and foreign, was mentioned. The "Surogat" research work was completed by mid-2020 and the documentation on it was transferred to the Ministry of Defence. The army had to study the development of the initiative and draw conclusions. Upon receiving a positive opinion, the project could be developed and in the future reach full operation. A year later, in September 2021, the Rubin Central Design Office of the MT announced further work on the surrogate theme. This time, the ability of AUVs to mimic submarines was mentioned as a way to deceive the enemy. It was argued that recent technological advances already make it possible to deceive ship and aircraft detection systems. In the future, the same effect will be achieved for stationary systems. Extending the function The original AUV "Surrogate" training project has been developed and this process has led to an exciting new development. Unlike its predecessor, "Surrogate-B" is intended to function inclusively. in a combat situation. At the same time, both projects are of great interest - both in terms of the basic ideas and the solutions found.

The concept of a special simulator capable of participating in PLO exercises as a conditional target is very interesting and has obvious advantages. Currently, the role of a simulated enemy is assigned to Navy submarines and their crews. For all its advantages, this approach has some disadvantages. The main one is the fundamental impossibility of a full-fledged imitation of foreign submarines through domestic technology. The ANPA "Surogat", in turn, is simpler and cheaper than combatant submarines. Organising exercises with its use is much easier. At the same time, it can carry any appropriate equipment and simulate the physical fields of various underwater objects, primarily submarines of a potential enemy. Exercises of this kind will be much more useful to PLO forces. In the new "Surrogate-B" project it is proposed to use the same AUV capabilities not in a training, but in a real environment. Such a device should mimic not the enemy, but our submarine - and mislead foreign forces. Such a replacement will reduce the likelihood of detecting a carrier and drastically reduce the risk to it. Two submersibles with similar functions, but different roles,

can be maximally unified in design and means of operation. At present, this greatly simplifies the development of two promising complexes, and in the future it will have a positive effect on the production and operation of equipment in the Navy. In addition, the customer can generally abandon the "Surogat" of the first model. The new "Surrogate-V" has all the necessary functions and can also be used in exercises. promising steering Thus, TsKB MT "Rubin" continues to develop the steering of uninhabited autonomous underwater vehicles and now presents another such development. The Surrogate-B project clearly shows what existing technologies and technical solutions can do. It also demonstrates the potential of an interesting concept proposed a few years ago. The MT Central Design Office "Rubin" presented a new AUV project and revealed some information about it. It is now up to the Department of Defense. They should study the proposed concept and determine its value to the Navy. If a positive decision is made, the "Surrogate-B" will be further developed and possibly even go to further testing and operation.

Source: <https://topwar.ru/200663-anpa-surrogat-v-novyj-variant-mnogoobeschajuschej-koncepcii.html>

BAE Systems enters production of tactical data link network commonality for U.S. Navy

The US Navy has awarded BAE Systems a \$42.6 million contract to produce seven Network Tactical Common Data Link (NTCDL) systems.

NTCDL enables the US Navy to simultaneously transmit and receive real-time intelligence, surveillance and reconnaissance data from multiple sources, and enables the exchange of command and control information over multiple data links. The systems will be installed on aircraft carriers and new Constellation-class frigates.

The NTCDL system enhances situational awareness and tactical battlefield advantage through real-time exchange of voice, data, imagery and full motion video from a variety of sources: air, surface, subsurface and man-portable. The BAE Systems solution is a modular, scalable system designed to increase connectivity capability and embrace the evolving waveform. With NTCDL, warfighters will support multiple, simultaneous, networked operations using existing Common Data Links equipment as well as state-of-the-art manned and unmanned platforms.

About BAE Systems NTCDL

NTCDL enables the exchange of mission-critical information when it matters most. The system provides U.S. Navy operators with the ability to simultaneously transmit and receive real-time intelligence, surveillance and reconnaissance (ISR) data from multiple sources and exchange command and control information over separate or independent networks.

"Our system takes this a step further by enabling the sharing, exchange, transfer or distribution of real-time data between military assets such as aircraft, ships and unmanned vehicles. By pooling more data, our system enables operators to effectively communicate command and control protocols between forces to maintain an advantage. We designed NTCDL to be modular and scalable for ease of use in the future. Our open concept gives operators the space they need to address new waveforms and add link capacity to meet their requirements. The design also makes it easy to reprogram the system to accommodate new and emerging missions. Benefit: The Multi-link Common Data Link (CDL) surface terminal meets the U.S. Navy's ever-expanding C4ISR concepts and high-paced operations. Our scalable and modular open system architecture provides fleet-wide deployment across

multiple classes of ships. Software-defined programmable CDL radios. Commercial off-the-shelf network switching fabric provides flexible antenna switching for improved radio frequency link performance."

Source: <https://www.navalnews.com/naval-news/2022/08/bae-systems-enters-production-of-network-tactical-common-data-links-for-u-s-navy/>

MOL gets design approval for first large LCO2 carrier from ClassNK

Japan Mitsui O.S.K. Lines continues its aggressive move to develop large-scale CO2 transport, becoming one of the leaders in this new sector. Capturing and transporting CO2 is a critical component of many industries and countries' long-term plans to decarbonise, but to achieve it requires the development of a new class of vessel, uniquely suited to what has traditionally been a small, niche operation.

In the latest development, MOL reports that it has received approval in principle for its design for a large CO2 carrier. ClassNK has reviewed the designs and issued approval for a vessel capable of transporting 64,000 cubic metres of liquefied CO2. MOL sought to apply its experience in transporting other gas cargoes to develop this new sector. Although the company did not provide full dimensions for the vessel concept, the carrying capacity is almost a quarter larger than MOL's previously discussed concept, which it was developing with Mitsubishi Shipbuilding, which had a maximum capacity of up to 50,000 cubic metres.

In June 2021, MOL launched a research and development project to adopt a large-scale liquefied CO2 carrier in response to a request for proposals from Japan's New Energy and Industrial Technology Development Organization (NEDO). The government-backed organization challenged participants to finalize the conceptual design to support Japan's broader vision for carbon capture. NEDO is sponsoring projects to develop technology for carbon capture, storage and reuse, as well as transporting large amounts of CO2 for permanent offshore storage. The research for this project is led by Japan CCS Co., a company launched in 2008 dedicated to demonstration projects on carbon capture, use, transport and storage technologies. MOL is involved in a number of research projects aimed at developing efficient CO2 transport projects. As part of its projects, NEDO has estimated a potential need to transport up to one million tonnes per year of CO2. Long-distance transport to storage, which could be an abandoned well and other structures, would support storage solutions, while additional amounts of CO2 could be used in other industrial applications. In addition to its involvement in research efforts, MOL was the first major shipping company to invest in the existing market for CO2 transport. MOL invested in the Norwegian shipping company Larvik Shipping in March 2021 both as an entry into the sector and to learn from the company's 30 years of experience in CO2 transport. Larvik is one of a limited number of companies in the world qualified to operate liquefied CO2 vessels for what is known as food-grade CO2, which is used by hospitals, breweries and the food industry. Larvik operates five gas carriers, currently the largest, with a capacity of 1,770 tonnes of CO2.

Source: <https://www.maritime-executive.com/article/mol-gains-design-approval-for-first-large-lco2-carrier-from-classnk>

National Transportation Safety Board: A poor BRM (Bridge Resource Management) caused an allision with untapped offshore platform

The NTSB released its final report last year on the allision (the walking of a vessel onto another vessel that is stationary - as opposed to collision) of a bulker with a decommissioned offshore platform off the coast of Louisiana.

Its investigators determined that poor management of command deck resources and a charting error were the primary causes of the accident.

On January 7, 2021, the bulk carrier Ocean Princess struck oil and gas platform SP-83A about 24 miles south of Pilottown, Louisiana. No pollution or injuries were reported, and damage to the vessel and rig amounted to approximately \$1.5 million.

The Ocean Princess unloaded ore and steel in New Orleans in late December. On January 6, she was floating in the Gulf of Mexico before heading back north to load grain. The captain planned to drift at night, with the engine on standby for 15 minutes, keeping away from traffic and the three rigs in the area. To give crew members time to rest after a long day of cleaning cargo holds, the skipper programmed himself on the bridge, joining the second officer. The ship drifted at about 2-3 knots in a northerly direction, with intervening rain showers and stops periodically limiting visibility. Until the early hours of January 7, the master and second officer worked on administrative duties on the bridge. At about 0100 hours, the ship headed for a busy route and they called the engine room to prepare for manoeuvring. With the skipper in command, they headed away from the fairway with a "slow bell" (when sailors were notified of captains' or pilots' orders by the ringing or ringing of a bell). At 0113 hours, as they were moving away, the skipper saw a faint yellow light and checked the radar, which was set at a range of about 1.5-3 miles. The second officer took a look and confirmed that the contact was a platform, but could not visually determine it. It looked like an ENC mapped platform about 5-6 miles away and they concluded it was not a hazard. They were wrong, and the commander did not fully appreciate the risk until about 40 seconds before contact. Last minute maneuvers were unsuccessful and the ship lined up with the platform at four knots. The starboard anchor got stuck in the platform structure, and the bulker dangled on the anchor chain until morning when it could be safely cut away.

The master and chief officer told the NTSB that they had never seen the SP-83A on radar. After contact, they discovered that the rig was properly marked on the paper chart (an Admiralty product) - but the SP-83A did not appear on the ECDIS ENC (a NOAA product). The NTSB verified that the SP-83A platform was not marked on the official US charts that fed into the Ocean Princess ECDIS. It was correctly represented when the platform was commissioned in 1990, but was removed from the NOAA charts in 2010 for unknown reasons. Its absence went unnoticed and uncorrected until the collision. (After the accident, NOAA added it back.)

The NTSB determined that the faint BRM was the likely cause of the accident because the bridge team had noticed the rig lights 10 minutes before, but failed to take timely and effective action. The absence of the ENC platform was a contributing factor. "Technology, such as an ECDIS, can lead to operator overconfidence and overreliance, which degrades sound navigation practices and negatively affects situational awareness," the NTSB advised. "When identifying hazards, bridge teams should avoid over-reliance on a single data source."

Source: <https://www.maritime-executive.com/article/ntsb-poor-brm-caused-allision-with-uncharted-offshore-platform>

Hapag-Lloyd begins major green fleet modernisation programme

German container shipping group Hapag-Lloyd has announced that it has begun a five-year fleet modernisation programme to improve the energy efficiency of its container fleet. The programme will require an investment "in the triple-digit million range", Hapag-Lloyd said. The company said at least 86 of its ships will be fitted with new, more efficient propellers. The first to be upgraded, the 7,500 TEU Ningbo Express, will receive a new energy-efficiency optimised propeller from German manufacturer MMG, to be installed in Dubai in September. As a result, Hapag-Lloyd expects the ship's fuel burn and CO2 emissions

to be reduced by 10% to 13%, depending on sailing conditions. At the same time, 36 ships will receive new, optimised bow bulbs. During their scheduled stay in dry dock, antifouling coatings will be applied to all ships to reduce drag on the outside of the hull below the waterline. The majority of the fleet upgrades will be carried out by 2025 as the company continues to work towards meeting climate targets, Hapag-Lloyd said. "We aim to be climate neutral by 2045. To achieve this goal, we have set ourselves the interim target of reducing the CO2 intensity of our own ships by 30% already by 2030. To do this, we are investing in future-proof ships, while simultaneously focusing on adapting our existing fleet for the future. The fleet modernisation programme will increase the energy efficiency of the entire fleet," said Dr. Maximilian Rothkopf, COO of Hapag-Lloyd AG.

Source: <https://www.marinelink.com/news/hapaglloyd-begins-major-green-fleet-498948>

Canada and Germany sign Transatlantic Green Hydrogen Pact

Canada plans to start delivering green hydrogen produced by wind farms to Germany by 2025, the first step in a partnership to help Europe's largest economy reduce its reliance on fossil fuels. Canadian Prime Minister Justin Trudeau and German Chancellor Olaf Scholz on Tuesday signed a five-year agreement in Newfoundland and Labrador, a remote province on Canada's east coast with abundant wind power potential. The gaseous fuel, which burns enough to be used for steelmaking, is seen playing a key role in reducing industrial emissions as well as possibly powering cars, trucks and ships. The two countries commit in the pact to create "a transatlantic hydrogen supply chain well before 2030, with first deliveries following 2025". The Korean shipbuilder sees hydrogen delivery ready by 2025 Canada "aims to become a major producer and exporter of hydrogen and related clean technologies," according to the agreement, and wants to attract foreign direct investment to build the infrastructure. Meanwhile, Germany "aims to import significant amounts of renewable hydrogen to decarbonise its hard-to-mitigate sectors in line with its 2045 climate neutrality target".

Trudeau and Scholz signed the agreement in Stephenville, a small town with a deep-water port on St. Lawrence Bay, more than 1,000 miles northeast of New York. There are at least two large-scale wind farm projects proposed for the area that would use electrolysis of water to produce hydrogen. Testing hydrogen ships proves feasible.

Speaking earlier in the day at a business conference in Toronto, Scholz said Canada "has almost unlimited potential to become a superpower in sustainable energy and sustainable resource production." The chancellor added that "Germany, for its part, is ready to become one of our closest partners. Scholz is on the last day of a three-day visit to Canada, bringing a delegation that includes Economy Minister Robert Habeck and top German business leaders. On this trip, Volkswagen AG and Mercedes-Benz Group AG have reached agreements with Canada to secure access to raw materials such as nickel, cobalt and lithium for battery production. Scholz also met with Canadian pension fund representatives in Toronto to lobby for more green investments to support Germany's transition to a carbon-neutral economy. Canadian and German officials are still examining options for transporting liquefied natural gas to Germany, but Trudeau said Monday there needs to be a strong business case to justify building export infrastructure on Canada's east coast. Expressing support for Scholz's effort to rid his country of Russian gas, the prime minister said he would be willing to ease the regulatory burden if the private sector decides LNG export projects make economic sense.

Source: <https://gcaptain.com/canada-and-germany-ink-transatlantic-green-hydrogen-pact/>