

DAILY SHIPPING NEWSLETTER



DAILY SHIPPING NEWSLETTER : Monday 25-03-2002



**Operation
Enduring Freedom**

EVENTS, INCIDENTS & OPERATIONS

Stirling Shipping vessels converted



Stirling Shipping, the offshore vessel operator based in the UK, which was acquired by Seacor Smit in the US last year, has refitted two of its medium size platform supply vessels (PSVs) - the **Stirling Capella** and **Stirling Dee** - in order to turn them into multipurpose vessels capable of acting as Emergency Rescue & Response Vessels (or standby vessels, as they used to be known) for operation in the southern North Sea.

Top : The **STIRLING SPICA** leaves March 19th the river Tyne under her new SEACOR colours
Photo : Kevin Blair

The company has confirmed that it also plans to convert another of its medium size PSVs, the 2,584dwt, 5,000bhp **Stirling Altair**, into a combined cargo carrier and standby vessel. The **Stirling Capella** and **Stirling Vega** will be re-named **Putsford Provider** and **Putsford Protector**, having been transferred to Putsford Offshore, another Seacor Smit-owned company, and have been assigned to standby duties on behalf of BP.

Recent sales and purchase and newbuild activity

Aker Brattvaag shipyard in Norway has been awarded a contract by J Hagenaes for UT755L platform supply vessel, which is due to be delivered in September 2003. Solstad has taken over newbuilding

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AHTS A101 scheduled for delivery from Ulstein Verft in March 2003.

In the secondhand market, the AHTS **Purple Fish** and **Parrot Fish** (built 1982 - 5,300bhp) have been sold to Saudi Arabian buyers. Offshore Shipbrokers reports that the asking price was about \$4.5 million each.

The standby vessel **BUE Scarba** has been bought by Australians and will be returned to her former role as a fishing vessel. The vessel left Leith in mid February.

Farstad comments on acquisitions, market conditions

Farstad Shipping in Norway achieved operating income in the 4th quarter of 2001 of NOK 314.9 million (NOK 300.2 million in the 4th quarter 2000). The operating income for 2000 included a profit of NOK 44.1 million from the sale of vessels, while in the 4th quarter 2001 no vessels were sold. The increase in ordinary operating income is partly due to improved market conditions and partly due to an increase in the size of the fleet.

Since its last quarterly report, Farstad has taken delivery of **Far Scout**, a UT 722L design anchor handling tug supply vessel from Aker Langsten. The vessel immediately entered a 20 month contract with Norsk Hydro.

Farstad has also taken delivery of **Far Saga** from Simek AS in Flekkefjord. The vessel, which is a UT 745L design platform supply vessel, will be included in Stolt Offshore AS's general contract with Norsk Hydro AS for the delivery of subsea services. FarSaga will work as a supply vessel for Norsk Hydro until the necessary equipment has been installed and it is mobilised for subsea services.

At the end of October, **Lady Guro**, a UT 719-2 design multipurpose vessel, was delivered to IOS (Farstad's JV with P&O) by the Korean shipyard INP Heavy Industries Co Ltd. and entered a 5 year charter contract with Shell Philippines. IOS has ordered two UT712 design anchor handling tug supply vessels from Simek AS for delivery in March and July 2003.



Far Crusader and **Far Centurion's** contracts with Petrobras in Brazil have both been extended by two years. IOS has signed a 2 year charter party with Philips in Australia for **Far Scotsman** which commences in April 2002. **Far Scotsman** will be chartered into IOS from Farstad on a bareboat contract for at least 2 years. Lady Audrey (IOS) has been awarded a contract with Shell Namibia, which started in January 2002. It is expected to last for around 6 months.

Farstad says the market for supply vessels in the North Sea during the 4th quarter was better than expected. This was due to a higher than expected level of demand and a net reduction of tonnage in the North Sea. The demand for supply vessels was for a large part of the quarter on a par with the demand in the 2nd and 3rd quarters, but fell back somewhat towards the end of the year.

Altogether the demand for supply vessels in 2001 was around 3 per cent higher than in 2000.

CASUALTY REPORTING

15 People Missing in Ship Accident

HANGZHOU, March 23 Fifteen people were reported missing when an engineering survey ship sank Friday about 10 kilometers away from Zhapu Port of Jiaying City, in east China's Zhejiang Province. Rough waves capsized the vessel when it tried to anchor at about 2:15 a.m. Friday, sources said. All the 23 people on board the ship fell into the water. Eight were saved later and 15 went missing. Soon after the accident, the China Marine Salvage Center and the Zhejiang Provincial government organized rescue efforts. Seven ships were sent to search for the missing people. Investigations into the cause of the accident are underway.

Roeiersvlet Eendracht kapseist na aanvaring Neo Kemp Máxima

De roeiersvlet **RVE 27** van roeiersvereniging De Eendracht is vorige week gekapseisd bij een aanvaring met de Neo Kemp Máxima op het Beerkanaal in Rotterdam. De twee roeiers kwamen er met een nat pak en wat blauwe plekken vanaf.

De RVE 27 kwam uit de Zesde Petroleumhaven en wilde het Beerkanaal oversteken om naar de Mississippihaven te varen. Toen de vlet voor de Máxima langs wilde, kwam deze in aanvaring met de Neo Kemp die het vaarwater volgde

SHIPYARD NEWS

Ulstein design for Solstad

Ulstein Verft in Norway has entered into an agreement with Solstad Offshore ASA for the delivery of an [A101 anchor handling tug supply vessel](#) in March 2003.

The contract for the construction of the vessel is worth approximately NOK 350 million to Ulstein Verft AS.

Solstad will assume the majority shareholding in Seven Sisters II AS, a company which hitherto has been under the ownership of Ulstein Mekaniske Verksted Holding ASA. As a result of this agreement, Solstad Offshore ASA currently therefore has three vessels of Ulstein design under construction at Ulstein Verft.

Currently, Ulstein Verft has orders for six vessels, of which five are of Ulstein's own design. Ulstein has sold five vessels of its own design since the company established its own design department at Ulstein Shipyard in 1999.

"Our designs have been well received by the market since we established our own design department. This gives us the confidence to put further effort into the development of unique products in the field of ship design," said the company.

ROUTE, PORTS & SERVICES BALDER

(door Arno Post – Storekeeper Balder)



De **Balder** is afgelopen woensdag op de rede van Fourchon (aan de kust van New Orleans) Aan gekomen. De **President Hubert** is bij ons hij krijgt een groot platform aan boord zodat hij via de zij een ROV overboord kan zetten een hele installatie met controlroom en powerpacks en 2 kranen. Verder is bij ons de **Kristina A** een 3 maanden oude sleepboot van een amerikaans ontwerp ziet erniet uit van TMA Marine LLC uit New Orleans. We zijn nu aan de laatste fase van de verbouwing bezig. We hebben een contract van 5 jaar bij BP / Amoco.

Highland Navigator joins Thales fleet

Thales GeoSolutions has signed an agreement with Gulf Offshore for the charter of the Highland Navigator. The agreement is initially for three years with options to extend.

The **Highland Navigator** is a purpose built UT745 DP11 platform supply vessel (PSV) suited for survey and remotely operated vehicle (ROV) support. With the ability to offer a variety of services in offshore oilfield support, the vessel is equipped with a full complement of construction support, inspection and survey equipment, including deep water ROVs, 35Te crane, 30Te A-frame, dual fully redundant differential GPS systems as well as all the necessary on-line acquisition and off-line data processing and charting software.

There is also extensive deck space for customers' own equipment and materials

Tidewater takes delivery of supply vessels

Tidewater in the US has taken delivery of the **Miss Jane Tide**, its first VS 480 platform supply vessel built by the company's own yard, Quality Shipyards in Houma, Louisiana.

The ship, designed by the Norwegian firm Vik-Sandvik, is the first of four identical vessels to be built by Quality. The **Miss Jane Tide** is a 260ft PSV and is the first domestically constructed vessel to be

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delivered under Tidewater's new construction program announced in January 2000.

In addition, Tidewater has also taken delivery of the **Ace Nature**, one of eight vessels acquired from The Sanko Steamship Co Ltd. At 276ft, the Ace Nature, a UT 745 PSV, is one of the largest ships among Tidewater's fleet.

Upon entering into Tidewater's available fleet, both the Miss Jane Tide and the Ace Nature went on charter with large international oil companies at rates of \$20,000 per day.

Best-ever net profit for Navion; good earnings from shuttle tankers



Navion in Norway reports that it achieved its best-ever net profit in 2001, reflecting good earnings for its shuttle tanker fleet and reduced financial expenses. Rates for conventional tankers were also high during the first half-year. The group's financial position improved significantly, in part through a substantial reduction in debt and an increased equity ratio.

Operating profit amounted to NOK 1 087 million, a decline of NOK 534 million from 2000. Net financial expenses came to NOK 293 million, a decline of NOK 841 million from the year before. This improvement primarily reflects greatly reduced currency loss and the repayment of USD 415 million in long-term debt during 2001. Remaining long-term debt at 31 December amounted to USD 275 million. Repayments corresponded to 60 per cent of the debt outstanding at the beginning of the year.

The Navion group achieved a net profit of NOK 717 million for 2001, an increase of NOK 191 million from the year before. Overall operating revenues came to just under NOK 9 billion in 2001, a decline of slightly over NOK 850 million from the year before.

This reduction primarily reflects a substantial weakening in tanker rates during the second half, and winding up the floating production business in the same period. In addition, revenues from vessels fixed on voyage charters for Statoil after 1 July are not consolidated in the accounts. Such chartering is now handled by a newly-established company, Navion Chartering AS, owned 50-50 by Navion and Statoil.

Navion's equity ratio rose from 43.5 to 64 per cent during 2001.

The group controlled 61 vessels at 31 December, one more than at the beginning of the year. Utilisation of the shuttle tanker fleet was good in 2001, with stable earnings. Transported volume were roughly on a par with the year before. Spare capacity arising in the fleet from time to time was deployed in the conventional tanker market.



A number of contracts of affreightment were extended during the year, including one with ChevronTexaco on Britain's Captain field. The frame agreement with Statoil for offshore loading was

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also extended. Navion controlled 25 shuttle tankers at 31 December, one more than the year before.

Navion's floating production business unit was formally wound up in the second half of the year, and Navion's holdings in the Navion Munin and Berge Hugin production ships were sold to the Bluewater group. Navion took delivery in mid-September of multipurpose shuttle tanker Navion Odin from Spain's Izar shipbuilding group. This vessel started working as a crude oil carrier for Statoil at 1 January.

Navion says the West Navion drill ship demonstrated during 2001 that it can operate efficiently in deep water and under difficult weather conditions. Operated by Smedvig of Stavanger, this vessel had a high level of utilisation until an accident in November when a helicopter overturned on the helideck. In a subsequent drilling contract off Canada, damage to the derrick and recently-discovered cracks in risers have put the ship out of commission since early January.

The company says the outlook for its business activities in 2002 is generally positive. Earnings for the shuttle tankers are expected to be good.

Maersk vessel heads for West Africa



Offshore Shipbrokers reports that **Maersk Supporter** has left Singapore for West Africa against a one year contract with Triton Energy, whilst **Maersk Attender** — photo left heads for the same area, from the North Sea, against a two year contract with TFE.

Nieuwe Britse veerdienst zonder havens, reder en vracht

IJMUIDEN - Gezocht: reder. Eisen avontuurlijk ingesteld, met voldoende financiële reserves, creatieve inslag en geduld. Veel geduld. Dat geldt ook voor de reizigers die staan te popelen om vanaf IJmuiden naar Oost-Engeland te varen. Cruciaal is welke reder op de lijn gaat varen.

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In IJmuiden gaat de aanleg van de derde zeehaven onverdroten verder.

toegezegd. De grondwerkzaamheden zijn in volle gang en duren tot eind volgend jaar. In 2004 moet de nog ontbrekende infrastructuur worden aangelegd, zoals een terminal, op- en overslagcapaciteit en aangepaste kades voor het op- en afrijden van vrachtverkeer, opleggers en personenauto's. Verder moet de aansluiting op het bestaande wegen- en railnet worden gerealiseerd.

Eerst moet in Great Yarmouth nog een buitenhaven worden aangelegd. Net als de infrastructuur ontbreken ook nog de klanten.

Als alles volgens plan verloopt, vaart mogelijk al vanaf 2005 dagelijks een boot tussen IJmuiden en Great Yarmouth. Er is de provincie en de gemeente Velsen veel aan gelegen om de nieuwe bootverbinding te realiseren. Het zou een versterking zijn van de maritieme kracht van de IJmond en een natuurlijke invulling geven aan de derde zeehaven die nu wordt aangelegd.

De ontwikkelingen aan beide kanten van de Noordzee lopen niet parallel. Voor de benodigde Nederlandse fondsen (1,5 miljoen euro) liggen de subsidieaanvragen nog in Brussel en Den Haag, maar Noord-Holland heeft reeds 200.000 euro

In Groot-Brittannië is men nog niet zo ver. Cruciaal is het ontbreken van een buitenhaven in Great Yarmouth. De aanleg en inrichting van de nieuwe haven (geraamde kosten 51 miljoen euro) is, geheel volgens Europese richtlijnen, publiek aanbesteed. Een beslissing over wie de haven gaat bouwen en inrichten wordt op zijn vroegst later dit jaar verwacht. Pas dan kan ook de eerste schop de grond in. Geld komt uit alle Britse bestuurslagen en Europese subsidiepotten.

De ontwikkeling van de ferrydienst in IJmuiden is neergelegd bij het Projectbureau Masterplan Noordzeekanaalgebied. Beleidsontwikkelaar drs. Tom Lips erkent dat er met name van Britse zijde nog wel wat werk te doen valt, maar stelt dat er met vereende krachten aan wordt gewerkt. Het vinden van een reder zal geen probleem zijn verwacht Lips. „Er hebben zich al vier gegadigden gemeld." Namen of de landen van herkomst wil hij niet noemen.

Vrachtverkeer

Wat een reder zou kunnen aantrekken in de nieuwe lijn is, volgens Lips, de grote hoeveelheid vrachtverkeer van en naar Engeland. Dat wordt begroot op 5 miljoen units (auto's, trailers en combinaties) per jaar. Dit aantal stijgt nog telkens met gemiddeld 5,7 procent per jaar. De overtocht vanuit IJmuiden naar Oost-Engeland kan binnen vijf uur worden uitgevoerd. Het bidboek gaat ervan uit dat de nieuwe reder zal kiezen voor een schip dat 22 knopen (bijna 40 km per uur) kan varen, zodat er drie vaarten per dag mogelijk zijn en met één schip. Vanuit Europoort wordt er met 18-knopen schepen gevaren. De overtocht naar Harwich duurt dan zeven uur, waardoor maar twee vaarbewegingen per schip per dag mogelijk zijn.

Behalve tijdwinst op de directe verbinding kent IJmuiden nog niet de verkeersdrukte waar Europoort dagelijks onder gebukt gaat. Vooral voor het verkeer uit Noord-Nederland en Noord-Europa zou de meer noordelijke ligging van IJmuiden nog extra tijdwinst opleveren. Bijna de helft van al het goederenverkeer op Engeland komt uit Duitsland en het merendeel is bedoeld voor afnemers in Midden-Engeland. De nieuwe veerdienst zou op termijn 2,5 procent van de markt lijn moeten dekken. In de Britse marktverkenning wordt uitgegaan van een verkeersstroom die stijgt van 120.000 units in het eerste jaar naar bijna 200.000 in het vierde jaar. Dan zou de vaart ook winstgevend kunnen worden geëxploiteerd.

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In IJmuiden gaat de aanleg van de derde zeehaven onverdroten verder. Wanneer een reder zou uitblijven is er nog geen man overboord, vindt Peter van de Meerakker, adjunct-directeur van de Zeehaven IJmuiden. „De haven wordt niet louter en alleen aangelegd voor de veerdienst. IJmuiden ontwikkelt zich sterk als aanvoerhaven van diepgevroren vis. Ook de offshorefunctie wordt steeds belangrijker. De veerdienst is onderdeel van het totaalplan. Reders hebben vaak iets van 'eerst zien, dan geloven'. De Felisonterminal is ook gebouwd nog voordat DFDS Seeways definitief besloot van Amsterdam naar IJmuiden te verhuizen. Zo'n situatie sluit ik voor de derde zeehaven en de nieuwe veerdienst ook niet uit."

Russians want special Finnish icebreaker to serve Primorsk oil terminal

[Finland and Russia discuss possibilities to write off debts in exchange for environmental investments](#)

Russia's Ministry of Transport would like to get a special Finnish-built icebreaker to serve the new Primorsk oil terminal at the eastern end of the Gulf of Finland. According to **Mikko Niini** of **Kvaerner-Masa Yards**, the Russians want a special ship that moves sideways in the ice, thereby clearing a path that is wide enough for large oil tankers to pass through. The vessel would also be effective in collecting oil that has spilled into the sea. Different options for financing the project are now under consideration. **Russia has suggested** that the icebreaker for Primorsk might be classified as a so-called "eco-conversion" project. Under the eco-conversion system, some of the debts that Russia owes Finland can be written off in the form of environmental investments. To qualify as eco-conversion, the project should also have environmental benefits for Finland, and the should involve Finnish-built equipment. Finland has indicated that it is willing to write off about EUR 50 million in debts owed by Russia, which is about ten percent of the total Russian debt to the Finnish state. **Environment Minister Satu Hassi** (Green) says that the increase in oil transport in the Gulf of Finland is one of the biggest concerns of the Ministry of the Environment. Hassi would very much like to see the kind of icebreaker under discussion taken into use at Primorsk. Hassi chairs the Government's ministerial working group on Baltic Sea issues, which is currently considering ways to improve readiness to fight oil spills in the Gulf of Finland.

NAVY NEWS

HMS Fearless arrives home

The oldest ship in service in the Royal Navy has arrived in Portsmouth to be decommissioned.



Draped in her paying-off pennant, Fearless steamed into port for the last time.

She and her 638 crew were greeted by more than 1,000 family and friends.

The ship had been due to undergo a £2m refit but the Navy decided to save the money instead.

War on terrorism

The band of the Royal Marines played on the vessel's flight deck and a fly-past by a Jaguar jet

fighter, and three helicopters gave her a warm welcome home.

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She was completed in 1965 at the Harland and Wolff shipyard in Belfast and is the only steam-powered vessel in the fleet. She was due to be decommissioned first in the 1980s but was saved by the Falklands War, in which she played a crucial role as the command ship, leading the way into San Carlos Water. Major General Moore set up his headquarters in Fearless and the initial surrender negotiations were conducted with General Menendez on board in the commodore's cabins.



The ship was part of the Falklands taskforce in 1982

Most recently, she was deployed to the Middle East to take part in exercise "Saif Sareea 2".

This major operation before Christmas was interrupted by the war on terrorism and the strike force was put on full alert for deployment to Afghanistan. Captain Tom Cunningham said: "In a way it's quite nice for this ship to come home

after taking part in a challenging deployment like the one we have just done. It's a fitting end to 37 years of operational history." But the aged steam-powered vessel will not be missed by all who sailed in her. Sailor Matt Wensley-Smith said: "It's certainly in a class of its own - people had to constantly shovel coal downstairs in the engine room." She is capable of carrying a full assault force including aircraft which are launched from her stern.

Bond star

In 1968, the warship hosted a summit at Gibraltar between Prime Minister Harold Wilson and the president of Rhodesia, Ian Smith. Mr Smith had prompted a crisis when he declared the country's independence from Britain. Designed as an amphibious assault ship, Fearless enjoyed a starring role of a different kind in Hollywood.

She was used in the Bond film the Spy Who Loved Me.

Fearless is being replace by new warships Albion and Bulwark.

MOVEMENTS



USS MOUNT WHITNEY passing Hoek van Holland inward bound Sunday morning - Photo : Piet Sinke

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The tug **ZEUS** arrived with the **FPSO GLAS DOWR** at the Nieuwe Waterweg Sunday morning bound for Verolme Botlek , assiting tugs : **THAMESBANK** and **TEXELBANK** — Photos : [Piet Sinke](#)



AIRCRAFT / AIRPORT NEWS



The brand new **Fairchild Dornier 728-100** during her first appearance March 21st at Oberpfaffenhofen (OBF)
Photo : [Peter Unmuth](#)

Mogelijke nieuwe complicatie in JSF-deelname

De Verenigde Staten overwegen minder JSF-gevechtsvliegtuigen aan te schaffen, wat grote gevolgen kan hebben voor de Nederlandse deelname aan het project. Volgens het Pentagon wordt momenteel onderzocht of het leger inderdaad minder Joint Strike Fighters nodig heeft, en wat de gevolgen zijn voor de

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buitenlandse partners. De Amerikaanse krant Wall Street Journal meldde zaterdag dat het Pentagon vierhonderd toestellen minder wil bestellen dan de geplande drieduizend. Voornaamste reden zouden de hoge kosten zijn. Als de Amerikanen minder JSF-toestellen kopen, zullen de productiekosten voor de buitenlandse partners vrijwel zeker stijgen. Het kabinet besloot vorige maand mee te doen aan de ontwikkeling van het gevechtsvliegtuig, voor ruim 850 miljoen euro. Afgelopen week werd een akkoord gesloten met het bedrijfsleven, waarbij de luchtvaartindustrie zich garant stelde voor financiële tegenvallers.



V-22 OSPREY



The Pentagon's acquisitions chief said on March 22, 2002 the military was preparing to begin an intensive new two-year round of flight testing on the troubled V-22 'Osprey' tilt-rotor aircraft. But Defense Undersecretary Pete Aldridge said the Pentagon would not hesitate to pursue an alternative helicopter if problems continued to plague the \$40 billion program, which was grounded after two fatal training crashes in

2000 killed 23 Marines. An MV-22 Osprey is seen landing on the [USS Saipan](#) during exercises in January, 1999

RIJNMOND WEATHER

maandag 25 maart

9 uur 's ochtends:

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temperatuur: 3 graden
kans op neerslag: 0%
wind: zwak (8 km/u) uit OZO

5 uur 's middags:

temperatuur: 9 graden
kans op neerslag: 5%
wind: zwak (10 km/u) uit ONO

.... SHIP OF THE DAY

PROJECT 12322 "ZUBR" AIR-CUSHION LANDING CRAFT

EMPLOYMENT CONCEPT

The Zubr air-cushion landing craft is intended to carry out over-the-beach landing of advanced detachments of amphibious landing troops and combat materiel, as well as fire support of their actions on shore. The craft is also able to lay active minefields.



BASIC SPECIFICATIONS

Full displacement, t	550
Length on air-cushion, m	57.3

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Width on air-cushion, m	25.6
Height on air-cushion, m	21.9
Maximum speed, knots	60
Cruising range, miles	>300
Sea endurance, days	5
Crew, men	27

The Zubr air-cushion landing craft, Project 12322, has been developed by the Almaz Central Marine Design Bureau. It has been creating air-cushion landing craft since 1955 and continues work performed in Russia since 1934 on such craft.

LOAD CAPACITY

The Zubr air-cushion landing craft can carry three medium tanks, or ten armored personnel carriers, or 360 amphibious landing troopers.

ARMAMENT

ANTI-AIRCRAFT MISSILE. Four packages of portable missile complex Igla-1M.

ARTILLERY. Two sets of 30 mm automatic gun mount AK-630 with 3000 shells load and one MR-123-02 firing control system.

UNGUIDED MISSILES. Two sets of 140 mm launcher MS-227 with 66 shells load and one DVU-3 firing control system.

MINES. One set of removable equipment for laying from 20 to 80 mines, depending on their types.



NAVIGATIONAL AIDS

The craft navigational aids comprise:

- two navigation radars;
- gyrocompass;
- magnetic compass
- drift log;
- satellite navigation system;
- Dekka system receiving indicator;
- radio direction finder;
- master gyro system;
- day and night vision drift sight.



COMMUNICATIONS FACILITIES

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The craft is fitted with a system, which ensures telephone and telegraph communications in HF, VHF and UHF bands and performs the documenting, reception and printing of navigational, meteorological and other warning data.

POWERPLANT AND ELECTRIC SUPPLY SYSTEM

The high-temperature gas-turbine engines are installed on the craft to drive the air-cushion blowers and air propellers. Four NO-10 blowers, fitted with axial operating wheels, 2.5 m in diameter, are mounted to generate the air-cushion.

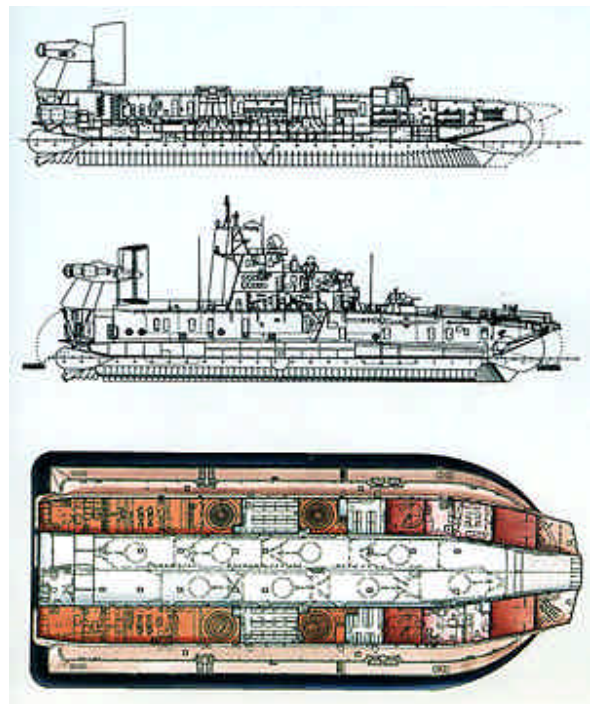
The air thrust for movement is provided by three four-bladed reversible variable-pitch air propellers, 5.5 m in dia. The air propellers are mounted inside ring shrouds.

The craft is equipped with two electric power plants. Each electric power plant comprises two gas-turbine generators, rated at 100 kW each, as well as the main switchboards.

Control of the craft and its technical means is centralized, remote, automated. These modes of control are selected from the main control station, central control room and remote control panels.

ADDITIONAL DATA

The square-shape pontoon constitutes the main carrying structure of the hull, which ensures the ruggedness and insubmersibility of the craft. The pontoon's superstructure is divided by two longitudinal bulkheads into three functional parts. The middle part accommodates a compartment for armored vehicles to be landed with taxi tracks and loading/unloading ramps. The main and auxiliary powerplants, troop compartments, crew living quarters, as well as the life-support system and the system for protection against WMD. To maintain comfortable conditions at combat stations, in amphibious troops compartments and crew living quarters, provision is made for ventilation, air-conditioning and heating systems, thermosound insulation coatings and structures made from vibro-damping materials. Provision is also made for the normal rest and feeding of the crew.



To protect the crew and troops and ammunition cells from bullets and fragmentations, the craft is provided with light armor plates.

The craft cannot be blown up by contact mines. Provision is made for protection from non-contact mines.

The Zubr air-cushion landing craft won a bronze medal at the 44th Brussels Eureka '95 Salon of Innovations.

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Top : The first **ZUBR class** vessel bound for the Greek Navy was the **L 180 Kefallina** , which was later transported to Greece by the **SMIT ENTERPRISE** , in total Greece will receive initially 4 vessels (2 from the Ukraine and 2 from Russia) it is reported that additional vessel will be ordered.



HAVE A LOOK AT THE FOLLOWING **SITES** FOR SHIPPING INFO AND PICTURES OF SHIPS AROUND HOEK VAN HOLLAND AT :

<http://www.scheepvaarthoek.nl>

&

<http://www.mcf-rotterdam.nl>

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