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The Hovercraft Society
Formed in 1971

News Notes

NO 2-25 MARCH 2025

The Operations Team At Oita after training in January this year. It is expected that full three craft services will go into operation during the spring.

INTRODUCTION

It is good to see that Textron Systems now seem to be up to speed building and delivering the SSCs to US Navy. There are many more to go on this long-term project. On the SES front we have news from Aircat of their vessels in Angola, and the associated company Eureka marketing new versions including an unmanned version. It is interesting that Textron has also been looking at unmanned options for its SSC. Craft and vessels of such size are perhaps too big to be called 'drones' but the approach is the same – personnel back somewhere in an operations centre or on board an LSD ship offshore. Once this technology matures in the same way aerial drones have it will significantly change Naval and Marine Commando strategy.

Silverstream have also gained long term success with two shipowners using air lubrication.

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At the Light Craft end of the scale, we have a report from the HCGB AGM that was held in early March.

NEWS ITEMS

LCAC 112 ACCEPTED BY USN

The U.S. Navy accepted delivery of Ship to Shore Connector, Landing Craft, Air Cushion (LCAC) 112, from Textron Systems, March 13.

Delivery of LCAC 112 follows completion of acceptance trials and represents the official transfer of the craft from the shipbuilder to the Navy. During acceptance trials, the Navy's Board of Inspection and Survey tested the readiness and capability of the craft to effectively meet requirements.

This addition to the fleet enhances Navy's amphibious capability, providing a vital asset for rapid deployment and logistical support.

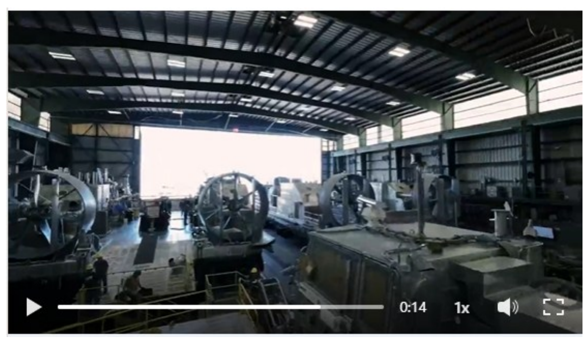
"This new craft will provide the Navy and Marine Corps team with unparalleled capability in amphibious warfare, ensuring we remain agile and responsive to emerging threats and global challenges," said Angela Bonner, program manager for Amphibious Assault and Connectors Programs, Program Executive Office, Ships (PEO Ships). *"The introduction of LCAC 112 into our fleet marks another significant milestone in our ongoing efforts to maintain and enhance operational readiness."*

The current LCAC is built with configurations, dimensions, and clearances similar to legacy LCACs—ensuring that it is fully compatible with existing well deck-equipped amphibious ships. LCACs can carry an approximate 60 to 75-ton payload and primarily transport weapon systems, equipment, cargo, and assault element personnel through a wide range of conditions, including over-the-beach.

The SSC will be able to embark aboard and operate with LPD 17, LSD 41, LSD 49, LHA 1, and LHD 1 ship classes, as well as Expeditionary Transfer Dock.

"The successful delivery of LCAC 112 demonstrates the strong partnership between the Navy and Textron Systems," said Bonner. *"This advanced craft will significantly enhance operations, providing a critical link in our ability to project power and support joint operations across the globe."*

Textron Systems is currently in serial production of LCACs 113-125. Two views of the facility from a short video issued by the company are shown below. The video can be viewed here.



The video is just 1:14 but takes us on a drone sweep through the facility from plate shop, inverted hull fabrication, superstructure installation and to outside slipway apron where there are several completed craft.

PEO Ships, one of the Department of Defence's largest acquisition organizations, is responsible for executing the development and procurement of all destroyers, amphibious ships and craft, and auxiliary ships, including special mission ships, sealift ships and support ships.

An overview of the SSC programme is given on the USN NAVSEA site. It can be viewed here.

Textron Systems will be presenting the SSC at the Sea-Air-Space Exhibition and Conference from 7-9 April at the Gaylord National Convention Center. Their team will be on-site at booth #1827 ready to discuss how the SSC is delivering enhanced power and critical capabilities to the U.S. Navy fleet!

GRIFFON MARINE
SOLUTIONS • SHIPYARD • SUPPORT

GHL becomes Griffon Marine

Griffon Hoverwork has rebranded as **Griffon Marine**, reflecting the company's extensive skills, core competencies, and commitment to maritime excellence. With over six decades of expertise in amphibious and high-speed marine vessel design, build, and support, this new branding highlights the company's enduring capabilities and world-class service offerings.

Griffon Marine is structured into three core divisions—**Solutions, Shipyard, and Support**—each focused on delivering excellence in their respective fields.

Griffon Marine Solutions offers vessel design and consultancy, assisting clients in navigating the ever-evolving challenges of marine operations. With a focus on Maritime Border Security, Amphibious Insertion, Riverine, and High-Speed Near Coastal Ferries, the division integrates advanced technologies, hydrodynamic optimisation, and alternative propulsion systems to create intelligent and efficient vessels. Whether developing new designs or upgrading existing fleets, Griffon Marine Solutions ensures enhanced performance, sustainability, and regulatory compliance.

Griffon Marine Shipyard, based at Trafalgar Wharf in Portchester, provides over 36,000 square feet of specialised construction space dedicated to lightweight marine vessels and aluminium fabrications. The shipyard's state-of-the-art capabilities include advanced mechanical and electrical engineering, and internationally recognised standards of outfitting and certification. The facility supports new builds, maintenance, and refit projects, both on-site and internationally.

Griffon Marine Support is dedicated to maximising operational readiness for marine operators worldwide. With 24/7 global support, the division ensures vessel uptime through the provision of spare parts, engineering services, and crew training. Leveraging a highly experienced team and trusted partners, Griffon Marine Support serves coastguards, navies, armies, and ferry operators with mission-critical reliability.

Griffon Hoverwork's renowned expertise in hovercraft design, build, and maintenance

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continues under the new Griffon Marine brand. This ensures the company remains a leader in amphibious transport while reinforcing its broader marine capabilities.

"Our transition to Griffon Marine reflects the strengths and expertise that have been at the heart of our company for decades," said **Mark Downer, Chief Executive Officer of Griffon Marine**. *"This new identity better represents the diverse and high-quality capabilities we offer in vessel design, construction, and support. While our name has changed, our commitment to delivering exceptional maritime solutions remains unwavering. We are now better positioned to meet the changing requirements of maritime customers and the challenging demands of future commercial and military marine activity."*

Griffon Marine continues to be a trusted partner in small, fast, and amphibious vessel operations worldwide with a legacy built on engineering excellence and a forward-thinking approach to marine technology.

GHL Wyvern gains Lloyds Approval

Griffon Hoverwork announced that its new class of Landing Craft Air Cushion (LCAC), the Wyvern, has been granted Approval in Principle (AiP) by Lloyd's Register at the end of January.

This certification encompasses critical aspects of the craft's design, including lifting systems, stability, piping systems, hull structure, and mechanical and electrical systems.

Mark Downer, Managing Director of Griffon Hoverwork, commented: *"We are delighted to receive this Approval in Principle from Lloyd's Register. This certification underscores the robustness and innovation inherent in the Wyvern's design, reaffirming our commitment to delivering cutting-edge solutions for military amphibious operations."*

An Approval in Principle (AiP) is an independent assessment that verifies a design concept meets the intent of relevant rules and standards at an early stage of development. AiP demonstrates that there are no conceptual issues related to the design concerning regulatory compliance.

The Wyvern class represents a significant advancement in amphibious military transport, offering a top speed of 50 knots and a payload capacity exceeding 52 tonnes. Designed for interoperability with both new and legacy amphibious ships, the Wyvern is engineered to operate in harsh and extreme conditions, ensuring reliability and performance in diverse operational scenarios.

Ben Wise, Lloyd's Register's Naval New Construction Manager added: *"LR was pleased to be involved with the early-stage appraisal of this innovative design, drawing on our ACV expertise from around the world. We have a long-standing history with Griffon, having worked with them extensively on past projects. The Wyvern design certainly meets GHL's usual high standards in design and we found nothing at this stage to give us doubt that the Wyvern would meet full Class compliance."*

The Wyvern was unveiled at the Defence and Security Equipment International (DSEI) event in London in September 2023, where it generated significant interest from international naval personnel and military strategists.

GHL re-enter Solent Business 250

Richard Dibden marked Griffon Hoverwork's re-entry onto the Solent 250 listing with a presentation in first week of February.

"Griffon is a truly global leading hovercraft manufacturer and marine solutions business and a company we should be very proud are

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headquartered in the Solent region! Congratulations to Mark Downer and the team"

The listings are maintained by The Business Magazine – Southeast.

Eureka Naval Craft SES

Eureka Naval Craft is excited to introduce the AIRCAT Bengal MC ("Module Carrier"), their state-of-the-art autonomous naval attack vessel! This impressive 36-meter multi-mission Surface Effect Ship (SES) is being developed through a partnership between Eureka and ESNA - Espeland and Skomedal Naval Architects, with revolutionary autonomy and AI technology from Greenroom Robotics.

Eureka and Greenroom are introducing the Bengal MC at Sea-Air-Space, taking place April 7-9, 2025 at Gaylord National Convention Center, National Harbour, Maryland. The location is just south of Washington DC city centre on the east bank of the Potomac River.

AIRCAT Bengal MC, is a 36 m LOA Optionally Manned/ Autonomous Naval Attack Vessel with a 1,000 nm range at 38 kts cruising (46-50 kts max speed – load depending). The Bengal MC employs autonomy and AI software supplied by Greenroom Robotics.

When manned, the vessel's crew is 5-7 (depending upon mission requirements).

The vessel is capable of being equipped with defence systems and armed for contested littoral operations with pervasive drone and anti-ship missile threats.

Optional primary armament includes three (3) 30mm remote weapon stations, each with individual radar coverage paired with a 360 degree 4D hemispheric radar and full spectrum optronics, as well as onboard ATGMs, drones, and numerous remote and manual machine guns.

The vessel has space on its aft deck capable of accommodating 40-tons of payload, i.e.- 2 x 40 ft or 4 x 20 ft ISO mission/ weapon payload containers (capable of carrying long-range cruise missiles, anti-ship missiles, swarming loitering munition drones, air defence, torpedoes, sea mines, and/or mine countermeasure systems).

Bo Jardine, CEO of Eureka has indicated that the vessel will be offered to the US Navy, US Marine Corps, and navies allied to the US, including AUKUS and NATO countries, as well as Singapore, Japan, South Korea, Vietnam, Thailand and the Philippines.

Greenroom Robotics CEO Jim Keane said the AIRCAT Bengal MC will have the most advanced autonomous navigation system in the world.

"This is a terrific ship and we're delighted to be working with Bo Jardine and the Eureka team on the software. The AIRCAT Bengal MC will benefit from the proven Greenroom Advanced Maritime Autonomy (GAMA) Software system Greenroom have spent years developing and had validated on a 57m decommissioned Armidale-class patrol boat, Sentinel, known as the Patrol Boat Autonomy Trial (PBAT)."

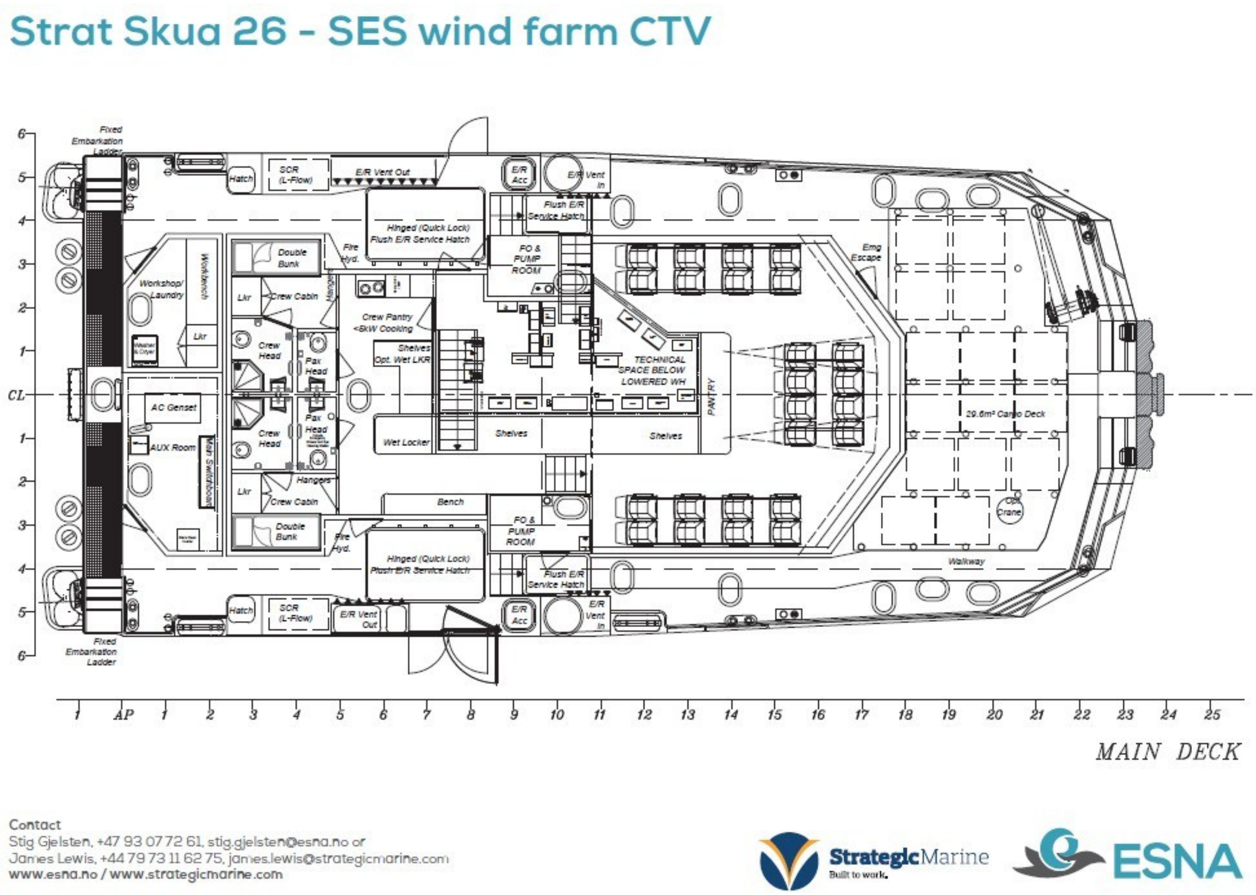
"Drawing on this expertise the AIRCAT Bengal MC will have AI-driven advanced situational awareness, and swarm-ready fleet enablement systems allowing naval or coastguard crews to operate with unparalleled precision, safety, and effectiveness."

ESNA News – Strat Skua SES CTV

Stig Kile Gjelsten, Head of Sales and Trygve Halvorsen Espeland, Co-founder from ESNA Naval Architects will attend the Wind Europe exhibition in Copenhagen from 8th to 10th April.

On display will be the Strat Skua 26, developed in cooperation with Strategic Marine, that offers very efficient offshore wind operations with service speed up to 40 knots, and with fuel consumption much lower than conventional catamaran CTVs.

The vessel has a length of 25.8 m and a beam of 11.1 m. She can carry 24 passengers and has an impressive maximum speed of 47 knots (35 knots in SS3) with a competitive low fuel consumption at the typical service speed of 30-40 knots.



The air cushion control system ensures a very comfortable ride as well as superb seakeeping and transfer capabilities.

The high speed of the vessel will increase working time significantly out in the Wind parks, and it will also be possible to use this type of CTV to service Wind parks currently not serviced by CTVs due to long transit or rough conditions.

ESNA present a full specification on their site, here, (pdf download) where details of the powering options are presented as well as a main deck layout as presented in the image below.

There are four different powering options including either MTU or Caterpillar twin main engines of around 1490kW, with twin FPT diesels or Volvo D6 diesel electric for lift and hotel power at around 2x250kW. A third option is a fully hybrid power system with shaft generators linked to the main engines, and a fourth option is for a quad installation of four smaller MAN diesels each of 882kW with an increased beam at the stern of 12.2m from 11m standard.

Based upon this initial data, the design has developed significantly from the CWind Pioneer built some years ago now. The powering options allow considerable flexibility to meet varying operator needs to fit in with service availability of spare parts for mechanical and electrical systems in different parts of the world.

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SILVERSTREAM NEWS

Finnlines' Superstar-class vessel *Finncanopus* celebrated its first anniversary on 16 February 2025. Finnlines' second Superstar-class hybrid freight-passenger vessel, *Finncanopus*, joined the sister vessel *Finnsirius* on the route between mainland Finland, Åland and Sweden on 16 February 2024. The two new vessels are an important part of the strategy to provide upgraded services and have significantly reduced the carbon footprint of the route.

"We are delighted by the warm welcome that Finnsirius and Finncanopus have received from both private travellers and professional drivers. With our new ships, we have entered the hybrid era, offering our customers more efficient and sustainable sea transport services," says Antonio Raimo, Line Manager at Finnlines.

The Superstar-class *Finncanopus* and *Finnsirius* are equipped with many energy-saving technologies. Thanks to high-powered battery units, the use of main engines can be reduced.

The air lubrication under the keel reduces resistance and saves fuel.

Onshore power connection enables zero emissions at berth. An automatic ship mooring system speeds up the mooring and unmooring of vessels and reduces emissions in port. Even though the vessel capacity has significantly increased, the absolute CO_2 emissions per nautical mile between Finland and Sweden is 22 per cent lower compared with the previous vessels on the route.

The entry of the two Superstars marked the completion of Finnlines' EUR 500-million Green Investment Programme, which also consisted of three freight vessels, all of which entered Finnlines services in 2022.

A full article can be found here.

Silverstream Aftercare Service

During an exciting week at Sea Asia - Anchoring the Global Maritime Marketplace and among many highlights, the Silverstream team enjoyed introducing our aftercare service offering- the Silverstream® Service.

The Silverstream® Service packages ensure customers get the most value possible from their Silverstream® System over its entire lifetime. Maintenance and optimisation should be effortless, which is why the bespoke aftercare solutions are specifically tailored to customers' individual needs. With their proprietary knowledge, reliability of service and quality of parts only the OEM can provide, Silverstream customers can be sure of the uptime and savings they need, today and far into the future.

Grimaldi Achievements

Silverstream is proud to have partnered with Grimaldi Group since 2018. With the technology now installed across multiple vessels in their fleet—and more on order—Grimaldi is seeing impressive results in operational performance. But don't just take our word for it—hear directly from our customers about the impact of the Silverstream® System.

Dario Bocchetti, Head of Energy Saving, R&D and Ship Design, Grimaldi Group recently shared his thoughts on the long-term partnership.

"Our partnership with Silverstream Technologies began in 2018 with the installation of the Silverstream® System on one of our state-of-the-art GG5G class vessels. Since then, 16 vessels have been equipped, with 10 more in progress and new projects under feasibility and preliminary energy-saving assessment.

This collaboration reflects our shared commitment to reducing the environmental impact of shipping, and we've witnessed firsthand the tangible improvements in fuel efficiency and emissions reduction – for example, achieving 5-6% net savings for our GG5G Ro-Ro fleet.

Silverstream's innovative technology is a piece more of the puzzle in helping us meet our sustainability goals, ensuring that we continue to lead the way in cleaner, more efficient maritime operations."

The partnership continues to strengthen, and Silverstream are excited about expanding the implementation of their technology across more vessels in the Grimaldi fleet in the coming years.

HOVERTRAVEL NEWS

Hovertravel are enhancing their HoverBlue Discount Scheme, so you can now get discounted fares across Day Return, Period Return, and Single tickets for Adults, Children, Seniors, and Students.

Above, the award shown by members of the team at the Ryde terminal apron. Courtesy Hovertravel

In February Hovertravel were able to announce that it has again been awarded Leader's status in the UK Government's Inclusive Transport Leaders Scheme! This is the highest possible accreditation, reaffirming their commitment to providing accessible and inclusive travel for all.

Their HoverCare initiative ensures that passengers with reduced mobility or additional needs receive dedicated assistance, making every journey smooth and comfortable.

Thanks were voiced to their amazing team and customers for helping to achieve this recognition!

Timetable update

Now that Summertime is here it is good to check out the increased frequency timetable that Hovertravel will operate from 7th April to 2nd November. Details are here.

AIRLIFT NEWS

Watch Phil the proud owner of the new Airlift electric hybrid Revolution hovercraft fly a hovercraft for the 1st time! Click on the image above to see the YouTube video (6:29).

Due to the Revolution's easy to operate independent electric lift system, Phil and friend Paul were able to operate this craft with absolute ease on both land and water with minimal training. The Worlds 1st recreational electric-hybrid the Revolution Hovercraft is a game-changer! Go here for more details of the craft.

Post Cyclone Alfred support

Airlift helped out their community with their amphibious hovercraft access for evacuation, recovery, damage assessment and supplies. CH9 also interviewed them about the experience. They

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have posted the CH9 clip on their Facebook pages here.

Recruitment

Griffon Marine

Griffon Marine take great pride in supporting early professional careers. During February they had two exciting apprenticeship opportunities for a Mechanical Engineer and a Fabricator.

They visited SETA's Apprenticeship Centre 5-6.30 Tuesday 11th February and at Southampton College on Thursday 13th February 2025, for Meet Your Match events. Applications will opened on Monday 3rd March.

The company have loaded a video on YouTube where Becky, who apprenticed in 2010 gives her thoughts and encouragement, here!

The company have also been visiting schools to get their message out. Presently there is quite some activity and future opportunities coming up so apprentices have a future to look forward to.

UMOE

UMOE are seeking a **Head of Business Development**. The position is advertised on UMOE site here.

The position will play a key role in shaping the company's growth and strengthening our reputation through focused action and execution.

The right candidate will be responsible for implementing strategic sales initiatives, building strong customer relationships and driving revenue growth in the military markets for vessels, autonomous products and composite structures. You will be part of a team delivering innovative solutions to some of the world's leading military organizations.

På Norsk:

Stillingen vil spille en sentral rolle i å forme selskapets vekst og styrke vårt omdømme gjennom målrettet handling og gjennomføring.

Den rette kandidaten vil få ansvar for å implementere strategiske salgsinitiativer, bygge sterke kundeforhold og drive inntektsvekst i markedene for fartøy, autonome produkter og komposittstrukturer – alt til militært bruk. Du vil inngå i et team som leverer innovative løsninger til noen av verdens ledende militære organisasjoner.

During February UMOE have also been looking for an engineer with electrical, automation and mechatronic experience. The position can also be found here.

Ivanoff Hovercraft Update

It was a big day for both Ivanoff Hovercraft and BARB on, March 22nd, with the official launch of 3 new IH-6 Open Hovercraft at BARB Search and Rescue in Burnham-on-Sea.

Magnus Ivanoff commented that it was great with returning customers as that day it was exactly 22 years (on the day) since their last delivery to the Burnham Hovercraft rescue station.

Below a view of one of the new craft in operation, courtesy BARB.

IH3 craft active in flood rescue

It's one of the Breton towns hardest hit by flooding. In the last week of January in Guipry-Messac, the water was so high that many residents could no longer return home. At the lock, the water reached 3.70 m at 2:30 p.m., setting a new historic record. And the ordeal wasn't over yet, as further rainfall was expected in the coming hours, which could bring another 20 cm of water.

A video of the rescue activities is here.

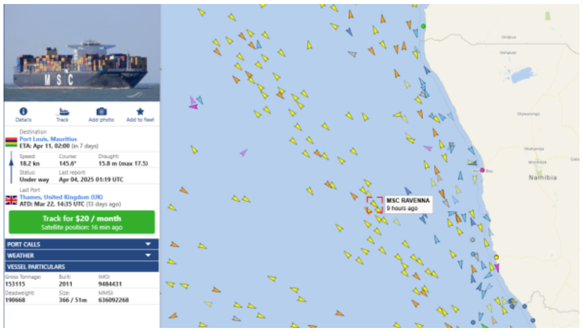
ANOTHER UPDATE ON OWEN'S REVOLUTION

Nightly cruise to test the new LED headlight on QR004 (Revtech Revolution Electric Hybrid) on 28th March on Lake Illawarra south of Sydney. So Owen has a new headlight giving possibilities for night rescue operations perhaps.

After recent visits from Keith Oakley and Paul Moody it looks like Owen has been convinced to work on electric thrust to go full electric on his next project.

Thanks, as usual to Owen for the information via his Facebook page and also Paul Moody.

HOVERAID UPDATE



The new River Rover is now on its way to Madagascar abourd the MSC Container ship MSC Ravenna shown below. The voyage status can be tracked here, as shown above. Position on April 4th was offshore Namibia travelling towards Cape Town. The vessel overall voyage takes it to Mauritius stopping at Madagascar on its way.

The craft was loaded into a container on 4th March as seen below.

BHC NEWS

Shows 2025

BHC have announced that they will attend the following shows in 2025:

April: The Trailer Boat Show (South) - Basingstoke, 26th & 27th

May: BHP Show - Detling, 4th

July: Thames Traditional Boat Show (Henley Boat Show) - Henley, 18th - 20th

September: The Trailer Boat Show (North) - Crewe, 6th & 7th

On June 28/29th they will host a cruise weekend based at Sandwich, Kent. Go here for the details.

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Hovercraft Museum News

The Museum is open on both Saturdays and Sundays from 10am to 3pm at present.

Details and updates can be found on their internet site THM, or on their Facebook page. A view of their souvenir shop and café can be seen here.

Key information for visitors include their seaside location at Lee on Solent right at the seafront with the NHTU slipway opposite the entrance. They have over 50 craft on show, a gift shop/café on site, are family friendly.

They have full wheelchair access to hangars & gift shop/café and put on activities for their younger visitors. Dogs are also welcome (with their owners . . .!)

For those not able to visit the museum physically, a flavour of their exhibits can be found at an interesting site published by Rod Bearden here. He has catalogued all the craft exhibited with the best details he could gather. Thanks go to Rod for the extensive effort to achieve this!

CC7 to Sandown Museum

The CC7 XX102 was built on the Isle of Wight in 1969 as part of an ongoing program to develop hovercraft technology. The craft was in service with the 200 Hovercraft Squadron of the Royal Corps of Transport from the late 1960's and was in use around the world before being transferred to the Royal Navy Hovercraft Trials Unit in 1972, remaining in military service until the early 1980's.

The CC7 will be restored by the Wight Aviation Museum team and will displayed for the public to enjoy at the Wight Aviation Museum, Sandown, Isle of Wight. More details can be found here.

Naviplane N102-C-3 Restoration

The last Naviplane N102-C-3 « Bételgeuse » was restored and is now exhibited in the museum at Château de Savigny les Beaune! Full details of the restoration are given in an extensive site and article posted here. This site also documents much about the N300 and N500 craft that may be of interest to ACV historians.

A thankyou to Air de Glisse for this information; they were deeply involved in the rescue and restoration of the craft.

Clubs and Associations Update

THEHOVERCRAFTCLUB OF GREAT BRITAIN

HCGB AGM 8th March 2025

Friday 7th March turned out to be a bit of a rush getting to the hotel in Leamington Spa for your reporter, THS Techsec. Since I live in Stavanger, and SAS have since January cancelled their direct flights to London, I took the KLM option via Amsterdam. Not too complex, just heavy traffic at Schiphol and the Heathrow plane was delayed an hour.

That wouldn't matter too much except that a promise to meet some of the 'HCGB Elders' for dinner at 19:30 became a little tight. After picking up a car, the M40 seemed to be just nose to tail traffic all the way.

I was advised afterwards that M40 is now a commuter pipeline and Friday evenings of course are very busy. Ah well.

The hotel was reached at 19:30 and so after checking in, I was able to catch up with the others and relieve the concerns of organiser Graham Nutt. A very pleasant event, and good start to the weekend.

Saturday is the main business day for the HCGB as an organisation, starting at 12:30 with a Forum Session where the HCGB activities and achievements of 2024 and plans for 2025 were presented.

This was followed by a presentation by Graham Nutt on the status of the electric hovercraft project and after a break the formal AGM. Two of the club National Committees then had their annual meetings before a break and the evening dinner event with 2024 season trophy awards and fun and games to finish.

Forum Session

Council Review

Key achievements in 2024 were noted as getting events dates fixed early in the year and branches finding ways to advertise them to attract new interest.

The introduction of the 'arrive and drive' offering at race meetings was successful, resulting in two out of the three clients also joining the HCGB afterwards. The arrangement is already planned and largely booked for 2025 (see below for more).

Attention has been paid last year to harmonising the regulations for racing between HCGB and EHF/WHF with the aim for additional support for the World Championships in 2026 that will be in the UK this time.

The council has during 2024 researched and procured a tagging and transponder system so that each craft in a race will be tracked, and data can be presented on a screen for visitors. All sorts of statistics will eventually be possible, while initially speeds and relative positions will be available dynamically.

This system is in use in motor and cycling sports already, so the software is available to present helpful data.

For HCGB, Council decided to move forward with the system from 2025 season, so race drivers will be required to purchase a transponder tag for attachment to the craft bow, either for the meeting, or the season. This year will be somewhat experimental, so the by 2026 it will be debugged and refined for the worlds.

The Marketing report suggested that club visibility in Facebook and YouTube accounts, including Racing Reels was attracting interest and should be a serious channel for HCGB advertising to the public this year.

The Arrive and drive programme, though limited in possible numbers at an individual event (to fit between racing sessions) had a very positive response and outcomes. It was noted that coordination with the various hovercraft experience sites in the UK could further improve results for HCGB membership (see THS Light Craft Directory for more on experience sites – it should be out by May 2025).

During 2025 HCGB will also be represented at a number of external events such as the UCL event at Olympic Park on 25th June, with the aim of showcasing hovercraft as a special experience / sport.

Competition committee gave an overview of the events now planned for 2025, with the flyer (see

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below image) There is one new venue in 2025, and two events combined with the EHF season.

The HCGB season is as in the image below:

The European Hovercraft Federation Racing calendar comprises three events this year:

21-22 June 2025: Whittlebury HCGB EHF

23-24 Aug 2025: Port St Pere, France EHF

6-7 Sept 2025: Saalburg, Germany EHF

Live racing data and presentation

A full technical presentation on the lap timing and digital system was given, and queries answered from the floor. Later in March the slide presentation was emailed to HCGB members so they could review the rather advanced system at their leisure.

Cruising Committee Report

Committee Chair Mark Bradley-Upton gave a summary of events held in 2024 and the plans for 2025. These informal but carefully organised events are attracting more interest both from participants and visitors wanting to see craft in action. Main locations in 2024 were on Norfolk and NW Wales coasts, and the Kent Coast.

The planned events for 2025 are as follows:

March 22nd/23rd Black Rock Sands -Wales

May 24th/25th Norfolk (Heacham to Kings Lynn with exact route to be confirmed)

June 1st Demo at Staffordshire Motor show

June 28/29th BHC cruise on Kent coast (org BHC)

July 19th/20th Festival of Transport event that will be held at Barrow in Furness

August 2nd/3rd Liverpool sailing club with a training period on Saturday morning

August 2nd to 9th Participation in Rhône Raid 2025 in France run by the Club Rhône-Alpes Motonautique.

August 23rd/25th Norfolk Cruise with site and route to be confirmed

September 21st/23rd Black Rock Sands, Wales

October 18th/19th Norfolk potential additional cruise weekend

At the time of the AGM a number of other locations were under consideration, including Pendine Sands near Carmarthen, South Wales; Llandudno, North Wales; Barmouth, West Wales and The Solent, launching from The Hovercraft Museum at Lee on Solent.

HCGB has had some very enjoyable events in the ancient past around Barmouth Estuary cruising and at Pendine Sands for speed trials. Well recommended!

Discussion on World Championship 2026

Preliminary proposals were outlined for the World Championship in 2026 that will be hosted by HCGB. It was recognised that for success it will require substantial planning and volunteer manpower. There was enthusiasm expressed to support the event, so the signs are good.

A member that runs a craft brewery made a proposal for a celebration brew to be prepared. The idea was that sales of the special brew might generate funds to support the event. While there has to be some separation between marketing such a product and the performance of the racing championship, there was a positive response to the approach to market goods that could be linked to the event as a means of advertising and support. Further work is needed around that theme.

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Technical Presentation

Graham Nutt gave a presentation on the current state of electrical craft development. Graham is currently assembling components for an electrical cruiser building on the trailblazing by Keith Oakley in the last few years.

Keith was in Australia while the AGM was on. He was visiting Owen Ellis who has developed and commercialised his electric lift 'Revolution' craft and so Graham presented Keith's slides showing development of the ESC and its programming to date.

On the components, Graham has now sourced second hand battery modules from JLR that offer reasonable pricing. A source for the centrifugal lift fan and motor used by both Keith and Owen is now in place.

The electrical switch control (ESC) in use during the 2024 season has shown that the craft has already enough thrust to be a reliable and viable 2- 3-seater. The target however is to have more thrust in hand for emergencies.

Analysis of the data produced by the craft's onboard computers has identified a design issue with the ESC which is limiting the maximum power. As a result, the UK manufacturer is working on a hardware modification which is hoped will be available for testing in the 2025 season.

Readers are recommended to go here to see the basic technical details so far. Hopefully more will be published on the Thrust system matching Battery/ESC/Fan in the near future!

AGM

The formal AGM has become an efficient and relatively short formal meeting over the years. The main business is the Chairmans Report, Approval of the accounts for the year, and elections to the various committees. While there is a steady turnover there remain sufficient personnel volunteering on the committees to support the main interests of the club, that are technical oversight and control via the Scrutineering Committee, racing events via the Competitions Committee, and cruising via the Cruising Committee.

Club membership was steady during 2024, and council were hopeful that with the expanded events and experience programme that new membership would be attracted in 2025.

The accounts showed that income and expenditure was in balance and would be maintained with a small adjustment to racing competition fees in 2025. The investment in the new race digital system can be covered, though amortisation will require several years. That is not unreasonable for a system that will have a useful life of many years ahead with potential for upgrading via new software.

Hovercraft Cruising Club

Scottish Hover-in 2025

The **19th** year of the famous Scottish Hover-in at the premier hovercrafting location in the UK (Loch Fyne) will be held May 24th to June 6th 2025. Hovercraft operators including both HCC members and visitors are welcome for any part or all of the event dates.

The event is mainly based at the Argyll Caravan Park near Inveraray which takes touring campers and caravans (no tents) and has static caravans for hire). Plenty of alternative accommodation is available in the local area (probably wise to book something if you are attending on the Bank Holiday weekend as it can be busy).

Launching/parking is available at the caravan park. If you have any problems finding anything, please contact John Robertson and he will try to help.

For newbies, HCC normally use VHF channel 72 for inter-craft comms and WhatsApp for daily organisation. To make contact with John Robertson, the organiser, please send a message here with your mobile number and he will make contact and add you to the Loch Fyne WhatsApp group. It would also be useful if you can indicate in the event comment what dates you plan to attend - no commitment required!

There is some useful info HERE on the area with some basic safety info (a bit dated but hopefully useful for "newbies" to this event .- do check it out, as it is quite informative!).

Entry closes **23rd May 2025**. The maximum number of places available is 50.

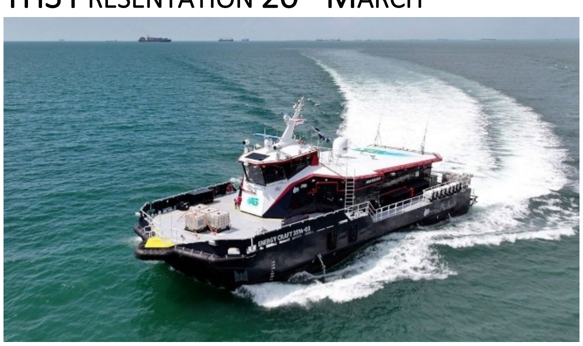
Society News

THS Meetings

The following THS meetings are currently planned, see table below Details of further meetings will be publicised in the events blog once finalised, and in the next NewsNote. At present all meetings are held on Zoom apart from the annual dinner event in Portsmouth.

2025	Subject
April 15th 14:00 UKt	MHO Presentation
April 24th 19:30 UKt	Committee Meeting
May 15th 19:30 UKt	Committee Meeting
October 18th 15:00 UKt	Afternoon Conference and Dinner, Portsmouth

THS Presentation 20th March



On 20th March Eduard Ercegović, Technical Director of Aircat Vessels gave us a comprehensive presentation about the development of Aircat 35 Crewliner Crew Transfer SES, its build programme in partnership with Strategic Marine in Singapore, and the deployment of the first three craft to Angola for service out to Floating Production, Storage and Offloading Offshore facilities. This project is a major step forward both for offshore O&G projects and SES vessels.

The presentation is now loaded to our YouTube channel here.

Eduard took us through the development programme, adjusting the design to requirements of the oil company client, and the build process at Strategic Marine in Singapore. Finally, he showed us a walkthrough of the vessel, and some video of one of the craft in service delivering personnel offshore to a spread moored production and offloading ship (FPSO). He also took the time to answer several queries from the attendees.

There is a lot to learn from this presentation, not least that reaching a major achievement like this requires patience, practical knowledge about offshore O&G logistical and safety demands as well as realistic knowledge about Air Cushion Technology.

Sincere thanks are due to Eduard, and to Jerome Arnold, CEO of Aircat Vessels who was unable to be present due to activity presently in Angola.

Strategic Marine are already constructing a follow up vessel for a Malaysian client, so it is hoped this is the beginning of a 'breakthrough' for SES vessel applications!

Reference Materials

This month we present a series of six papers that are available via open source covering research on Surface Effect Ship cushion system stability and dynamics.

Robust Lateral Control of a Surface Effect Ship using H_∞ Mixed Sensitivity Synthesis

By Vegard Vamrak, Nils Haktor Bua, Vahid Hassani, Øyvind Fidje Auestad

International Federation of Automatic Control IFAC-PapersOnLine 49-23 (2016) 540–545 available via Science Direct.

Robust control technique was practiced to design a lateral controller that operates in parallel to the vertical controller of a surface effect vessel. Model tests were performed at a towing tank with a hydraulic wavemaker on a 1:8 scaled model.

The test results were used to find a suitable thrust mapping for the sway forces obtained from vent valve openings. The thrust mapping was further used in the thrust allocation, scaled and implemented into full scale simulations.

Simulation results showed good performance when subjected to wind and wave forces. The robust control design shows satisfying behaviour when it comes to damping of sway velocity for an SES, with the control force obtained from asymmetrical vent valve openings on port and starboard side.

The work presented here is far from being complete and is in the initial stage. However, initial model tests, and simulation results, show promising results for sway control of SES by asymmetrical vent valve openings in the hull sides.

This paper only considered the sway motion uncoupled from other degrees of freedom. Coupling between relevant degrees of freedom should be considered in the phase of controller design. Further model scale tests and full-scale tests are planned for near future.

Ride Control of Surface Effect Ships using distributed Control

By AJ. Sørensen and O. Egeland

Modelling, Identification and Control Journal

MIC Journal, 1994, Vol 15, No 2, 65-79

A ride control system for active damping of heave and pitch accelerations of Surface Effect Ships (SES) is presented. It is shown that distributed effects due to a spatially varying pressure in the air cushion result in significant vertical vibrations in low and moderate sea states.

To achieve a high-quality human comfort and crew workability it is necessary to damp these vibrations using a control system which accounts for distributed effects due to spatial pressure variations in the air cushion.

A mathematical model of the process is presented, and co-located sensor and actuator pairs are used. The process stability is ensured using a controller with appropriate passivity properties. Sensor and actuator location is also discussed.

Performance of the ride control system is shown by power spectra of the vertical accelerations obtained from full scale experiments with a 35 m SES.

Design and Verification of a sway-yaw control system for Surface Effect Ships using vent valves

By Håkon Teigland, Vahid Hassani, Øyvind Auestad

SINTEF Open Publications

IFAC PapersOnLine 52-21 (2019) 39–44

For an offshore worker in the oil and gas industry, the helicopter transport is the activity associated with the highest risk. An alternative to helicopter crew transfers is to use Surface Effect Ships (SES) to transport the crew.

A SES is a catamaran vessel carried in part by a pressurized air cushion. The pressure is maintained by fans and controlled using vent valves. The benefit of these vessels are the high speed to fuel consumption ratio due to decreased wave resistance.

During crew transfer from the SES to the offshore installation, the position of the SES needs to be maintained within a safety region using a Dynamic Positioning (DP) system.

By mounting the vent valves on the hull sides, the thrust force coming from the air exiting the vent valves can be used to act as an assistant to the DP system. This would reduce required installation power and operational cost of the DP system.

Furthermore, combining the thrust from the vent valves with DP thrusters would give a DP system with a high degree of redundancy since thrust force may be generated from two different physical principles.

This paper presents a sway-yaw control system for a SES to demonstrate an assisted system that is actuated purely by vent valve thrust from the pressurized cushion. The developed control system is verified using numerical simulations carried out in a high-fidelity simulator

Vent Valve Thrust force for Surface Effect Ships

By Håkon Teigland, Vahid Hassani, Øyvind Auestad

SINTEF Open Publications

IFAC PapersOnLine 52-21 (2019) 51–5

The Surface Effect Ship (SES) holds promise as a viable and appealing alternative for transferring crew to offshore wind farms and oil platforms due to its superior seakeeping capability, high comfort and speed.

An SES is a marine craft with catamaran hull, with a flexible stern and bow rubber seal system. The air cushion is defined as the enclosed volume between the hull, seals and water plane.

Centrifugal lift fans blow air into the air cushion, pressurizing the air cushion that lifts up to 90 % of the vessel weight.

Modern SES are also equipped with adjustable vent valves allowing outflow air from the pressurized cushion. By mounting the vent valves on the hull sides, the thrust force coming from the air exiting the vent valves can be seen as an extra actuator on the ship.

Using Vent valves to control the ship's position requires an accurate thrust force model. This paper develops two thrust force models and investigates their performance.

Both models are compared to computational Fluid Dynamic (CFD) analysis and experimental tests.

Results show that both models may be used to estimate the maximum thrust, However, one holds higher promise to be used for control design.

Surface Effect Ship with Four Air Cushions Part I: Dynamic Modelling and Simulation

By Ola. M Haukeland, Vahid Hassani, Øyvind Auestad

Oslo Met Publications

IFAC PapersOnLine 52-21 (2019) 128–133

This paper deals with dynamic modelling and numerical simulations of a Surface Effect Ship (SES) with split cushion.

Traditionally, an SES is a catamaran with front and aft seals equipped with lift fans that could fill an air cushion with pressurized air to lift up to 90 % of the weight of the vehicle. A new SES concept is designed by UMOE Mandal AS that consists of four air chambers, each one equipped with variable vent valves, through which cushion pressures can be controlled by adjusting the air out-flow from the cushion.

The new design makes it possible to actively regulate the motion of the SES in all degrees of freedom but surge. In this paper, we develop a dynamic model of the four cushion SES.

Furthermore, we present a high-fidelity numerical simulator that can effectively simulate the dynamics of the vessel.

A companion paper (Haukeland, Hassani, and Auestad 2019) studies the performance of the control system through numerical simulation using the presented high-fidelity model of SES subject to waves.

Surface Effect Ship with Four Air Cushions Part II: Roll and Pitch Damping

By Ola. M Haukeland, Vahid Hassani, Øyvind Auestad

NTNU Open Publications

IFAC PapersOnLine 52-21 (2019) 134–139

This paper introduce damping of roll and pitch motion on a Surface Effect Ship (SES) in low vessel speeds. The SES consists of two side-hulls, a reinforced rubber bow and stern seal skirt system and four air cushions. The air cushions can lift up to 90 % of the total vessel mass depending on the output of the controller. The pressure in the air cushions are controlled using feedback from gyros which results in heavily reduced motions in roll and pitch. The effectiveness of the proposed system is examined through numerical simulation in a high-fidelity simulator developed in a companion article (please see previous reference for Part I).

From the Internet

Articles

Navy Lookout articles - amphibious vessels

The online journal Navy Lookout has recently published several interesting articles on the current and potential role for multi-role support

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ships and littoral strike craft associated with them in the UK Royal Navy.

Most recently it has discussed the consequence of decommissioning the RN's two LPD ships HMS *Alliance* and HMS *Bulwark*, a decision made at the end of November 2024. This has apparently been forced by a lack of available personnel as well as current very tight budgets.

This situation is a complex one, so it is best to read the articles in Navy Lookout to understand fully.

The RN is currently planning for construction of Multi Role Support Ships to fit a revised Marine Commando tasking philosophy, but these ships will not be available for some years by which time technology may have taken yet another leap forward, including 'drones' that are based on air cushion technology!

Textron SECAT

Along with the development and expansion of their proven products, Textron Systems has received the Approval in Principle (AIP) for Light Warships, Patrol, and High-Speed Naval Vessels from the America Bureau of Shipping (ABS) for their SECAT™ (Surface Effect Cargo Amphibious Transport) craft.

This designation demonstrates the SECAT design is feasible and complies with ABS standards. The SECAT is an advanced logistics connector with unrivalled cargo transportation capabilities, with speeds up to 50 knots and a payload capacity of up to 600 tons.

The short article from Textron Marine issued in April 2024 can be seen here. A further short piece is here. It reminds us that Textron is not only working on the SSC programme.

Videos

We hope the material below is useful and enjoyable. Click on images and links to go to the recordings.

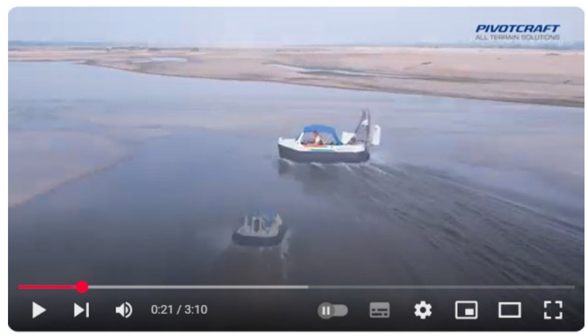
Unmanned SSC

A visualisation of an unmanned SSC has been loaded by Textron Kingfish, giving an idea of what can be achieved for almost instant delivery of materiel packages (or vehicles?) at shore by a sweeping pass.

Click on the image below to view the video.

Pivotcraft in India

Eurotech Pivot systems have taken delivery of an Amphibious Marine Vanguard for evaluation before marketing it and the larger 10 seat Explorer craft in India as the PC4 and PC7. The video below shows trials carried out during March.



Eurotech comment that the Pivotcraft PC-4 has marked a crucial milestone. Rigorous trials recently undertaken on the Cauvery River have been completed with resounding success, showcasing its efficient and effective operational capabilities.

Mamilosa Icebreaking video from CCG

The CCG has released another interesting video on their LinkedIn page showing *Mamilosa* ice breaking operations for the springtime clean up in the St Lawrence River. It can be seen here.

Hovercraft Joy Riding on Lake Baikal

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This is very much a wintertime activity. Take a look here. There are several of the Russian built craft in operation giving tourists a ride.

The video has been dubbed from German by auto translation. It was posted in February.

Hovercraft Fly tipped

This is NOT nice. A report from the BBC in UK published 25th March. Click on the image to view.

Image courtesy BBC and Liz Parks, with thanks

Observations

One of the most interesting thoughts from the automated SSC piece above is that the current SSCs could easily by set up to do almost the same thing in logistical terms.

My goodness that would be real speedy ACV operations. No landing and then getting back over hump – just a high-speed sweep.

Modify the pass to offload two lanes in parallel and there may be no need for multiple passes either. The commandos could also be delivered already in their vehicles . . . OK just dreams right now, but ACV technology surely does have much unused potential, so long at the military are prepared to be adventurous perhaps.

I hope you have enjoyed this issue!

THS Techsec

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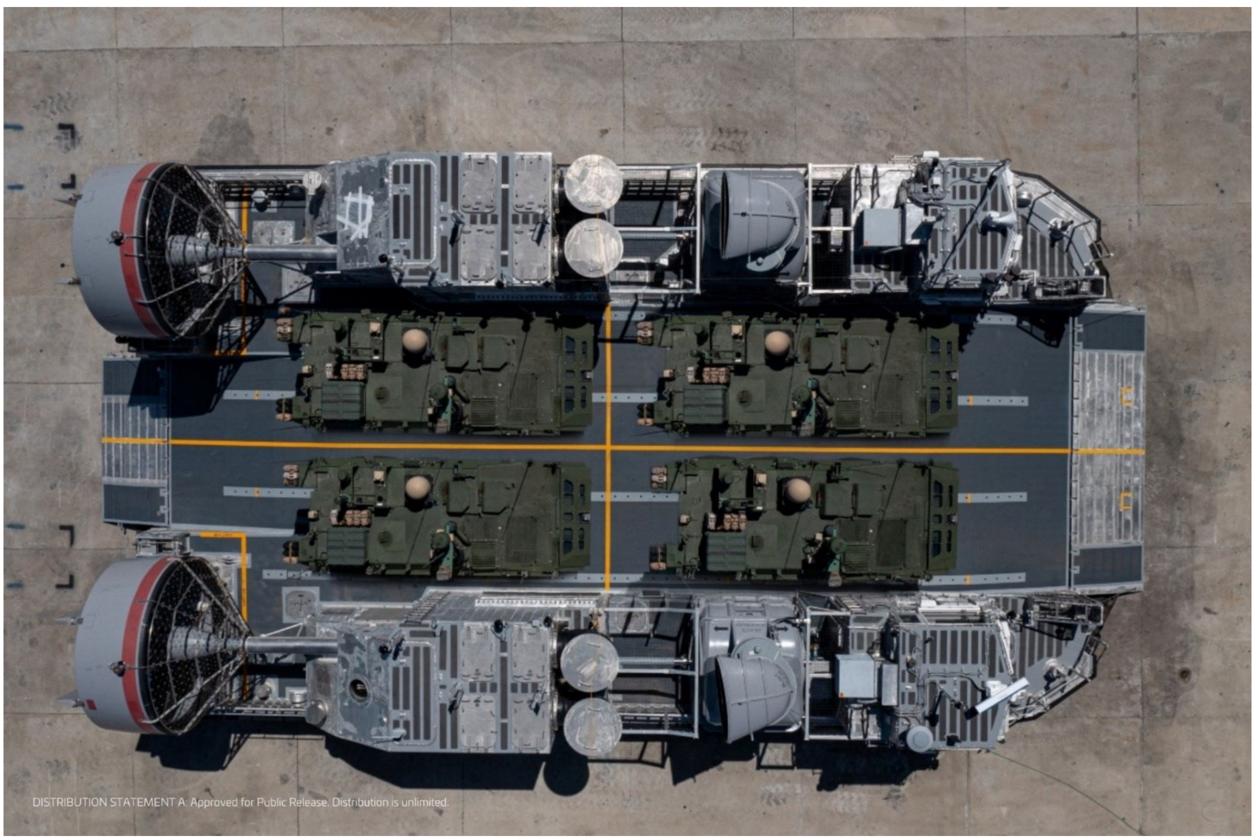

Above, A rather different image this issue, a view directly down on one of the SSC craft, with a test payload of four heavy military tactical vehicles. The forward and aft ramps are lowered as the craft is at rest. The four turbine exhausts have weather caps in place. Image courtesy US Navy.

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