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The Hovercraft Society
Formed in 1971

News Notes

NO 5-23 SEPTEMBER 2023

Artist's impression of Griffon Hoverwork Wyvern Air Cushion Landing craft.
Many thanks to Griffon Hoverwork.

INTRODUCTION

August and September have continued to be busy months with hovercraft trials, deliveries and major announcements.

The second GH12000, for Japan was turned around and loaded for delivery in very quick time. Meanwhile on 12th September Griffon Hoverwork announced their new air cushion landing craft – the Wyvern. This craft is designed for payload around 50 tonnes rather than the US Navy SSC at 74 tonnes. More on this below.

UMOE Mandal have delivered the first of their new Wavecraft Commander 27 for operation to wind farms operated by Ørsted in the UK North Sea. It has been reported that this craft has exceeded 50 knots in calm conditions and at that speed uses just 17 litres of fuel per nautical mile, quite an achievement. Normal service speed will be lower at around 42 knots. This allows efficient access to the wind farms being built by Ørsted that are increasingly distant from shore.

The US Navy have delivered SSC craft 105 to 107 to the east coast Unit Four base so these craft are now in active service and Textron series production continues. Meanwhile the South Korea Navy also announced delivery of two of their new LCAC craft into service. Details of both these events are below.

When researching for these News Notes your Technical Secretary regularly finds new items placed on YouTube. It is good the people do record events and upload them. This month a couple of items are presented, including videos

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by an enthusiast in Alberta who earlier built a Universal Hovercraft design, and found a GRP hull which he has completed as a project. The strangest item (to Techsec anyway) was his turning of a wooden vee belt drive pulley!

NEWS ITEMS

GRIFFON HOVERWORK

Handover of *Baien* in Japan

GH 12000 *Baien* was formally handed over to the operator Oita Prefecture in Japan. at a ceremony in Oita on September 9th after completing acceptance trials.

Above, Griffon Hoverwork handover team together with operator personnel at the handover ceremony on 9th September.

Above, Another view of Baien decked with bunting at its handover ceremony. Photos courtesy Griffon Hoverwork and Ben Avery.

Baien is a 12000TD fully amphibious hover-ferry, able to carry 80 passengers plus luggage at speeds up to 45kts. This craft is the first of 3 to be delivered and will enter passenger service in 2024.

Second Craft on its way to Japan

***Banri**, in position as deck cargo ready to start its delivery voyage to Japan*

As quickly as she has been launched, *Banri*, the second hovercraft for Oita, Japan has been trialled and was loaded ready to be shipped on 12th September.

The Griffon Hoverwork handover team will see her again in 5 weeks' time for the in-country acceptance trials alongside sister ship *Baien*, which was delivered earlier in September. The 3rd and final craft, *Tanso*, is due out later this year.

Announcement of Wyvern LCAC

On Tuesday 12th September Griffon Hoverwork announced the name and details of its new class of Landing Craft Air Cushion at the Excel Centre London as part of its presentation during the Defence and Security Equipment International (DSEI) show. The craft type has been christened the Wyvern class.

Aimed at efficient and flexible ship to shore transfer of equipment and materiel, the Wyvern class delivers a rapid, amphibious transport

solution for the world's military forces looking to deploy resources in response to conflict scenarios, natural disasters, or humanitarian crises.

Mark Downer, Engineering Director at Griffon Hoverwork, said: "We are delighted to reveal the Wyvern today to the distinguished audience of international naval personnel, high level governmental officials and military strategists who attend the Defence and Security Equipment International event at London's Excel centre.

Griffon is the world leader in hovercraft design and innovation, with six decades of experience in naval architecture and design, and our objective was to create a LCAC which delivers outstanding performance whilst being easy to maintain for optimum operational readiness."

Naval News have prepared an interesting report from DSEI on YouTube, with an interview of representative Patrick Moughan, Design Engineer. It is understood from the interview that there is a requirement coming out from the Royal Marines/Navy in UK for ship to shore transfer that will be tendered in 2024.

The Naval News piece can be viewed here.

There are some interesting details of the design shown in the video.

The microsite Griffonwyvern.com has specific details on the design and company partners.

Griffon Hoverwork have partnered with DB Santasalo, Fincantieri NexTech, MT Propeller, Vericor, and Vulcan for the project.

DB Santasalo are gearbox suppliers, while Fincantieri NexTech are instrument and controls systems specialists, MT Propeller supply Propellers, Vericor supply TF40 and 50 series gas turbines, and Vulcan are driveline specialists.

It may be noted that Vericor already supply TF range gas turbines to the US Navy LCAC and SSC programmes, as well as to the equivalent programmes for South Korea and Japan LCAC fleets.

SOUTH KOREA NEW LCAC CRAFT

South Korea's Defense Acquisition Program Administration (DAPA) has announced that two new landing ships (LSF-II) have been delivered to the Republic of Korea (ROK) Navy. The landing craft, which will reinforce the amphibious capabilities of the ROK Navy and Marine Corps and will enter service this year.

The current and planned fleet is as follows:

LSF-I No. 1 (Solgae-621): delivered in 2005

LSF-I No. 2 (Solgae-622): delivered in 2006

LSF-I No. 3 (Solgae-623): delivered in 2007

LSF-II (First project) No. 1 and 2

(Solgae-631/632): delivered in 2007

LSF-II (Second Project) Nos. 3 to 4

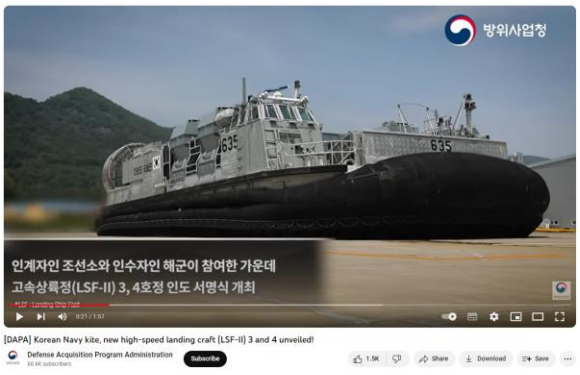
(Solgae-633/634): Delivery June 1, 2023

LSF-II (Second project) No. 5 to No. 8

Under construction

The craft have been built in South Korea by Hanjin Heavy Industries with close support from the U.S. Navy's Naval Surface Warfare Center Panama City Division (NSWC PCD).

Click on the image below to see a video of the new craft in operation.



A Full article from Navy News can be seen here.

These craft have another design for forward side thrusters with directable vanes rather than the US 90-degree rotating nozzles or Wyvern electric ducted rotatable fans.

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SILVERSTREAM NEWS

LNG Carrier Orders continue to build

Maritime clean technology leader Silverstream Technologies has announced multiple orders from the LNG carrier (LNGC) segment for its proven air lubrication technology, the Silverstream® System. This latest raft of orders takes the company's orderbook in the segment to 36 vessels, representing a combined value of approximately £50 million, highlighting air lubrication's viability for LNGCs of all sizes.

The orders – which come from major US and UK-based energy companies and Northern European shipowners – will see Silverstream's ALS installed on 10 LNGCs. Six are for retrofit projects taking place between 2023 and 2025, and four are for newbuilds which will be delivered between 2026 and 2027.

Four of the orders come from an unnamed owner on newbuild 180k cbm LNGCs being built at a leading Chinese shipyard. Another owner has ordered the system for retrofit on two 174k cbm LNGCs, which will take place at either Seatrium, the newly branded shipyard formed by the merger of Sembcorp Marine and Keppel Offshore & Marine, or Navantia, depending on the vessels' itinerary, during their five-year dry dockings.

Finally, another unnamed owner has signed for retrofit installations of the Silverstream® System on four 160k cbm LNGCs. The installations were contracted via Seatrium and will take place at the yard in the coming months, as the vessels reach their scheduled 10-year dry dockings.

Silverstream's technology is very well-suited to the LNG segment, as LNGCs have a large flat bottom that maximises ALS's friction-reducing capabilities. The system reduces average fuel consumption and emissions for LNGCs by 7-10% net, which typically equates to a 1MW net power saving.

The Silverstream® System can also help to reduce LNG boil-off and increase delivered cargo volume, or cut fuel consumption and associated emissions, depending on the operator's commercial and sustainability priorities. This is because ALS can be used either to enable vessels to travel at higher speeds for the same fuel consumption, or to cut fuel consumption and emissions without sacrificing speed.

It is for these reasons that air lubrication technologies, and particularly the Silverstream® System, have become a standard choice for newbuild LNGCs over the past few years, with retrofit options now rapidly increasing in popularity as well.

Noah Silberschmidt, Founder & CEO, Silverstream Technologies, said: *"We're extremely pleased at the uptake our system is attracting from the LNG segment, as well as from major energy operators who appreciate our technology's proven fuel and emissions saving record. The Silverstream® System is a perfect match for LNG vessels, as the natural characteristics of these ships, as well as their operational priorities, mean that air lubrication is one of the only solutions that will enable operators to achieve their efficiency goals here and now."*

Silverstream's total order book now comprises 175 vessels across all shipping segments. The installations will be supported by Silverstream's team of 120 marine engineers and technical experts. A team of 20 in Shanghai will also provide on-the-ground support for Asian installations of the technology.

A new bulk ship conversion

Klaveness Combination Carriers ("KCC") announced on 26th September that MV Ballard, the youngest vessel in the CABU fleet, has completed dry dock and subsequent sea trials with a wave of new energy efficiency measures in place. Among the measures include Silverstream Technologies' air lubrication system, the Silverstream® System, making MV Ballard the first KCC, and one of the first vessels within the dry bulk/tanker space, to adopt this

technology. The Klavenes announcement can be accessed here.

RINA President Joins Silverstream

Professor Catriona Savage, President of Royal Institution of Naval Architects has joined Silverstream as Chief Technology Officer from BMT.

Predictions for future business

3,500 installations of the Silverstream® System within the next 10 years. This is the achievable target outlined by CEO Noah Silberschmidt in a recent interview with Lloyd's List at Gastech 2023.

Noah highlighted that there are still many opportunities for improving vessel efficiency across a range of shipping segments, citing compliance with the International Maritime Organization's Carbon Intensity Indicator (CII) rating system as one important demand driver for Silverstream's air lubrication technology. The article also outlines Silverstream's strategy of direct engagement with shipyards In Asia, the Middle East and worldwide to propel the uptake of air lubrication via both retrofit and newbuild installations. "We are building the company and also hiring to be able to service even more retrofit installations," Noah stated.

Read the interview here: https://lnkd.in/eJcjYv74

UMOE FIRST NEW CRAFT DELIVERED

The first of three new Wave Commander 27 SES built by UMOE Mandal to serve Ørsted wind farms has completed trials and been delivered for service this summer. It has been reported that the craft exceeded 50 knots in calm conditions, and has fulfilled the low fuel consumption expectations. The service speed for the craft is 42 knots.

UMOE SES Rapid and Firmus already operate for Ørsted from Grimsby to their Wind Farms offshore UK.

Key statistics for the craft are as follows:

Length: 26.6 m
Beam: 10.4 m
Waterjets: 2 x MJP 650 CSU
Passengers: 24
Service speed: 42 knots
Reduced fuel consumption: 25% (compared to competing high-speed vessels)

It has been reported by Ofshore Wind magazine in May this year that Umoe Mandal has selected Shoreline Wind's O&M Design software for its high-speed crew transfer vessels (CTVs) working in offshore wind to deliver accurate outputs for maintenance strategies and costs for offshore wind developers and operators.

Umoe Mandal is using the software to simulate realistic and complex scenarios of multiple maintenance programmes utilising real-life data from both their CTV vessels and their clients' offshore wind farm projects to report and visualise the improvements from improved vessel transportation that ensure higher output for wind farm operators, Shoreline Wind says.

According to Inge Moy, Sales Manager at Umoe Mandal, this kind of system can quickly compare vessel types based on specific cost data to showcase its effect on long-term wind project revenue.

"*The most important element of a simulation is producing as accurate data outputs and cost estimations as possible. Ending with an annual cost overview of lost revenue due to turbine downtime with reliable PBA loss by adding maintenance elements for the day rate of vessels and fuel consumption – then you can start*

comparing with multiple campaigns for vessel utilization with different weather windows, asset types, number of technicians and so forth. The simulation report might show that transportation costs are a bit higher, but also that the total outputs for annual revenue are better, especially for O&M teams operating on larger modern wind farm projects", Inge Moy said.

Umoe Mandal's focus is currently on offshore wind projects in the EMEA region due to higher complexity in markets such as the US with Jones Act legislation. However, the company has an improved framework for planning development of its vessels on a global scale with the new software tool, according to Shoreline.

Umoe Mandal's Inge Moy said: "*Based on the analytics, we see a massive demand for our CTV vessels. Umoe Mandal wants to be the main supplier of zero-emission vessels in the offshore wind market. To support that, Shoreline's O&M solution can calculate the probability of our vessels going into a specific wind project. We can quickly simulate the outputs that our clients are looking for, which makes it much easier for us to talk about energy output, revenue and lifecycle costs. We haven't met any energy companies that do not use Shoreline's software. Therefore, we also work together with them to compare results and do different cases together".*

The offshore Wind article can be accessed here.

SSC Deliveries

The Ship to Shore Connector (SSC), Landing Craft, Air Cushion (LCAC) craft 105-107 received a lift of opportunity (LOO) aboard USS Gunston Hall (LSD 44), on July 14.

LCACs 105-107 have been at Naval Surface Warfare Center Panama City Division for post-delivery test and trials following their delivery to the Navy by Textron Systems.

The leadership on the USS Gunston Hall worked with Program Executive Office (PEO) Ships, Naval Surface Warfare Center Panama City Division, and Assault Craft Unit FOUR (ACU 4) as LCACs 105-107 entered the well deck for transport.

"SSC LCACs are in serial production and actively providing much-needed agility and speed to our fleet," said Capt. Jason Grabelle, program manager, Amphibious Assault and Connectors Programs, PEO Ships. *"The flexibility of LCACs, combined with their technology, provide our Navy and Marine Corps team with capability for today and the future fight."*

Later in July, the Gunston Hall team offloaded the three craft to their new home at ACU 4 in Little Creek, Virginia. ACU 4 is the parent unit for LCACs on the east coast. LCACs 101-104 arrived at ACU 4 in February 2022.

SSC LCACs are built with configurations, dimensions, and clearances similar to the legacy LCACs they replace – ensuring that this latest air cushion vehicle is fully compatible with existing, well deck-equipped amphibious ships, the Expeditionary Sea Base, and the Expeditionary Transfer Dock. LCACs are capable of carrying a 74-ton payload. They primarily transport weapon systems, equipment, cargo, and assault element personnel through a wide range of conditions, including over-the-beach.

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

The report by NAVSEA can be accessed here.

Peru Navy Hovercraft Unit celebration

On 28th July The Peru Navy Hovercraft Unit celebrated Independence day waith a tour out on the river with some of the local people. The Hovercraft unit has now been serving local communities and performing security patrols for over 12 years with the population that lives on the banks of the Apurimac River.

This year the unit has updated the craft tactical ballistic equipment and improved its ability to protect the local population along the river that is the boundary between Apurimac and Cusco provinces and drains down the east of the Andes.

Above and below we provide a selection of photos of the crew, support staff and some local people. The first two photos at top are of the Independence Day celebration. Photos kindly provided by Jean Tuesta.

Congratulations to the unit, and to Peru!

The Peru Navy official Video from 2021 can be viewed on YouTube. Click on the image below to view.

Hovercraft de la Marina de Guerra del Peru presente en (VRAEM) Prueba de Fuego

HOVERCRAFT RESCUE AT BURNHAM ON SEA

A stranded teenager was rescued from mud on Brean beach in evening of September 6th by Coastguards and Burnham-On-Sea's rescue hovercraft.

Two BARB Search & Rescue hovercraft, alongside Coastguard teams from Burnham and Weston, were called to the beach next to Brean Down where the 18-year-old was reported by his family to be stuck in mud shortly before 7.30pm.

The teenager had been enjoying a walk with his family on the lower part of the beach during Wednesday's hot weather when he got into difficulty in a soft patch of knee-deep mud with an incoming tide nearby.

BARB's hovercraft were launched from Burnham beach and flew along the sands to Brean where two members of the Burnham Coastguard Mud Rescue Team were taken onboard and were flown out to the casualty in the craft.

The teenager was freed from the mud by Coastguards before being taken onto a stretcher and moved onto the hovercraft to be flown up the beach to safety.

He was checked over by Coastguards and confirmed to be unhurt.

"With the tide incoming, a quick rescue was necessary, and this was a perfect multi-agency response alongside the Coastguards," said a BARB spokesperson.

Further info about Burnham on Sea Rescue Brigade and their two hovercraft can be found here.

Many thanks to the Burnham on Sea internet site for the article that can be found here.

DNV PRESENTATION – TRANSITION STATUS

DnV have published their latest energy transition analysis and projection to 2050 for the Marine Industry on September 11th. In common with many other analyses being published, progress is determined as slow and the challenge to meet the 2050 target becoming increasingly difficult.

Nevertheless, ther are signs that the marine industry is progressing towards being able to use a range of new fuels from LNG to methanol and ammonia that will assist the transition. The investment is going on, it is just that it takes time to deliver, and always seems to be not enough.

Following a presentation of the new report, there was an interesting guided panel discussion that gave some useful insights from the ship owner and operator viewpoint. A highly recommended view!

The presentation meeting can be viewed here.

The report can be downloaded from here.

OLEG LOVSTOV – DESIGNER AVAILABLE

Oleg made contact with THS Techsec recently. He is a designer now in Dobrota, Kotor, Montenegro, but until 2022 he worked as a designer in the ACV industry in St Petersburg latterly with Neptun He is talented in CAD and structural design and is looking for contracts and design tasks. Examples of his work below give a flavour for his expertise. Search on his name in LinkedIn to make a connection!

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Above Aquilon, and below Promethius, courtesy Oleg Lovstov

HOVERCRAFT MUSEUM NEWS

The Museum is open on most weekends of the year from 10am to 4pm. Details and updates can be found on their internet site THM, or on the Facebook page 'Friends of the Hovercraft Museum'.

HCGB MEETINGS PLAN FOR 2023

The HCGB and European Federation Racing calendar for 2023 was completed recently with three closely spaced weekend meetings:

- August 26 Gang Warily,
- September 9 Magnolls Farm,
- September 23 Whittlebury Hall.

Attention now turns to planning for 2024.

The HCGB calendar should be available by the end of this year, meanwhile the World Hovercraft Federation has announced that the next World Championships will be held in Germany, at Saalburg on 29th August to 1st September 2024, further details will be reported here once made available by the WHF.

It is recommended to visit the HCGB site for UK information and to contact event organisers directly via email or telephone.

It may be noted also that cruising events are organised by HCGB Northwest Branch and that British Hovercraft also organise several cruising events in the Southeast of England.

Both the Hoverclub of America, and the Australian Hovercraft Association have held meetings for cruising, competition, and fun in the last month or so, and enthusiasts from many parts of Europe gathered in August for the annual 'Rhone Raid'. We will endeavour to publish a selection of information from these events in our next News Note.

Society News

THS SUBSCRIPTIONS

So far almost all of our members have renewed for 2023/24 and we thank you for that. We look forward to continuing with you following progress in our special technology. We will continue to work on widening our membership and presentations tin 2024. Please let your colleagues know that they will be welcome to join!

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.

2023	**Subject**
October 2nd 19:30 UKt	Committee Meeting
October 12th 19:00 UKt	Evening Meeting with Amphibious Marine
October 19th 19:30 UKt	Committee Meeting
2024	**Subject**
February 8th 19:30 UKt	AGM
February 18th 19:30 UKt	Committee Meeting

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If members have any issue or technical subject they would like to discuss with Committee, please let us know with an email to Techsec who will coordinate with committee to arrange a special meeting or add to the meetings above. Attendance would be by Zoom. If request is from outside Europe, we can set up a meeting at times to suit you!

August Presentation and discussion

August 17th saw a select group of THS members join Ben Avery on Zoom for a presentation and discussion around the trials of Griffon Hoverwork GH12000 *Baien* that has since been delivered to Oita, Japan. A video of the craft on trials in the Solent was shown and discussion covered skirt systems, controllability, and a number of other aspects of the new design.

The recording from this meeting has been made available to members only as a private video on YouTube.

October Presentation and discussion

On October 12th at 19:00 UK time Bryan Phillips from Amphibious Marine, Shelton, Washington State will give us a talk with slides and video about his company, hovercraft, and long-distance journeys along the US NW coast towards Alaska.

Details and Zoom meeting invitation will be sent by email to members.

Obituary – David Wood

David Wood, one of the founding members of the Hovercraft Museum and original Trustee recently passed away of cancer in his early seventies . He was on the design team at Vosper Thornycroft at Portchester for the VT1 and saved the first museum Artefacts when rescuing pieces of the VT2 when broken up in early 1980s. He saved the propulsion fans and blades and the bow door amongst other parts. In 1986 the Museum Trust was formed and by 1987 he established a store at Fort Cumberland Southsea for the embryo collection which included SRN5 and HM2. David was a great engineer and very familiar with the proteus gas turbine and worked on Brave Challenger the fast patrol boat and other Brave class boats. He was a pioneer at the museum and a founder with Mike Pinder, Brian Russell, Walter Woodford, Peter Habens and Warwick Jacobs.

Above from left Brian Russell, Warwick Jacobs, David Wood, and Mike Pinder with a VT2 propulsion fan.

Many thanks to Warwick Jacobs for this information and photo.

From the Internet

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

Hovertoon by Dick Schramer

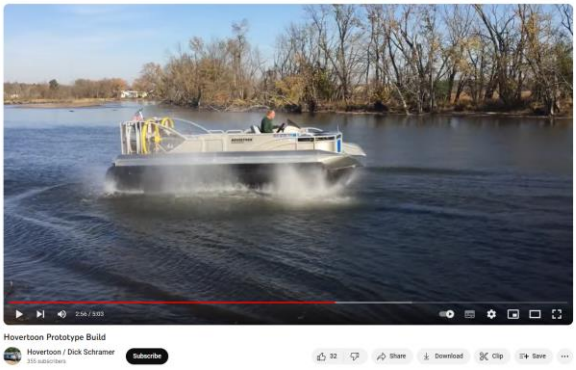
On his channel there are various videos of his large hovercraft. He is based in Wisconsin.

Hovertoon is a combination hovercraft and pontoon with pontoons that rotate outward to increase lift area by 50%.

Twin 42-inch 6 bladed multi-wing fans driven by a 200 hp V6 provide thrust, and lift is provided by a 22 hp V-twin driving two counter rotating 33-inch diameter 12 bladed centrifugal fans.

Dick has been documenting his development since 2019 on YouTube so there are quite a few videos to watch. The rotating cylindrical side pontoons are quite an engineering achievement, together with the loop and segment skirt.

Click on the image to go to his videos. They vary in length up to about 6:30.



DIY hovercraft build in Alberta

The is a record by an enthusiast in Alberta who had earlier built a Universal Hovercraft design. He came across a GRP hull and has completed the craft in his workshop, including turning a wooden vee belt drive pulley! Click the image below to watch. From November 2022, 12:39.

This 2000TD hovercraft, built in 2000, has just been fitted with a brand-new skirt system to keep it operational for at least another 5 years. The work was carried out for the customer in-country by Griffon Hoverwork Support Services Team. Photo courtesy the Lithuanian Border Guard.

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Hovertravel has agreed to allow THS members to book flights between Southsea and Ryde at a 20% discounted rate when booked online.

To obtain the discount members must use the current **THS promotion code**, which is available either from THS Treasurer, or from the Newsletter Editor.

At time of boarding, they should show their **membership card**. The offer is available for up to two people travelling at the same time. Once booked the tickets are not refundable or transferrable.

HOVER TRAVEL
fast • friendly • frequent

DISCLAIMER