

vol. 4 **nr. 18** June - July 2023

- 115: Ukraine A selection of Ukrainian tugs
- **117: The Bonga transport** From South Korea to the U.K.
- 131: "Isa" no. 4 Unique eco-friendly tug

140: "Isa"1-2-3

- 142: Books Books relevant to this issue
- 146: TugTechnology '23 An impression
- 149: Lifetime Achievement Award presented at TT '23
- 153: Tug News New Tugs

Front page

The tug ISA, a compact tug suitable for a broad spectrum of work and with an interesting history. The propulsion system may be an inspiration perhaps for those of you contemplating to go greener and save money

> photo: capt Willem-Harm Mastenbroek



Of tows and tugs

In the previous edition of TugeZine we mentioned the upcoming TugTechnology 2023. The May/June period most certainly was one of trade shows and conferences. Having attended TT'23 this was followed by Maritime Industry. The third was the Electric & Hybrid in Amsterdam. While the targeted visitors were respectively tugs & towage, inland waters navigation and shipping in general, they all had a lot to tell about decarbonisation and green(er) shipping.

A lot of attention was given to alternative fuels. Consensus on that way forward seemed to be that there was no consensus. This had a lot to do with legislation running behind developments. On the other hand, the logical way forward seems to be to recognise that each port will have it's pro's en con's for a certain type of fuel. This situation obviously differs from the situation for merchant ships with their vastly larger onboard space. The discussion no doubt will be ongoing for quite some time.

Whilst on the subject of "green" this issue also has the story of the tug *lsa*, a unique tug because of its birth and – for a tug of that size - unique with its hybrid drive trains.

To change the subject a bit, we are now in the midst of the holiday season. For that reason we thought it of interest to present you with a long read on the subject of deepsea towage. The story of the tow of the *Bonga* FPSO is told by the Master of the lead tug and thus transport commander, capt. Kees Pronk. Out next issue will tell the story of *Bonga's* stay in the UK and the subsequent tow to Africa.

Our tug news this issue is somewhat limited due to space constraints so we will make that up to you in our next issue.

Have a nice holiday!!

Job van Eijk (editor)



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BASHTANSKI, seen here on the slip is a 29×8 m tug owned in the Ukraine. No further details found but she is of the same design as the two other tugs in this page. This is a large class of tugs about half of which it is estimated to have appeared in the registers



BURGAS ex BK-1269 is registered as owned by Ilyichyovsk Sea Port, Ukraine. Tonnage: 187 GT. Built 1972 by Leningradskiy Petroz, Main engines 2x 6-DR30/50-4-2, total output 1.200 bhp – Dimensions: 29,3 x 8,5 x 3,1 m. Propulsion: 2x c/p propeller. Speed 11,4 knots



KHERSON is registered as owned by Pallada-Kherson, Ukraine. Tonnage: 187 GT. Built 1972 by Leningradskiy Petroz. Main engines 2x 6-DR30/50-4-2, total output 1.200 bhp. Dimensions 29,3 x 8,5 x 3,1 m. Propulsion: 2x c/p propeller. Speed 11,4 knots



SMITWIJS SINGAPORE - the lead tug for the BONGA FPSO tow from South Korea to the U.K. The tug was built in 1984 by the Niestern Sander Shipyard in Delfzijl, The Netherlands. Dimensions 75,32 / 65,00 x 15,68 / 15, 30 x 7,60 m. Draught 6,40 m. Main engines 2x Stork-Werkspoor 9-TM-410, total output 13.500 bhp. Two single-drum friction winches with 1.300 m x 74 mm wire. One anchorhandling winch. FiFi capacity 600 t/hr fixed. Mobile pumps totalling 1.300 t/hr. Accommodation 38. Ex SMIT SINGAPORE/ 1991 Smitwijs Towage CV. 1998 renamed SMITWIJS SINGAPORE. 2007 Svitzer Ocean Towage BV. Renamed SINGAPORE. 2013 Priyanka Shipping Ltd, Panama (mngr Tsavliris Russ for Global Marine Services). 2013 GLOBAL SUCCESS I. Mngr Diavlos Salvage & Towage. 2014 sold for scrap to Marine Lines Shipbreakers, Alang. 29 May, 2014, beached at Alang, scrap commenced photo: Wouter van der Veen



DE DA was built by Ishikawajima-Harima Heavy Industries, Chita, Japan, for account of China Salvage. Dimensions 98,00 / 90,00 x 15,80 mld x 8,00 m. Draught 6,94 m max. Main engines 2x 16-cyl. IHI-Pielstick 16-CS2-5 total output 20.800 bhp. 200 tbp. SIngle drum towing winch with 1.500 m x 76 mm wire. Pumping capacity total 1.660 t/hr. Speed 19 knots (21,5 kn max). Presumed scrapped 2018 in India, at the time flying Liberian flag photo: Hans Hoffmann



JOHN ROSS was built in 1976 by Elgin Brown & Hamer, Durban, as S.A. JOHN ROSS for account of Safmarine. Designed specifically for ETV work around the South African coast. Dimensions 94,62 / 85,65 x 15,85 / 15,21 x 8,62 m. Draught 7,52 m. Main engines 2x 16-cyl. Mirrlees-Blackstone 16-KVMR Major coupled to a single shaft with a Lips c/p propeller 5.200 mm diameter in a fixed nozzle. Bollard pull 200 tonnes. Speed 20 knots. Two Norwinch friction-type towing winches with 2.000 m x 70 resp 56 mm wire. Also fitted with a Norwinch double-drum bridle winch. 2x fixed fire / salvage pumps delivering 600 t/hr each.600 t/hr. Accommodation 41 berths (including salvage crew when required). 1986 transferred to Pentow Marine. 1995 Pentow Marine acquired by Smit International. 2003 Smit Dudula Marine joint-venture. Renamed SMIT AMANDLA. 2005 Smit Amandla Marine Pty Ltd. 2016 AMSOL (African Marine Solutions). Renamed S.A. AMANDLA. Note: in this picture the tug still sports her aft mast, which was later removed to improve stability. As one Master put it: "60 tons of steel to carry navigation lights" (and a 25-tonne derrick, lift height 25 m above wl - ed.)"

The "Bonga" tow

In 2002 the "Bonga" FPSO was transported from the builders in South Korea to the U.K. for completion. This is the story as told by the Master of the lead tug, captain Kees Pronk.

by Capt Kees Pronk



Planned route of the BONGA tow

In 1996 exploration drilling by Royal Dutch Shell showed huge oil and gas reserves offshore Nigeria, in what was to become known as the Bonga Field. The field is situated some 120 km from the Nigerian coast in water depths of 1.000 m and over. To operate and produce at these water depths an **FPSO – a Floating Production, Storage** and Offloading was needed.

The construction of *Bonga* was split into two projects. The first one involved the construction of the hull in which the cargo tanks were located, with miles of pipeline, an engine room and the accommodation superstructure including a helipad. This was caried out by Samsung Heavy Industries (SHI) at their shipyard in Geoje,

map: coll. Kees Pronk

South Korea. Dimensions of *Bonga* are: length 305 m, width 58 m and height from keel to the top deck 52 m. The cargo tanks of the FPSO can hold 324.233.000 litres of crude oil.

The second one - completion of the FPSO, with gas turbines, oil and gas production equipment - and further state of the art equipment would take place in Newcastle upon Tyne, United Kingdom, by the AMEC group. After completion *Bonga* permanently anchored in the Bonga Field and therefore has no propulsion of its own. It had therefore to be towed from South Korea to Wallsend, Newcastle on Tyne and from there to a location in the Bonga Field offshore Nigeria.

SmitWijs Towage CV was formed in 1991 and was a joint venture between Smit International from Rotterdam and Bureau Wijsmuller from IJmuiden. Due to wrong investments from both companies, Smit International (offshore construction) and Bureau Wijsmuller (heavy lift vessels), they ended up in serious financial problems. To lessen the financial burden, the ocean towage activities of Smit and Wijsmuller in 1991 were placed in the joint venture SmitWijs Towage CV. A large mortgage was taken out by the two stockholders on the almost mortgagefree tugs so that Smit and Wijsmuller regained some financial breathing space and SmitWijs Towage CV was burdened with a large mortgage debt. In 1997 SmitWijs Towage CV formed an alliance with Pentow Marine from Cape Town, South Africa and COESS from Shanghai, China. The alliance was named Global Towing Alliance – GTA for short. (KP)

For the towage to Wallsend the Dutch ocean towage company SmitWijs Towage CV was contracted. At that time this was the world market leader in the field of large and heavy ocean towing transports.

For the Bonga tow the Global Towing Alliance selected the ocean-going tug Smitwijs Singapore as lead tug. Two other GTA tugs made up the remainder of the towing spread: the South African tug John Ross and the Chinese tug De Da.

On 5 June, 2002, I signed on to Smitwijs Singapore in Masan, South Korea. It was going to be a long voyage for me. From the early start of the project I was involved with the towing and voyage preparations. I had agreed with SmitWijs Towage CV to stay as captain on Smitwijs Singapore for the entire 100+ days of the tow.

The Passage Plan

The route as it was set out by me in the passage plan went from South Korea, west of Japan through the East China Sea, east of Taiwan, through Luzon Strait and through the South China Sea. Next we would make the passage into the Java Sea between the Indonesian islands of Kalimantan and Belitung and then via Strait Sunda into the South Indian Ocean. By remaining south of the equator, we would have the advantage of the SE Trade Winds and the westerly-set current. This course was to be kept until south of the Seychelles. From there the course would change to a NW'ly heading towards the Somali coast. During the summer months a very strong NE'ly-set current is running north of the Equator and close to the Somali coast known as the Somalia Current. This is generated by the SW-monsoon which is blowing at its maximum in the months of July and August with an average wind force Beaufort (bft) 8/9. I anticipated that during our passage along the Somali coast, the towing speed would double at times. By choosing this route, a significant longer towing



distance was made but because of the favourable winds and currents, a faster passage time would be realized.

The draft of *Bonga* during towing was established at 8,5 m at the bow and 10,5 m at the stern. To achieve this draught prior to departure 100 million litres of seawater were taken in as ballast. The hull above the waterline and the high superstructure was a large windage and created a strong wind resistance. If the wind were to blow from an unfavourable angle this would mean a significant reduction in the towing speed. In case of storm winds, even to zero speed or going backwards. Towing speed with three tugs achieved under normal circumstances was estimated at 5 knots (1 knot = 1 nautical mile per hour = 1.852 m). The required bollard pull to achieve this was developed by the combined 75.000 hp of the three tugs. This came at a daily cost for the three tugs together at a daily burning rate of 120.000 litres of fuel oil for their main engines.

Pre-departure preparations

The two weeks the tugs were alongside in Masan were used to prepare the tugs and *Bonga* for the long voyage. Meetings were held with the other captains, representatives of Shell, the SHI shipyard people and the warranty surveyor. Every day a bus with crewmembers of the three tugs was going to the SHI yard in Geoje to prepare and rig up the towing equipment on the Bonga. Essential teambuilding was done by the various crews of the tugs consisting mainly of exploring Masan

Under normal circumstances a vessel always uses the shortest route from A to B. For ocean-going tugs this is not always the fastest route. This specific towage was different, and it would have been unwise to choose the usual route across the North Indian Ocean. On the North Indian Ocean, the SW-monsoon prevails during the summer months, when the wind is increasing to storm force with high sea waves and high swells for several months. If the transport were to follow the usual shipping route via the Malacca Strait and the North Indian Ocean, the transport would experience storm force winds, high seas, high swell, and counter currents for most of the crossing of the North Indian Ocean. This would have a drastic effect on the progress due to the large windage of the Bonga and it would put the tugs in problems because of their limited bunker capacity. To prevent these problems, we were to avoid the North Indian Ocean and had to choose the southern route. (KP)



At Masan: the Master contemplating the voyage ahead

photo: coll. Kees Pronk

and dinners at the expenses of SmitWijs, Shell and the SHI yard.

At last, the date of departure was set on 17 June. Bonga had already left the SHI shipyard on 16 June as the berth of *Bonga* was urgently needed for another



Harbour tugs took the FPSO from the yard to the waiting ocean tugs

newbuilding project. Harbour tugs were holding the *Bonga* in position in the Geoje Bay. During the departure meeting on 16 June the warranty surveyor had provided the Towage Approval Certificate and an appendix with restrictions and recommendations. One of the restrictions was that with winds of more than twenty-five knots the transport should not depart.

On 16 June, the chief officer of the John *Ross* was hospitalized when he broke his arm during work on board Bonga and had to had to fly home. The two other officers of the watch of John Ross barely had ocean towing experience. This was a serious problem for the captain of John Ross. Pentow Marine in Cape Town immediately took action to mobilize another chief officer to South Korea. But he would only arrive in South Korea on 18 June. I discussed the situation with the SmitWijs operations manager and suggested to wait for the new chief officer to board John Ross. He, however, did not agree with my suggestion - the





The three tugs hooking up to the FPSO, DE DA on the right

transport had to leave as planned on 17 June. My arguments that the captain on John Ross would be with two inexperienced officers for weeks at sea were ignored - that was not his problem. I thought that was unreasonable and uncooperative of him. The next morning the weather forecast brought me the solution. The weather forecast for the morning of departure gave an offshore wind of 24 to 26 knots. For me it was good enough to leave, especially since it was an offshore wind. Under normal circumstances, I would have departed without any problems. But I had my reason to call off the departure. As leading tug master, I called off the departure and shared this information with the parties concerned. All parties agreed with my decision. Except the SmitWijs operations manager. He was a former seaman, and he knew as well as me that we could depart with this forecast. He was very upset and accused me of obstruction and sabotage. I played the innocence part and reminded him of the restrictions in the Towage Approval Certificate and the departure was postponed for 24 hours for the time being. In this way John Ross would still have her new Chief Officer on board so her captain could have a much better sleep during the towage to Singapore.

Departure

Early in the morning of 18 June I received the new weather forecast which was 23 to 25 knots wind. By now I had heard from my colleague that his Chief Officer had arrived in South Korea. He was scheduled to fly from Seoul to Masan the same morning. I decided we could

photo: coll. Kees Pronk

depart and informed the relevant parties. The ship's agent arranged that when the new chief officer arrived in Masan he would be send after us by a fast crew boat.

As first tug *Smitwijs Singapore* made her towing connection on *Bonga*, followed by *John Ross* and *De Da*. The operation went smoothly and around noon we departed with *Bonga*. The transport was already offshore and paying out the towing wires when the fast crew boat came alongside *John Ross* and delivered the new chief officer on board.

It was an impressive sight when *Bonga* departed behind three of the biggest ocean-going tugs in the world. The leading tug *Smitwijs Singapore* took up the centre position with *John Ross*

to starboard and *De Da* on our port side. On board *De Da* was a Dutch tow master. This was essential for effective communication and to ensure that the Chinese conducted their tasks according to the instructions of the leading tug master. The Chinese seamen often had trouble with the correct understanding of an instruction and not seldom acted with their own interpretation of an order. That could lead to unexpected and awkward situations.

The first refuel

A week before passing the latitude off Singapore Smitwijs Singapore disconnected the tow pennant from her tow wire and passed the pennant up to Bonga. Next she took over the tow pennant from *De Da* which ten departed for Singapore for bunkers while the transport proceeded. When a couple of days later *De Da* returned *Smitwijs Singapore* handed back the pennant and then in turn sailed for Singapore for bunkers. Upon return of Smitwijs *Singapore* she took over the pennant from John Ross which then sailed for bunkers. Ten days after the start of the bunker operation John Ross caught up with the transport - which by now had reached the Java Sea - and reconnected. *Smitwijs Singapore* then reconnected her own pennant from Bonga.

On 19 July the transport was in Strait Sunda passing the notorious Krakatoa volcano. The towage across the South Indian Ocean had begun.



Handing over tow lines prior to departure for bunkers

119

photo: coll. Kees Pronk



Crossing the South Indian Ocean

The voyage across the South Indian Ocean was smooth sailing. After passing the Seychelles the transport changed course to a NW'ly heading towards the African coast and potential trouble.

During an earlier towage back in 1994 I had towed close to the Somali coast. This tow was carried out during the SWmonsoon in the Somali Current with a very strong current of up to 7 knots. The distance to the coast was at times less than ten miles. During the full blowing SW-monsoon under the Somali coast there was a short high sea and hardly any build-up of swell. This sea condition was because of the short distance to the coast and the slightly offshore wind. This unusual sea condition allowed us to continue towing at full power and take all the benefits from the strong current, the following wind and sea.

Compared to my earlier towage in 1994 the situation in 2002 was markedly



Changing tow lines with JOHN ROSS prior to departure for bunkering

photo: coll. Kees Pronk

different as - since 2000 - pirates had become active along the Somali coast. Any passing vessel could be attacked, boarded by pirates and vessel and crew taken hostage. The vessel would then *De Da*. They agreed with my reasoning and had no objection to sail close to the Somali coast during the peak of the SW-monsoon.



A quiet day on the ocean allows an inspection by the SMITWIJS SINGAPORE workboat photo: coll. Kees Pronk



In pirate waters - SMITWIJS SINGAPORE, DE DA and BONGA FPSO as seen from the Navy scouting plane photo: coll. Kees Pronk

be forced to sail to the Somali coast and anchored there. Release of vessel and crew was only possible by paying a large sum of money. These pirates operated in small fast boats preferably in calm weather periods during the transition of the monsoons. That convinced me that during the peak of the SW-monsoon with the stormy winds and the high steep seas there would not be pirate activities. Going offshore with their 6 to 8 m boats with an outboard motor, the high sea state and very strong current would have made this near impossible. The pirates on the Somali coast were reckless and had little to lose, but they were not stupid.

Into pirate territory

Prior to departure I had discussed he pirate-matter with the captain of *John Ross* and the captain and tow master of

When the transport was on a NW'ly course towards the Somali coast the tow master on the *De Da* reported that his captain started to complain and did not want to continue towards the Somali coast. He wanted to stay at least fifty miles away of the Somali coast. That would mess up my entire passage plan and would expose the transport to the long high swell and much less favourable current. And as consequence less speed, more days of towing and a shortage of fuel oil.

I had to come up with a creative solution to force my passage plan through. I decided to call in the assistance of the Royal Dutch Navy. After all, one of their tasks is to protect the Dutch merchant fleet. At that time there were already quite a number of NATO warships and aircraft patrolling the piracy areas along the Somali coast and in the Gulf of Aden. I sent an email to the head office of Smit International with a copy to the president of Smit International, Nico Buis. Ex-vice admiral Nico Buis was a former commander of the Royal Dutch Navy. I imagined that he still had a line to the right people at the Royal Dutch Navy that could help us. And so It turned out. On 16 August I was informed by Smit International that the Royal Dutch Navy would be looking after us. In 2002 the Royal Dutch Navy still had the Naval Aviation Service (MLD) which regularly





From the Indian Ocean into the Red Sea

conducted patrol flights over the area. An aircraft of the MLD would conduct daily observations ahead of the transport. According to the captain of the *De Da* I had arranged that nicely and he was satisfied.

Also, on 16 August I was informed by *John Ross* that one of their main engines had broken down and could not be repaired at sea as they did not have the right spare parts on board. The decision was made to release John Ross and let it her go ahead to Djibouti. Pentow airfreighted the required engine parts to

map: coll. Kees Pronk

Djibouti and repair of the main engine could be carried out there.

On 17 August a Lockheed P-3 Orion of the MLD showed up for the first time. To get acquainted with us they gave a smart flyby show for the tugs and reported to me that they did not spot any bandits in our path. For added security I ordered both tugs to turn off all deck lights and the top navigation lights and only keep the side navigation lights. VHF-radio communications were to be kept to a minimum.



Transferring fresh provisions from SMITWIJS SINGAPORE to JOHN ROSS

That day the speed started to increase due to the strong current, even though only two tugs were towing. Speeds of eleven knots were reached in the strong current. Every day the MLD Lockheed P-3 Orion came flying by and reported that the sea area ahead of us was safe. On 19 August the transport passed Cape Guardafui, the Horn of Africa and entered the Gulf of Aden. For a period of about six hours the transport was exposed to the sea state that comes with wind force bft 9. The rough sea and high swell ran up to ten meters in height. After the transport had left Cape Guardafui behind, the wind dropped, and the sea became smooth again.

21 August was another bad-luck day. In the morning *De Da* reported that the camshaft of one of the main engines had run out and the engine had been shut down. The captain of *De Da* requested to be disconnected which I refused. Fore sure Warranty would raise hell if only Smitwijs Singapore was left to tow Bonga. I urged the Dutch towmaster to convince his captain to stay put, continue towing on one main engine and wait for John Ross to return. Resentful the Chinese captain agreed.

On 25 August John Ross returned and took over the towing connection from *De* Da. I wanted to send De Da to Djibouti for repairs and continue the tow with two tugs. SmitWijs Towage, however, refused. According to the towing contract there had to be three tugs connected during the passage of Strait Bab el Mandeb - the passage between the Gulf of Aden and the Red Sea. I was ordered to reconnect *De Da* but with a big and clumsy tug like De Da reduced to one main engine plus the poor manoeuvring skills of her captain that was a risky matter. So De Da was not reconnect. After lengthy arguments with Warranty and SmitWijs Towage I received permission to continue with two tugs through the Bab el Mandeb Strait provided De Da would act as an escort to the transport. Everyone understood that we could have done nothing with the escorting *De Da* but on paper it was okay.

The Red Sea

On 26 August De Da left for Djibouti taking our Chief Engineer with her. His mother had passed away the day before





DE DA disconnecting to sail for Djibouti for engine repairs

photo: coll. Kees Pronk



SMIT LONDON arrives to replace DE DA

and he had to fly to the Netherlands as soon as possible. As expected the repairs to *De Da* would take too long and the same day *SmitWijs Towage* mobilised *Smitwijs London* from the Mediterranean Sea to the transport as a replacement for *De Da*.

The air temperature in the southern Red Sea became a problem. Air temperature around 45°C and water temperatures of 33° Celsius made the technical installations of *Smitwijs Singapore* sufer. The main engines could no longer be cooled and output had to be reduced. The electric emergency switchboard was boiling hot with fuses tripping repeatedly. With additional fans aimed at the emergency switchboard and streaming seawater over the deck above the emergency switchboard space there was still some cooling and everything kept running.

On 2 September *Smitwijs London* arrived at the transport. She connected to

photo: coll. Kees Pronk

Bonga after which *Smitwijs Singapore* disconnected and proceeded to Jeddah. Prior to arrival of *Smitwijs London* there had been a heated discussion

In 2002 *Bonga* was the largest object that had ever used the Suez Canal to that date. The Canal is man-made over a distance of approximately 90 nautical miles between the Gulf of Suez (Red Sea) and the Mediterranean Sea. It was dug in 1869 to allow ships to sail from the Far East to Europe without having to sail around the African continent. By using the Suez Canal vessels sailing time was significantly reduced.

Dozens of vessels are sailing daily in Northbound and Southbound convoys through the Suez Canal. In some places the canal is less than 180 meters wide. For a huge vessel such as *Bonga* - without its own propulsion, a huge windage area and a low speed - the Suez Canal is too narrow to sail through safely. But from an economic and logistic point of view, the Suez Canal was chosen by Shell. It was costing less than towing around Africa, even though a very high fee had to be paid for the passage.

The Suez Canal authorities prefer not to see these special transports sail through the Suez Canal. These transports could cause a problem for the planning due to their low speed of towing. In the event of a calamity in which a vessel would block the waterway, all traffic comes to a standstill and there is no revenue for Egypt. This explains the high transit fees for towing transports. **(KP)**

between SmitWijs Towage and me about bunkering. The intention was to bunker fuel oil during our next stop in Suez. I had, however, realized that we could not anchor there so we had to keep moving in circles in the congested Suez Bay before entering the Suez Canal. Bunkering and supplies had to be taken during that time as well as crew changes. A common procedure in Suez were the numerous visits from agents, authorities and traders and all of them wanted to meet the captain. During the passage of the Suez Canal, it was expected that the captain would be on the bridge continuously. This would be too much for me as it meant hardly any rest for me during the days in Suez and the passage through the Suez Canal.

I had obtained information that in Jeddah, Saudi Arabia, fuel oil and provisions were available and crew changes could take place. I requested SmitWijs Towage to let me go to Jeddah to avoid this at Suez. It was rejected which I did not accept. After various heated e-mails and telephone calls I still got it my way and we could go to Jeddah for our bunker stop and crew change. This was coming from the same person who also thwarted me during departure from South Korea. In Jeddah we made a stopover of 12 hours. We bunkered fuel oil, gas oil, lube oil, took fresh provisions and changed crew. On 4 September we were back with the transport with a partly new crew and fresh provisions. We also brought fresh provisions for John Ross. So we first went alongside





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her to transfer the provisions prior to connecting the tow.

The Suez Canal passage

On 9 September early in the morning the transport arrived in the Suez Bay. Part of our crew went over to Bonga where they would stay during the passage of the Suez Canal. It was not possible to tow with three tugs side by side as the Suez Canal was not wide enough. So Smitwijs Singapore disconnected and transferred her tow pennant to Bonga. Next we took the pennants of Smitwijs London and John Ross which we connected to our two towing wires. We were now ready to begin the passage but first we had to suffer the necessary masses of authorities and self-proclaimed important persons. That caused a lot of irritation and costing us the necessary cartons of cigarettes to speed things up and obtain the required approvals. There was also a speed test to be performed for the authorities to determine the maximum speed for the passage.

By evening Smitwijs Singapore entered the Suez Canal towing Bonga. A Suez Canal tug connected to our bow for extra speed. Our transport was the last to join the northbound convoy.

On 10 September 1100 hours the transport arrived on the Great Bitter Lake. All ships of the northbound convoy were already anchored there. Smitwijs Singapore anchored as well while at the stern of *Bonga* an Egyptian



Start of the passage of the Suez Canal: SMITWIJS SINGAPORE in tandem tow with a powerful Suez Canal tug ahead to increase the towing speed photo: coll. Kees Pronk

tug was connected to keep the tow a safe distance away from Smitwijs Singapore. We could rest for a while as the southbound convoy from Port Said passed the Great Bitter Lake on its way to Suez. When the last ship of the southbound convoy had passed the northbound convoy continued their passage. At 1900 hours Smitwijs Singapore with her tow joined the northbound convoy as the last vessel on its way to Port Said and the Mediterranean Sea.



Map of the Suez Canal

map: coll. Kees Pronk

The next day at around 0700 hours Smitwijs Singapore and Bonga passed the breakwaters of Port Said and entered the Mediterranean Sea. Smitwijs London and John Ross were already waiting to reconnect to Bonga. Both tow pennants exchanged again and Smitwijs Singapore took its own tow pennant back from Bonga. When the crew of Smitwijs Singapore had been retrieved from



In the Suez Canal - SMITWIJS SINGAPORE towing BONGA from two winches. Towing speed 6 knots

photo: coll. Kees Pronk

125



Bonga the tow started on the last legs of the voyage.

The Med to the U.K.

The transport experienced no significant problems sailing via the Mediterranean Sea and the Strait of Gibraltar into the North Atlantic Ocean. Via the English Channel and the Dover Strait the North Sea was reached. On 10 October after a journey of 113 days and 12.800 nm the transport arrived off the River Tyne. Upon arrival *John Ross* went off-hire and left for some urgent business at Rotterdam.

The River Tyne is a fairly narrow river on the east coast and in the north of England. The River Tyne experiences strong tidal currents and there is a wide range between high and low water. The criteria under which *Bonga* could enter were very strict taking into account these facts. Furthermore passage of



PACIFIC BANNER loading towing wires at OTP Walker in preparation for arrival of the BONGA FPSO where she will act as a brake during the tow upriver photo: Kevin Blair

the tow was allowed in daylight only. As it was our arrival coincided with too much wind to safely enter the river. This remained so for the next seven days, after which a period of eight days began in which the criteria for tidal currents and daylight entering would be outside the set limits.

The FPSO *Bonga* was on hold off the entrance of the Tyne with *Smitwijs Singapore*, *John Ross* and *Smitwijs London* waiting for the weather conditions to improve before starting to make for the entrance and final docking at TCQ North Shields. From Rotterdam several tugs arrived to assist with this docking operation helping the local Svitzer fleet out. The first to arrive was *Fairplay-22*, followed by *Fairplay-23* and then Kotug's *R.T. Spirit*. While these vessels were waiting off the Tyne *John Ross* was replaced by *Pacific Banner*, which picked up two towing wires at TCQ North Shields before departing for the holding site.

While the convoy was in the holding area - some eight days - the local tug *Rowangarth* took out eight men to put aboard *Bonga* to assist with the ballasting up process, which was giving some problems. *Smitwijs Singapore* also entered port, to take on stores etc. at TCQ North Shields which took about one hour and she was soon on her way back to the holding area.

After three more days of waiting, the whole operation was put on hold. The very bad weather, as well as other problems, had made docking impossible. The convoy then made its way to Rotterdam with *Pacific Banner* about two miles in front of the tow and *Smitwijs Singapore* and *Smitwijs London* at the bow. All three of the tugs which had been awaiting events on the Tyne were also stood down and all left the Tyne for Rotterdam on 18 October. **(MH)**

Port of Refuge

When I observed the weather forecasts charts on 17 October I noticed a very deep low-pressure area was developing in the North Atlantic Ocean. According to the long-range outlook a very severe storm would develop out of this depression. The track of the depression would pass over the central North Sea and the holding area where the *Bonga* transport had to be kept going. With the arguments of the threatening weather forecast and because we were not allowed to enter the River Tyne in the coming week I decided that Bonga had to be taken to a port of refuge. The landlubbers with Shell disagreed with my decision, objected strongly and tried to prevent this move. Fortunately SmitWijs Towage understood my worries and decision and supported me. Warranty agreed with me too. Therefore Shell had to back down. I had the strong impression there were no people at Shell able to interpret a weather forecast.

I already had done my homework. There were not many ports around the North Sea that could accommodate a big hulk like *Bonga*. I came up with two suitable ports where *Bonga* could enter, Rotterdam and the Eemshaven in



SMITWIJS SINGAPORE entering the Rotterdam Waterway assisted by local Smit tugs

photo: Job van Eijk



Groningen. My preference and advice were for Rotterdam and Rotterdam was chosen. Rotterdam was able to anticipate to the emergency caused by the approaching storm. And Rotterdam was the ideal port in view of water depth, quay space, port facilities, etc. After the okay from the Rotterdam Port Authorities *Smitwijs Singapore* and *Smitwijs London* set course for Rotterdam at full power.

Sunday afternoon 20 October the Bonga transport passed the breakwaters at Hoek van Holland. Once inside the piers Smitwijs London disconnected and Smitwijs Singapore assisted by four Smit harbour tugs towed *Bonga* upriver watched by thousands of spectators on shore. When off the Oude Maas Smitwijs Singapore was disconnected and the four harbour tugs took *Bonga* under their care. That evening *Bonga* was safely moored at the Verolme shipyard at Rozenburg. It was still beautiful weather when I moored Smitwijs Singapore at the Waalhaven where I was relieved the same day.

Captain Pronk first went to sea at the age of 14 on board the fishing vessel SCH 46 – FRANK. Later he changed to freighters and coasters. In 1965 he started in the towage and salvage business on board the Wijsmuller tug TITAN. After six years with Wijsmuller he changed to Smit International where he started as a 'runner' on board the tows. A few years later he transferred from the tow to the tug. In 1976 and with the necessary studies completed he made his first trip as 2nd Mate. Eight year later he



SMITWIJS LONDON free running upriver to Rotterdam after disconnecting BONGA

photo: Job van Eijk



SMITWIJS SINGAPORE towing side by side with the Smit tugs FAIRPLAY-21 (nearest camera) and SMIT HUMBER photo: Job van Eijk

was Chief Mate aboard the brand-new SMIT SINGAPORE promoted to Master in 1984. He retired in 2016 after 55 years at sea. In 2023 he privately published the stories of some of his more memorable tows and salvage operations in book form titled "Bergen Slepen op Zee" (Dutch language only).

A few days later a very severe storm named Jeanet hit NW Europe. The storm raged with hurricane force winds with speeds measured up to 180 km per hour. In NW Europe 33 lives were lost and the storm related damage ran into two billion Euro. Looking back at these events it had been a wise decision to look for a safe haven.

As *Bonga* was safely moored in Rotterdam it was decided to wait until all circumstances were favourable for *Bonga* to be towed to River Tyne and to be delivered directly to Newcastleupon-Tyne. It took until 10 November for a suitable window opened for entering the River Tyne as well as a suitable longterm weather forecast for the transport to leave Rotterdam. On 16 November *Bonga* was finally towed stern-first up the River Tyne by *Smitwijs Singapore* and



Stern view of BONGA FPSO

photo: Job van Eijk

delivered alongside the AMEC yard in Wallsend for the second phase of the Bonga project.

Bonga - the last few miles

Prior to the second arrival of Bonga several assist tugs had again been mobilised. Svitzer's Frigga (1998 - 4.900 bhp - 62 tbp) and *Fenja* (1999 - 4.900 bhp – 62 tbp) arrived from the Tees and J.P. Knight's *Kincraig* (1998 – 3.600 bhp – 50 tbp) came from Invergordon. On 16 November the transport arrived off the Tyne. Heading up the tow was Smitwijs Singapore with Pacific Banner (1998 -12.240 bhp – 154 tbp) at the rear to act as a brake. Smitwijs London remained on hand just outside the piers until Bonga was safe inside. She then departed for Rotterdam. Yarm Cross (1979 – 2.640 bhp - 35 tbp) was given the role of lead tug of the convoy up the river while Flying *Spindrift* (1986 – 3.100 bhp – 40 tbp) took up a similar position at the stern, both being unattached, probably in a free role in case something unintentional happened. A further four tugs were attached with Frigga and Fenja forward and at the rear Rowangarth (1981 - 3.200 bhp - 42 tbp) and Kincraig. The tow from the piers to her final berth at AMEC's yard Wallsend lasted two hours and thirty minutes. This was followed by the long job of berthing the vessel, which lasted well into the night. Once several lines had been secured Smitwijs Singapore and Pacific Banner were released, both heading for OTP Walker to make ready for sea. By 19.00 hours most of the pushing up was complete and the three local tugs were released, along with Kincraig, which made straight for home in Invergordon. This left Fenja and Frigga still on duty until 04.00 hours, when both tugs

returned to the Tees.



Weather chart for 27 October, 2002, showing the severe storm depression over the North Sea

chart: coll. Kees Pronk

Once her towing gear had been returned and stowed, Pacific Banner made for Aberdeen and a return to North-Sea

duty. SmitWijs Singapore spent the weekend at the berth before returning to Rotterdam. (MH)



BONGA FPSO being towed up the Tyne by SMITWIJS SINGAPORE. Svitzer's FENJA was one of the assist tugs photo: coll. Kees Pronk



BONGA FPSO finally arriving in the Tyne towed by SMITWIJS SINGAPORE assisted by Svitzer's FENJA and FRIGGA. At the stern KINCRAIG helps steering with PACIFIC BANNER just visible acting as a brake photo: coll. Job van Eijk





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General Arrangement ISA (4), former SIL-JESKE B

A multifunctional 'Isa'

Capt. Willem-Harm Mastenbroek over the years operated several tugs named Isa. Recently he acquired another - this time an unconventional one, in technical as well as construction terms.

by TDI Tugboat Publications

This latest *lsa* is in fact the former *Sil*-Jeske B owned by BMS Seatowage BV, Noordgouwe, headed by Capt. Wout Bouwman. The story of how this tug came about is also unconventional. But first a bit about the background of the owner.

The Mastenbroek family

had already been active in inland shipping for a long time when in 1977 they decided to switch to seagoing. W.L. Mastenbroek purchased a 1966-built 400 grt shortsea trader named Espero later renamed as Vios. W.L. was married to a ms Touwslager, Her father – an inland waters skipper and oil trader was the brother of the towage agent and owner of Touwslager Towage, an inland waters tug operator.

The couple had four children, three sons and a girl. It was only natural that the sons followed nautical college. All three went to sea in short sea traders. In 2001 the youngest - Willem-Harm made the switch to towage where he worked on the tugs and workboats of lack van Dodewaard (the Herman Sr. company). In 2006 and with help from Marinus Hubrechtse he had the tug Isa



ISA free running

- named after his daughter - built by the Kooiman Shipyard.

In the same year Willem-Harm's brothers Henk and Jan-Marten jointly with their parents (the **Rederij Driemast**) also invested in a newbuild tug - Meander

photo: Willem-Harm Mastenbroek

- built for them also at the Kooiman Shipyard. That tug was employed worldwide until 2019 when sold to Canada.

Willem-Harm Mastenbroek

Mr Hubrechtse had designed and built several tugs for employment in the shallow Caspian Sea oil fields and Isa went the same way. After some years this work dried up and the tug continued working world-wide until 2016 when the tug was sold. The demand for tugs had been shifting towards tug / workboats so V.o.F. Isa took delivery of a Damen Shoalbuster 2709. The 41,2 tbp vessel would be with Mastenbroek for only a short time. In 2017 Damen Shipyards Gorinchem had obtained an order for two such Shoalbusters but with short delivery times. Unfortunately they had only one left in stock. They approached mr Mastenbroek with the result that *lsa* would be re-delivered to the yard in exchange for a larger 50.1 tbp Shoalbuster 3209 then under construction. The latter became the third Isa which delivered to Mastenbroek on 26 July, 2017. In 2023 the tug was sold to the Jersey States as Elisa.



Side view. Note the folded external wheelhouse stairs

photo: Willem-Harm Mastenbroek



On 8 May, 2023, ownership of *Sil-Jeske B* was formally handed from Bouwman Marine Services (BMS Seatowage BV) to Isa Towage BV, Wijk bij Duurstede, The Netherlands.

Sil-leske B started as an unfinished hull constructed in Serbia for account of K. Damen Shipyard at Hardinxveld, The Netherlands. Having received the hull the yard, however, went out of business. The hull passed through several buyers none of which completed the vessel. Next the hull came into possession of Koedood Diesel Service, Hendrik Ido Ambacht. Koedood – since 2021 owned by the Storm Group - is first and foremost an engine sale and maintenance company. But the company had also made a swing towards the development of hybrid ship propulsion, more especially in the inland shipping trade. Over time Koedood became leading in hybrid propulsion for inland shipping. Development of hybrid propulsion became a priority and thus they turned their attention to the unused tug hull sitting in their back yard. Plans were developed to use the hull as a test bed and demonstration vessel for hybrid solutions. Since it is difficult to reconstruct a tug hull into something else it was decided to finish the hull as a working tug.



ISA shortly after hand-over with the nav mast lowered

photo: Arie Boer

Enter capt. Wout Bouwman - owner and operator of tugs in inland and coastal waters. The Bouwman's have been involved in shipping and more especially towing for quite a long time and Wout for many years sailed as Master in the Bouwman tugs the family or he himself owned. He thus gained valuable experience which he applied to every tug he added to his fleet. As fate would have it, it was Wout Bouwman that towed Koedood's hull to a more convenient mooring. Koedood's sales manager, Gertjan de Gelder, being inexperienced in tug lay-out and the requirements for towing, got talking to Wout about Koedood's plans and received a lot of practical input. This resulted in the end in Koedood and Wout Bouwman developing the tug together.

When Bouwman agreed to charter the tug upon completion, the project gained pace. In the end, Bouwman decided to purchase the tug outright so certain specific Bouwman-requirements could be included in the new tug – to be named *Sil-Jeske B*. The tug was registered under ownership of Bouwman at 27 November, 2014 with the notation 'under construction at Shipyard Kooiman'.

Hybrid propulsion

Prior to this, however, Koedood put together a project team where **Hybrid Ship Propulsion** was to be the system integrator and also responsible for the software application necessary to distribute the power. HSP was also tasked to supply the **Baumüller** E-motors. **Kooiman Shipyard** was



An early job: 10 May, 2023 ISA pushing the v/d Herik crane KARMA IV. Note raised wheelhouse

photo: Nico Giltay

vol. 4 **nr. 18** June/July 2023







View from the wheelhouse on the fore deck in the lowered position

photo: Job van Eijk

The original hull cut to effect the widening

chosen for the reconstruction of the hull and building of the tug (yard number 207). **Oechies Electro** and **Mous BV** were to be responsible for the installation and building of the electronics and the frequency converters as far as the hybrid part was concerned, while Mous also handled the remaining electrical installation work. **Bouwman** acted as the end-user specifying the required operational needs as well as specific equipment.

Parties had quickly agreed on a hybrid solution with diesel main engines, diesel generators and electric engines mounted on the shafts. The operating profile foreseen for the tug included photo: Wout Bouwman

many hours on low output, standing by or idling, with maximum output only when towing – or pushing – heavy loads. The **Mitsubishi main engines** were an obvious choice, not only because Koedood is a Mitsubishi seller but also because the chosen type of main engine allowed for the 'boost' of sufficient added power from the electric motors. So not only could savings be obtained by the use of the dieselelectric configuration, but also by having available a larger bollard pull on top of the main engine pull.

The consequence

of this configuration had an impact on the engine room which was rather small in the original hull. Furthermore, the now customized tug was to have a lot of deck gear and there was a requirement for a height-adjustable wheelhouse. The latter would considerably extend the operational window of the tug. It also added a stability problem. This resulted in the need for widening and lengthening of the hull. Also, the bow had to be altered with finer lines to improve on speed and sea-keeping as well as to create space for the bow thruster.

The hull

The yard removed all the top hamper and then cut the hull in half at about



View from the wheelhouse looking aft over the towing deck. In this photo on 16 January, 2016, the hydraulic crane had not yet been fitted photo: Job van Eijk



Starboard main engine with the hybrid reduction gear photo: Cock Peterse

Tug Zine vol. 4 nr. 18 June/July 2023



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TT '23 'Tug of the Year' HAISEA WAMIS arrived in Canada in early July, 2023, after a delivery voyage from Sanmar Shipyard via the Panama Canal to Vancouver. The electric 68 / 65 tbp has a Corvus Orca 5.288 kW battery power system that drives the Schottel SCD-460 Combi Drive azimuthing thrusters fitted with 2.100 kW e-motors. The tug will be operating at Vancouver until her two sisters arrive after which they will move to Kitimat, BC, for service at the LNG Canada export facility photo: via Robert Allan Ltd



The Baumüller e-motor as fitted on board ISA photo: Baumüller

midships. Another cut was over de length of the hull along the keel. On top of that the bow was cut off to be altered.

The widening of the hull was effected by inserting a box keel with a width of 1,00 m effectively widening the keel to 1,20 m and the total beam of the tug to 8,00 m (mld). This created a lot of extra space not only in the engine room but also in the accommodation and on the towing deck. The aft section of the hull had to be altered to accommodate the wide stern with the stern roller. The original length of the hull was 22,00 m and this was now extended to 23,95 m. This was the maximum possible to avoid the more complicated regulations for vessels over 24,00 m.

The hull is made up of 8 mm steel with a frame spacing of 400 mm. From the forward engine room bulkhead going forward frame spacing was altered to 200.mm to enable the tug to operate in light ice conditions. Hull depth is 3,10 m from base. Draught is 2,60 m forward, 3,40 m aft. Maximum draught aft is 3,60 m. Tonnage: GT 130 ts, NT 78 ts. The hull is divided into five watertight compartments: fore peak – accommodation – engine room – store / workshop – steering gear compartment.

The tug is classed by Lloyds for 200 nm offshore so the tug can operate throughout Western Europe, the Mediterranean and up to the Baltic area. The tug was launched on 14 September 2015 and delivered to her owner Bouwman in November, 2015.

Main deck

The main deck is slightly stepped from the funnels forward. The **superstructure** at this level houses the combined messroom / recreation area / galley which takes up the forward part. A central passageway runs from port to starboard. From here a staircase leads down to the crew cabins. The aft staircase leads to the engine room. The wheelhouse can be reached from the messroom as long as the wheelhouse is in the 'down' position. When raised, the external stairway has to be used which in the 'down' position functions as a horizontal walkway.

The aft end of the superstructure houses – to starboard – the toilet space. To port is the shower which is fitted with a wash basin also. Opposite of the shower sits the washing machine and dryer. The accommodation is fitted with floor heating.

The **main deck forward** is fitted with a Kraaijeveld anchor winch type KAB-1-H-14D-140 which is fitted with warp heads to port and starboard. The bow of the tug is fitted with a single push knee with an 80 cm diameter rubber fender and which has rope guides to port and starboard to be used when pushing. The barge coupling wires are run from hydraulic 25-tonne Kooiman bargecoupling winches port and starboard. The push knee itself extends to below the waterline where it is integrated in the hull thus allowing the fitting of a Veth VT-150 tunnel bow thruster with a propeller diameter of 800 mm immediately aft of the pushing pole. This set-up also counteracts the falling off of the bow in crosswinds. The bow thruster is driven by a 150 kW electric motor.

Aft of the accommodation is the **towing** */* **work deck**.

A **Maaskant Hägglunds** M2-H2-210/420 double-drum towing winch is positioned directly aft of the superstructure. The drums are fitted with 700 m (towing drum) and 400 m (anchor-handling drum) x 38 mm wire respectively. Pull for both drums is 40 tonnes with a brake capacity of 70 tonnes. The port-side drum is split to additionally accommodate a work wire to retrieve anchors on board or two 80-meter lengths of Astra synthetical tow line. A double tow bitt guides the towing wires. No spooling gear was fitted. To starboard an 80 tm **Heila** HLRM-80-

135



The Masson hybrid reduction gear as fitted on ISA photo: ADS van Stigt



The e-motor installed

photo: Cock Peterse

3S hydraulic knuckle-boom crane was fitted which has a capacity at maximum reach - 12,32 m - of 6,18 tonnes (11,0 tonnes at 8,32 m reach). A further two 40-tonne hydraulic Kooiman barge coupling winches have been fitted port and starboard to facilitate pushing operations. At the aft end of the towing deck a stern roller has been fitted. A set of hydraulic **Kooiman** tow pins (30 tonnes swl) have also been fitted. in addition to a 30-tonne Kooiman Delta Pin unit consisting of angled pins and a chain / wire catcher. The towing deck is protected by wood extended to below the winch area. Clear deck area is 50 m². Cargo deck load is 10 t/ m². Recessed container clamps for two 20-feet containers were fitted. To port and starboard storage has been created for towing gear. Incidentally, stainless steel is used as much as possible in areas where chafing may occur, i.e. the mooring bitts, rope guides, etc.



Kooiman barge tensioning winch port-side aft

photo: Cock Peterse



Crew cabin

photo: Job van Eijk





Kraaijeveld anchor winch

photo: Job van Eijk



Maintenance-free stainless steel wherever functional

photo: Cock Peterse



Control desk with bow thruster controls on the left

photo: Job van Eijk

Galley / messroom

photo: Job van Eijk

This to reduce maintenance. A further item added is a 500 mm diameter moonpool.

On inland waters the tug is certified for a 2-man crew but at sea a 4-man crew is required. Below main deck behind the forward collision bulkhead are four single-berth crew cabins. All cabins are fitted with a TV set, chair, desk and cupboard. In addition, extra storage spaces for spare parts and food have been created throughout making use of the space created by the rounded hull in this section. As capt. Bouwman once put it: 'a simple 'O' ring not on board can put the tug out of business'. The cabins have individual air conditioning and heating.

Hybrid engine room

Main engines are two Koedood supplied Mitsubishi S6R-MPTAW-520 diesel engines with an output each of 520 kW at 1.850 rpm. The chosen Mitsubishi's allow the 'boost' of the extra 200 kW power from the PM motor. Total output applied to the propellers therefore can be as high as 2x 720 kW (1.958 bhp total). The power distribution is configured so the tug can run either on the main diesels, the diesels plus the PM motors or on the PM motors alone. A fourth mode can be used for manoeuvring where the high torque of the PM motors can assist the diesel. As the generators run at constant revs the generator motors run at their optimum



On the slip - note rudder arrangement

photo: Wout Bouwman



Wheelhouse with the 90-degree rotating control desk

performance thus having a very efficient fuel consumption. Cooling of the engines is through **Blokland** box coolers.

The main engines are coupled to Masson MM-W3700 hydraulic gearboxes with a reduction of 5,850:1. In order for these transmissions to work in a hybrid drive train the supplier - ADS van Stigt - modified them adding their in-house developed "hybrid-ready addon package" which ensures monitoring, greasing and cooling in hybrid mode. This allows the propeller shaft to run on the PM motors only. In this situation the multiple disc clutches are not engaged so the main diesel is disconnected from the propeller shaft but the outgoing shaft of the transmission still rotates freely. The thrust bearing of the transmission has also been adapted to accept the 'boost' load when the PM motor as well as the diesel engine are clutched in. The Hybrid Ship **Propulsion** control system regulates the correct sequence of (dis)engaging with the PM motors either being on-line or coming on-line. The timing is regulated by the PLC's.

Aft of the reduction gear **Baumülle**r DST2-315-ZA high-torque electric motors were fitted on the shaft. Output of these motors is 200 kW at 240 rpm each. Total 440 kW (598 bhp). In addition, the PM motors can serve as generators when required. The e-motors are powered by the two Mitsubishi 6D24-TL 240 kVA / 1.500 rpm main generator sets. These generators are connected to the grid that distributes the power depending on the electric demand.

The propellers and nozzles were developed by SIP Marine, Drunen. The nozzles are of the fixed SIP High Thrust type which are attached to the hull by struts rather than the more usual headbox. This allows for a less distorted water flow to the propellers thus minimising development of air bubbles which in turn diminishes cavitation resulting in less vibration. The propellers - with a diameter of 1.800 mm - were specially designed for optimal use with the thrusters and the water flow around the hull form. Speed is 11,5 knots.

Bollard pull is 25 tonnes on the main engines alone and 30,6 tonnes when 'boost' power is used with the PM motors







Propulsion info panel

photo: Job van Eijk

The Kooiman Delta Pin unit

photo: Job van Eijk



Right-hand side of the control desk photo: Job van Eijk



Aft deck view from the raised wheelhouse

photo: Cock Peterse

added to the drive line. On the PM motors alone, bollard pull is 9,6 tonnes.

The **rudder system** consists of two twin rudder installations. The fishtailtype rudders have a maximum opening angle of 2x 77 and 2x 80 degrees respectively. A requirement of capt. Bouwman was that the rudder pairs can be controlled either as a single unit or individually which greatly improves manoeuvring options in certain tight situations. Also, when reversing the rudders automatically centre, though this option can be disengaged for individual rudder handling.

Fuel and maintenance savings

are the result of the main engines being used for a small percentage of the operational time. The generators by itself have a more or less fixed fuel consumption but here the choice is whether one or two generators are used. Running on electric with one generator driving the e-motors the tug runs at half speed. This compared to a conventional set-up where the two main engines would be engaged running at

non-optimal revs. Also, when the main engines are running, the PM motors can be switched as a shaft generator serving the electrical needs of the tug which allows shut down of the generators.

A later addition increasing savings is a sort of 'DP-0' station-keeping application that allows the tug to remain within a 40-metre radius manoeuvring on a single generator. This keeps the tug on immediate notice without the need of first retrieving the anchor. In this mode fuel savings up to 75% are being achieved.

In addition to the main generators a Mitsubishi 545 30 kVA / 1.500 rpm harbour generator is available for electrical power supply to serve - when needed - the hotel services of the tug. This generator is not connected to the grid as this is not allowed under class rules.

Tank capacity

The fuel oil tanks hold 40 m³. Fresh water 9,4 m³, lube oil 1,2 m³, dirty oil 1,3 m³ and sewage 2,5 m³. Fuel oil transfer capacity is 50 m³/hr; water transfer capacity is 25 m³/hr.



Aft deck with hydraulic crane, two-drum towing / anchor-handling winch / collapsible outside access to wheelhouse photo: Wout Bouwman

Wheelhouse

The aluminium wheelhouse can be accessed from the accommodation when in the lowered position In a raised position entrance must be by way of the retractable ladder system at the aft end of the wheelhouse. The helmsman's position is in a U-shaped desk which houses all the control functions of the tug. This desk is positioned to starboard. Capt. Bouwman required for this desk to be able to rotate through 90 degrees. The reason for this was that it allows the helmsman to have a better view of the operations going on at the towing deck without the need of 'rubber-necking' at the same time avoiding the need for an aft control station. This is especially useful with close-quarters manoeuvring as well as with hooking up or anchor work.

The wheelhouse can be raised by 8,20 m (allowed on inland waters only) creating an eye level of 14,50 m above the water line. To create lower air draught with the wheelhouse in the lowered position the radar mast and the navigation mast are hinged so an air draught of 6,90 m can be accomplished. An indicator in the wheelhouse shows to position of the mast and provides a read-out of actual air draft.

The NavCom is extensive as may be expected on this kind of tug. A sea and a river radar were fitted, along with a river pilot, gyro compass, three VHF sets, autopilot, two GPS sets, AIS Ecdis electronic charts and an intercom system. All the **Alphatron** communication equipment is in an overhead console which is non-rotating.

Capt. Mastenbroek sums it all up: "The *hybrid propulsion together with the very* high manoeuvrability of the tug with its quadruple 70-degree rudders and powerful bow thruster makes every single mile of sailing feel like a gift. To find the optimum for the various diesel / electric / hybrid operating windows is a learning curve. Sometimes it is necessary to get away from 'this is how we always did it'. But the fuel savings are significant and keep you alert. Every hour of sailing electric and even on hybrid reduces our carbon footprint."

Note: this article is in part based on an earlier article by the author, published in 2016 in Lekko International 218.









ISA (1), 24-3-2011

photo: Nico Giltay ISA (2), 21-1-2017

photo: Leen van der Meijden

photo: Ruud Zegwaard

Name	ISA (1)	ISA (2)	ISA (3)
Completed	2007	2016	2017
Shipyard	Kooiman	Damen Hardinxveld	Damen Hardinxveld
Design	Axel Gommers	Shoalbuster 2709	Shoalbuster 3209
GT	239	218	327
Acquired	2007	2016	2017
Length oa	29,80 m	27,02 m	32,27 m
Length bp	26,76 m	23,94 m	29,60 m
Beam	9,65 m	9,10 m	9,35 m
Depth	3,10 m	3,60 m	4,40 m
Draught	2,50 m	2,63 m	3,30 m
Main Engines	2x Mitsubishi	2x Caterpillar	2x Caterpillar
M.E. total output	3.182 bhp	3.043 bhp	3.550 bhp
Propulsion	twin screw in nozzle	twin screw in nozzle	twin screw in nozzle
Bollard pull	45,4 tonnes	41,2 tonnes	50,1 tonnes
Speed	12,4 knots	11 knots	11,6 knots
Sold	2016	2017	2023
New owner	Samba Marine	Damen Shipyards	Jersey States
New name	Fox Challenger	Isa	Elisa
Current name	Tronds Fox	Talas	
Current operator	Tronds Marine	Kazmortransflot	



ISA seen in Norway assisting the lifting vessel / sheerlegs HEBO LIFT 10 - ex TAKLIFT 4 - maximum lifting capacity 2.200 tonnes, maximum hoist height (with jib) 83,2 m photo: capt Willem-Harm Mastenbroek



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Books

by TDI Tugboat Publications

Two of the tugs involved in the Bonga FPSO tow from South Korea via the U.K. to offshore Nigeria were John Ross and Wolrgad Woltemade. A book described in this month's book section tells about the conception, construction and operations of these two tugs that ranked amongst the most powerful in the world.



A tug at my heart

Subtitled 'Stories of South Africa's super tugs *Wolraad Woltemade* and *John Ross* (Smit Amandla)' it was written by Captain Okkert-Ernst Grapow and Tony Westby-Nunn. It was published in 2012. Capt. Grapow's first experience of tugs was gained aboard Marine Diamond Corporation's Collinsea, ex Caribische Zee. ex Cambrian Salvor, a 4.500 hp WW-2 built salvage tug. With Safmarine he was responsible for the setting up of the towage division and therefore the creation of these two monumental tugs.

In 248 pages the story is told of how this tugs came to exist, of their construction and, of course, the reminiscences of their Masters and crew members, their tows and salvage work. And about the choice of names and their unique call signs 'ZTOW' and 'ZTUG'.



The Spanish tanker CASTILLO DE BELLVER, on fire over 3/4 of her length and listing some 70 nm WNW Cape Town. The full story of this operation can be found in Capt. Grapow's book

newspaper clipping: Sunday Telegraph 8-8-1983, coll. Job van Eijk

In these pages we encounter various well-known tanker casualties, such as the infamous Venpet / Venoil collision, the Wafra, the Mimosa, the Castillo

de Bellver. Several distance tows are described such as the that of the semi-submersible rig Zapata Concord in 1982. Departing from Mobile (USA) the tow sailed around South America via Magellan Straits to Santa Barbara on the west coast of USA.

In 1997 Wolraad Woltemade – a tug designed for worldwide service but primarily with the southern oceans in mind – found herself close to the pack ice in northern Arctic waters towing the ice-resistant drilling / production platform *Molikpaq*. A good number of pages are also filled with reflections by the various tug masters, such as Stephen Matthews, Ian Merriman, Danny Betts and Russel Duse.

The book is well recommended, but probably only available second-hand. There also appears to be a Kindle e-book version but this has less photographs even so we did not find much offerings.

A tug at my heart - stories of South Africa's super tugs "Wolraad Woltemade" and "John Ross" ("Smit Amandla"). Authors: Captain Okkert-Ernst Grapow and Tony Westby-Nunn. Published: 2012. Publisher unidentified. Size hxb: 240 mm x 170 mm. English language. Cardboard cover. 248 pages. Over 230 illustrations (plans, drawings and photographs in b&w and colour). Indexed. ISBN 978-0-9921931-0-2. Second hand price try around USD 50,00 but prices up to USD 125,00 have been spotted, excluding post and packing and import duties where applicable. Note: watch tonywestbynunn.com as there are rumours of a possible updated reprint coming up.

"Castillo de Bellver"

on 7 August, 1983, had sent a mayday call. She was on fire over 3/4 of her length and listing some 70 nm WNW Cape Town. John Ross, Capt. Steven Matthews, responded to the Mayday call. Upon arrival the tug approached the forecastle with the monitors spraying water ahead to see if a man could be put aboard. At exact that moment a fireball went up and the tanker broke her back. With the fire on the stern section continuing the tug again approached the bow section which was partly below the surface. Just when a helicopter was to put a man on board to prepare the tow the bow section upended but did not sink. The stern section finally



exploded and went down. The bow section remained afloat albeit upended. The tug was ordered to connect and tow the section away from the coast. By 9 August the tow had reached very deep water. Towing speed was 0,6 to 1 knot. Early morning of 13 August the scuttling position was reached and explosives were placed. The first two misfired but the third one did the trick and by 0100 hr of the 14th the bow section slid beneath the surface. 271.000 tons of light Arabian crude had either burned or been released into the ocean. The full story of this case can be found in Capt. Grapow's book.

Bergen Slepen op Zee

Update Bergen Slepen op Zee:

In TugeZine 17 we announced captain Kees Pronk's book **Bergen Slepen op Zee**, subtitled 'Lotgevallen van een sleepbootkapitein'. **In this issue** we have an article on the *Bonga* FPSO. Captain Pronk was the lead tug of the first leg of the voyage from South Korea to the U.K.

Several of Kees Pronk's memorable voyages and salvage operations are described in his book. The stories are easy to read and factual. They are illustrated with a lot of photographs, weather charts, navigational charts, etc. Some of the more intricate problems are explained in detail. Amongst the stories are two chapters on the Golfoorlog (Gulf War), salvage of the Hyundai Fortune, a piracy attack, de Bonga tow from South Korea to the U.K., salvage of the Surf City, a triple tow with scrap vessels and several other towage jobs. The book is published **in the Dutch language only** and for non-native Dutch speakers the text requires a good understanding of the Dutch language. The book is a great read and well recommended. **JvE**

Bergen Slepen op Zee – Lotgevallen van een sleepbootkapitein. Author: Kees Pronk. Published: 2023. Publisher: Kees Pronk. 210 pages, fully illustrated. Available as Hardback or Softback. Hardback ISBN-13: 979-8364076595; Softback ISBN-13: 979-8391785026. Costs are Euro 30,00 for the hardback, Euro 20,00 for the softback. Both excluding postage and packing. To order, send an e-mail to: voorloper@outlook.com, specifying hard or softback and mentioning name, postal address, postal code and residence.

In September 1965 Kees Pronk for the first time boarded a tugboat

He joined the Dutch towage and salvage company Wijsmuller as an ordinary sailor. His first tug was *Titan*, one of Wijsmullers harbour assist / seagoing tugs. Titan was the second newbuild for Wijsmuller after WW2. The builders Shipyard Jonker & Stans at Hendrik Ido Ambacht, The Netherlands, delivered the tug (bn 276) on19 March, 1956. This was the first of six more or less identical tugs ordered by Wijsmuller, the others being Friesland (later Cycloop), and the slightly smaller Simson, Hector, Stentor and Nestor. Dimensions of Titan were 31,95 / 29,77 x 8,23 x 4,18 m Draught 3,31 m. Gross tonnage was 245. Main engines two 8-cyl. Bolnes diesels on a single propeller. Engine output 1.200 hp which was upgraded to 2.150 hp in 1970. 1981 laid up pending sale. 1983 reactivated.

laid up pending sale. 1983 reactivated. 1983 sold to Gibraltar flag as *Titan A*.

The month of **September**, **1965**, was a fairly quiet one for Titan – almost the entire month spent shiphandling at Ilmuiden. October, 1965, however, was an eventful one for Titan. On 1 and 2 October the Danish coaster Northwind was assisted when drifting off Texel with engine damage. She was towed to Cuxhaven. On 7 October Titan refloated the fishing vessel IJM 45 from the IJmuiden South Mole. Mid-October the tug towed a bucket dredger and a mud barge from Middlesborough to Rotterdam. A severe storm near the end of the month caused a lot of trouble in the North Sea. On 26 October, Titan sailed for the French trawler Henri Antazin aground of Great Yarmouth. She managed to free herself. On 29

October the tug set course for the German coaster Editha which reported a sinking condition in position 120 nm NNW from IJmuiden. *Titan* succeeded in connecting to the coaster of which the bow by now was already below the surface. After a few hours of towing, however, the coaster sank. On 30 October, *Titan* made an unsuccessful trip to Den Helder where the German coaster *Friesenland* had grounded on the Haaksgronden shallows. The coaster could not, however, be reached and became a total loss. On 1 November *Titan* obtained a LOF from the Russian fishing vessel Rewkow 90 nm NW of IJmuiden. In a north-westerly gale force 10 which smashed a bridge window of the tug and wounded some of the crew the tug reached the casualty in the early hours of 2 November. The services of the tug were refused by the casualty and later in the day the fishing vessel started up and continued its way escorted by another Russian vessel. On 3 November Titan again set course for Den Helder where the German coaster *Christine* was in trouble and listing heavily. The tug escorted *Christine* to IJmuiden.

This short period introduced Kees Pronk to various aspects of towage and salvage. He never looked back and stayed with tugs from that time on.



Update Workboats for the World In our previous issue we reviewed Workboats for the World - The Robert Allan Story.





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Since then this publication has won the John Lyman Book Award from the North American Society for Oceanic History in the Naval and Maritime Reference Works and Published Primary Sources category.

The John Lyman Book Awards are

presented each year by the North American Society for Oceanic History (NASOH) to recognize excellence in the publication of books that make significant contributions to the study and understanding of maritime and naval history. These prestigious awards are given annually by the Society in six categories: Canadian naval and maritime history; U.S. naval history; U.S. maritime history; science and technology; reference works and published primary sources; and biography and autobiography.

Workboats for the World recounts the history of Robert Allan Ltd., a marine architecture firm founded in 1928. With full color photographs and blueprints throughout, the book showcases the myriad vessels created by the company over the decades. The firm got its start designing stealth speed boats used in rum running, classic fishing boats, small ferries and sumptuous yachts. Under Robert F. (Bob) Allan, the firm began transforming the coastal tug fleet from wood to steel and developed unique innovations such as self-loading/selfdumping log barges.

This book is about a business, about the family that built it and about the many people whose efforts have helped to make Robert Allan Ltd. a success story in the global maritime world. It is also, of course, about the thousands of working vessels around the world which have been designed by the company over the better part of a century.

For the book itself Rob Allan teamed up with Peter A. Robson. **Robert G.** (**Rob**) Allan grew up in Vancouver, BC and attended the University of British Columbia before training as a naval architect at the University of Glasgow, Scotland. Having transferred the ownership of Robert Allan Ltd. to core employees beginning in 2008, Rob is now retired and living in Vancouver with his wife Enneke.

Peter A. Robson has more than twentyfive years of experience in the fields of book and magazine writing, research, editing and production and has authored or contributed to a number of awardwinning books on subjects such as commercial fishing, forestry and salmon farming. He lives in Garden Bay, BC.

The book is published by Harbour Publishing - a publishing house that previously (also) published a good selection of books on tugs and towage. This book counts no less than 590 pages. Best way to order at least from abroad is to contact Harbour Publishing direct via their website or try Amazon.com.

Workboats for the World – The Robert Allan Story. Author: Robert G. Allan with Peter A. Robson. Published: 2023. Publisher: Harbour Publishing, P.O. Box 219, Madeira Park, BC, VoN 2Ho, Canada. Size hxb: 313 mm x 240 mm. English language. Hardback cover with dustjacket. 590 pages. Nearly 600 illustrations (plans, drawings and photographs in b&w and colour). Indexed. ISBN 978-1550-179-873. Catalogue price \$ 99,95 excluding post and packing and import duties where applicable. Publisher website: http://www.harbourpublishing.com.



TITAN, Kees Pronk's first tug

photo: coll. Job van Eijk



TugTechnology 2023

The 2-day TugTechnology 23 conference brought a wide variety of subjects although the majority was linked to energy transition.

by Job van Eijk



Vicente Boluda Ceballos in his opening remarks at the TugTechnology conference in Rotterdam photo: Riviera Maritime Media

In his opening remarks Mr Vicente Boluda Ceballos - Vice-Chairman of Boluda Towage and Chairman of the European Tugowners Association sketched the three biggest challenges facing the tugboat industry today were in fact three interconnected processes: - sustainability

- legislation
- technical developments

A further item connected with this is market demand. While the first two items are government driven the third has to be supported by market demand.

No less than eight papers dealt with one or more of these subjects signifying increasing priority in the development of the towage industry.

Early Davs

The decarbonisation of the towage industry began some 10 years ago. The very first hybrid tug was Foss' Carolyn Dorothy built in 2009 (diesel / battery-electric), followed in 2012 by the retrofitted Campbell Foss. In 2011 /2012 Svitzer introduced Svitzer Gaja and Svitzer Geo which were newbuild ecodiesel-electric tugs. Also in 2012 Kotug's first hybrid (diesel-battery-electric) tug arrived, the retrofitted 2010 built RT Adriaan. In 2013 Sanmar delivered Bogoy and Bokn to Norways B&B. These were the first LNG-only tugs, working at an LNG terminal. In Japan Wing Maritime, a subsidiary of Nippon Yusen Kaisha introduced a newbuild LNG dual-fuel tug: Sakigake. Eddy-1, a product of Holland Shipyards, was introduced in 2014. Its propulsion system was a hybrid with boost capacity.

More recently tugs fitted with an SCR system appeared - another way of reducing some of the greenhouse gases. Svitzer adapted its Thames fleet to run on biofuels. The Port of Antwerp introduced Hydrotug - fitted with hydrogen duel-fuel engines.

A problem is that it is unclear what governments - either national or local - will decide to regulate. All alternative fuels have pro's and con's. This can be in the form of local availability,

opportunities to lock in to existing infrastructure or things like toxicity and whether one looks at the 'green' aspects of the entire well-to wake chain or if one limits this to tank to wake.

Other food for thought

Kongsberg in their presentation pointed out that reducing of greenhouse gasses begins with an easy win: reduction of actual energy use by for instance reducing hull resistance, reducing the hotel load but also by optimising operational planning, mob / demob at lower speed and better distribution of the tugs over a given port, reducing mob / demob distances.

The next step is use of clean energy sources and clean fuels with the third step being the maximisation of the energy conversion efficiency.

The actual choice of **alternative fuel** has a direct influence on tug design. This can be because of specific regulations as is the case with, for instance, LNG. Or the toxicity requires special arrangements. And – important – is the energy density of the product. This may require either extra tank capacity or acceptance of a (much) smaller range. The latter may not be a problem for dedicated shiphandling tugs unless availability of the fuel is in short supply. Ultimately this may affect the interchangeability of a tug across ports.

The Kotug e-Pusher is designed in such a way that the above problems can be



photo: Riviera Maritime Media



photo: Riviera Maritime Media







photo: Riviera Maritime Media

avoided. While the in-built electric drive is standard the power supply is interchangeable due to the use of containers. The choice – depending on location and operating window - can vary: stage V diesel generators, LNG, CNG, bio gas, hydrogen, methanol, ethanol, ammonia, or battery packs, to name but a few.

Another subject that was addressed at the conference was that of **autonomous and remote-controlled navigation**. Although tests are carried out the challenges are enormous. And then there is the safety issue. Autonomous comes down to tugs being operated by the tug itself. Autonomous systems make decisions independently without human intervention. Remote



photo: Riviera Maritime Media

control means there is a human operator at the other end of the data signal. There are various levels of 'autonomous' – an auto-pilot is a simple form of semi-autonomous, i.e. it takes away some of the crew but the vessel cannot operate unmanned. With remote-control there is no such thing. It is remote or not. Remote therefore is extremely dependent on uninterrupted data links between tug and the tug driver elsewhere.

While it has been suggested that neither autonomous or remote-control has to mean 'unmanned' the question remains what to do with those remaining onboard. If the systems or the remote driver are doing the majority of the work those left on board are there for emergency purposes only. The question in such a case is how to keep them busy, keep them aware of what is going on.

A paper by the class society Bureau Veritas explained the role of Class in the energy transition process as well as developments within Class of what they termed 'Robotugs', the r/c and autonomous ships. Over the past few years tests have been carried out by Kotug's *RT Borkum* (remote controlled from Marseilles the tug sailed the port of Rotterdam; later trials were carried out demonstrating r/c fire-fighting), Svitzers Svitzer Hermod (remotecontrolled berthing and sailing), Maju 510 (remote operation trials, automated situational awareness, collision avoidance, and manoeuvring control)

and *Nellie Bly* (autonomous sailing navigating the coast of Denmark)

photo: Riviera Maritime Media

The ITS Awards

A recurring event during these conferences are the Annual Awards. This year the Award for **Tug of the Year** went to HaiSea Wamis, the Robert Allan designed Sanmar built Haisea Marine owned most powerful electric tug in the world. Tugowner of the Year was awarded to SAAM Towage for its drive for new tugs with fully-electric propulsion to cut GHG emissions and underwater noise from its Canadian towage operations and for achieving carbon-neutral operations in Colombia. Invention of the year was the TRAnsverse tug, a Svitzer / Robert Allan design with an omni-directional hull form.



photo: Riviera Maritime Media



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Tug Zine vol. 4 nr. 18 June/July 2023

TUGTECHNOLOGY '23

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Damen's compact ASD Tug 2111 represents the latest in multi-purpose harbour towage. With 50 tonnes of bollard pull it has the power to confidently handle ships of all sizes, and the combination of Damen's patented twin fin skeg and twin Azimuth thrusters ensures excellent manoeuvrability. The double drum winch is positioned inside the deck house, allowing the single winch to operate over both the bow and stern. And as the latest in tug technology, the ASD Tug 2111 not only comes prepared for full compliance with IMO Tier-III regulations, it will also be available in a full electric version as part of an program for all Damen's compact ASD tugs.

Pictured here: ASD Tug 2111



Find out more on Damen.com



Lifetime Achievement

The ITS Lifetime Achievement Award 2023 was presented by Sanmar's Ali Gürün to Ton Kooren.



The assembled award winning teams of HAISEA WARRIOR, SAAM Towage, the Transverse Tug and the Lifetime Achievement winner photo: Riviera Maritime Media

Associated with the name Ton Kooren are the Rotortug, coining of the term Tugnology, the Kotug towage company and the breaking of the towage monopolies.

Ton Kooren joined the family tugboat business – **Sleepdienst Adriaan Kooren** - in the Netherlands in the late 1950s. At that time the preferred business was that of term chartering tugs to the dredging and construction companies. After spending time aboard the tugs to learn the tricks of the trade Ton came ashore as the technical manager. In 1963 the company tug *Marius* made the first overseas towage from Rotterdam to St. Nazaire with a laden barge. In 1977 Ton Kooren left the family business to start as **Ton Kooren International Marine Services**, a deepsea towage broker and management service. In 1982 the seagoing tug *Borkum* was acquired. In 1985 at the request of his father Ton



Not the best of photos but a historic one: 23 November, 1987 - arrival of Kooren's first two ex Faust tugs - ZP CHANDON towing ZP CONDON - with a "friendly" escort of Smit tugs. Smit tugs had also blockaded the Kooren quay so the two tugs moored at a shipyard instead - where they had to be spruced up after their Transatlantic voyage anyway photo: coll. Job van Eijk

Kooren re-joined the family business as the company director.

With the traditional work in the field of hydraulic engineering projects drying up other fields of employment were researched. To survive Ton Kooren planned to enter the shiphandling business. In his vision the shiphandling business in many ports had become a closed-shop business either with a single operator or by pooling agreements between operators. In 1987 Kotug International was started to challenge these more or less monopolies. To this end he purchased six powerful U.S. tractor tugs of an innovative design and with 45 to 52 tbp formerly owned by the bankrupt Fausttug company and seized by the U.S. Maritime Administration in a dispute of repayment of loans. These tugs were declared controversial in the U.S. - the Unions boycotted the tugs as they required less crew. Even though they had been constructed in accordance with U.S. regulations they were offered for sale outside the U.S.

At the time these tugs were the most powerful and manoeuvrable in the Port of Rotterdam and allowed for the use of less tugs per vessel assist driving the prices down. On 1 January, 1988, operations were started. The first longterm contracted customer was the giant SeaLand container shipping company. On 9 February, 1988, *Sealand Express* was the first SeaLand vessel assisted into port. The next step was expansion abroad by breaking into the Hamburg port monopoly in 1996, followed by Bremerhaven in 1999.

Realising even more powerful and manoeuvrable shiphandling tugs were needed he developed the Rotor Tug. This design was fitted with two azimuthing thusters in tractor position with a third behind. With towing winches forward and aft the 78 tbp tugs were still suited for work in narrow harbours. In 1999. The first two in a series of four were

Tug Zine vol. 4 nr. 18 June/July 2023

RT MAGIC - first of the RotorTugs. Built 1999 - 31,00 (oa) x 12,00 m - 3x 2.100 bhp - 75 tbp - 3x Schottel thruster

RT MAGIC

photo: Ruud Zegwaard Zegwaard

 The first e-Kotug RotorTug was a 2012-retrofit.

 Built 2009. 31,63 (oa) x 12,00 m. Output 7.200 bhp.

 85 tbp
 photo: coll. Job van Eijk

RT BORKUM was built in 2017 by Padmos Shipyard, Stellendam, The Netherlands - the same yard that delivered the first-ever RotorTug. Formally owned by Rotortug BV, Rotterdam, the vessel was designed for the explicit purposes of demonstration and training. Dimensions are 14,95 (oa) / 13,90 (wll) x 8,00 (mld) x 3,1 m with a draught of 3,30 m max. Main engines 3x Scania D19-070M output 221 kW (total 900 bhp). Pull 10 tbp, speed 8 knots. Towing winches forward and aft

photo: Nico Giltay

HERMES is an American RotorTug owned by Seabulk. Built in 2022 by Master Boatbuilders HERMES is the fifth RotorTug in the Seabulk fleet. Her direct sister is NIKE delivered in 2021. Bollard pull is 79,3 tonnes, propulsion by 3 Caterpillar 3512-E EPA Tier4 main engines with an output each of 2.375 bhp (total 7.125 bhp) driving Schottel SRP-430 fixed pitch azimuthing thrusters. On the foredeck sits a Jonrie Intertech Series 240 hydraulically driven single drum winch with 600 ft x 8" Samson Saturn 12 HMPE rope. On the aft deck is a Jonrie Intertech Series 500 hydraulically driven double drum winch with 650 ft x 8" Samson Saturn 12 HMPE rope and 2.100 ft of 2,25" steel wire photo: courtesy Robert Allan Ltd



Ard-Jan (left) and Ton Kooren in 2017 duringTechnology2017photo: coll. Job van Eijk

delivered in early 1999. This design was awarded the title of **'vessel of the year'** by the Royal Dutch Society of Shipping Engineers. Ton Kooren was also elected **'Port of Rotterdam Man of the Year 1999'**. This was followed in 2000 by the **Rotterdam Entrepreneur 2000 Award**. The Rotterdam Chamber of Commerce, Rotterdam City Development, the City of Rotterdam and neighbouring communities annually nominate remarkable entrepreneurs. An independent jury selects the winner.

In 2002, Ton Kooren handed over management of Kotug International to his son Ard-Jan Kooren. Via Kooren



BORKUM, Ton Kooren's first owned seagoing tug. Today Kotug's Rotor Training Tug RT BORKUM keeps history alive photo: coll. Job van Eijk



Ton Kooren addressing the guests at the naming ceremony for RT BORKUM, partly visible photo: Job van Eijk

Shipbuilding and Trading Ton Kooren continued the development and optimisation of the Rotor Tug. Kotug has spread its wings across the globe and has since been at the



ZP MONTELENA on 15 July, 2011 . Built 1985 - twin Niigata Z-peller tractor tug

photo: Ruud Zegwaard

forefront of decarbonisation with the early introduction of the eKotug and recently the e-Pusher. Kotug also offers tug training, nautical consultancy with regards to optimizing ports for tug services, technical consultancy supported by innovations in the field of propulsion, fuel systems, emissions and towing equipment. They also provide support to tug owners in case of new construction and acquisitions.

Receiving the award, Ton Kooren said "This is really the last thing that I would have expected today. Unbelievable. I am very glad to receive this award. We have all been working very hard to make Kotug into what it is nowadays, a good international tugboat company working all over the world. We have an excellent fleet of tugboats, we have good shipyard partners, good colleagues and I am very proud that I get the trophy -- that's going into the Kotug office, of course. Thank you very, very much."



151



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Tug News - New Tugs

A wide array of news from the world-wide tugboat industry and its suppliers. We are happy to receive your press releases and additional info via tugdoc@upcmail.nl.

compiled by TDI Tugboat Publications

Zero-emissions tugs for Europe

Damen Shipyards is currently developing the methanol powered tug as part of its mission to be the world's most sustainable shipbuilder. This completely new design is based on Damen's experience and knowledge thanks to its extensive R&D capability in alternative sustainable propulsion systems.

Now, Damen and Boluda Towage have joined forces. In a groundbreaking move the two organizations aim to launch the first newbuild methanol tug for the Europe. The first vessel is intended to be a Damen RSD-E Tug 2513 and the partners are now working together to identify the potential harbour that will be best matched to its operational profile.

An important milestone for Boluda in its ambition to work towards lower emissions has been a multiple order of IMO Tier III tugs in 2020. These pioneering vessels set a new standard for all its subsequent newbuilds.

Boluda Towage and Damen Shipyards look forward to working with other maritime stakeholders to accelerate the transition to cleaner vessels, particularly those operating in or close to urban areas. Vincente Boluda Ceballos, Vice Chairman of Boluda Towage, said: "We are very proud of this collaboration/ partnership with Damen Shipyards, which represents an important technological and innovative advancement for our industry. We know that we are in an increasingly complex environment that requires us to always be at the leading edge of solutions to increase safety in our operations, limit our environmental carbon footprint and meet the needs of our customers. With that purpose in mind, we are eager to continue our journey towards the future as a leader in the towage and maritime industry."

Arnout Damen, CEO of Damen Shipyards Group, commented: "We are delighted to be working with Boluda Towage on what will be a new chapter in European towage. Not only is this project in keeping with our own values, we also aim to give added momentum to the transition to sustainable harbour towage as the benefits that both electric and methanol-driven vessels deliver will be there for all to see. To aid this process we are already building RSD-E Tugs 2513 for stock and a number will be available for delivery in 2024 / 25.



SVITZER ELIZABETH



Arnout Damen (left) and Vicente Boluda Ceballos signed for the development of green tugs for Europe photo: Damen Shipyards

Boluda Towage

is seeking further growth. Following the acquisition of Smit-Lamnalco it has in June 2023 announced a strategic investment in Hongkong Salvage & Towage Services Ltd. HKST is a member of CK Hutchison Holdings.

Through this collaboration, Boluda will be able to expand its business portfolio into Asia and enhance HKSTS service offerings of salvage and towage services, benefiting both companies, business customers and the maritime industry.

A signing ceremony has been held to commemorate the special occasion and attended by the senior management teams of Boluda and Hutchison Ports. Vicente Boluda said: "Boluda's entry into the Hongkong Salvage and Towage Services Limited partnership has been a unique and formidable opportunity to strengthen Boluda Towage in the Asian continent and

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photo: courtesy Sanmar
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Schlepperballet during the Hamburger Hafengeburtstag festivities

photo: Hans Hoffmann



25th Anniversary of Fairplay Rotterdam

especially in one of its main ports, Hong Kong. We thank our new partners for the trust they have placed in the Boluda family to be associated with the towage business in Hong Kong."

Commenting on the partnership with Boluda, Eric Ip, Group Managing Director of Hutchison Ports, said *"We are very* pleased with this major strategic and complementary partnership. Boluda is recognised as a global leader in maritime services. Its extensive experience in tugboat services will boost our salvage and towage capabilities, creating a strong alliance that will benefit our customers in terms of integrated service offerings. HKSTS is excited to join the Boluda family. We look forward to working with our partner throughout our network of ports."

The collaboration signifies both companies will join forces to develop business opportunities with innovative

photo: courtesy Fairplay

solutions, supported by Boluda's fleet of over 700 vessels and Hutchison Ports' network of 54 ports in 25 countries.

One month earlier, in May, Boluda strengthened its position in **Togo**. The main purpose of this meeting was to evaluate the effectiveness of the publicprivate partnership between Boluda and Togo, in the framework of the tugboat activities in the Autonomous Port of Lomé. During the meeting, the management of Boluda Towage also announced the arrival of a new tugboat. This new tug represents an important milestone for the Autonomous Port of Lomé and especially for the Lomé Container Terminal. By allowing access for larger vessels, LCT will contribute to increasing the capacity of the port and strengthen its competitiveness in the region. With the arrival of the new tug Boluda signalled its commitment to Togo to work together to improve towage

services and support the development of the Autonomous Port of Lomé.

In addition the meeting also gave both sides the opportunity to discuss the competitive situation of West African ports.

The Fairplay dances

25 year ago Fairplay Reederei first started its towing operations in the Port of Rotterdam. This was in reaction to Kotug coming to Hamburg (see elsewhere in this magazine). In those years Fairplay steadily built its position regularly exchanging tugs for more powerful newbuildings. The 25th anniversary of their Rotterdam operations was celebrated with a reception for business relations and friends of the company. During the reception a number of the Rotterdam tugs performed a demonstration in front of the crowd.

Fairplay this year also danced at the Hamburger Hafengeburtstag. This time it was Fairplay-only since the other big 'dancer', Bugsier, has been integrated in the Fairplay operations. The 'Schlepperballet' was first performed in 1979 during the 6th Tug Convention. The first Schottel tractor tugs had entered service in Hamburg so Schottel organised this first dance. After that it became a standard performance during the Hafengeburtstag festivities. In 2014 tugs from Fairplay, Bugsier, Petersen & Alpers and Louis Meyer again danced for the delegates of the 23th International Tug & Salvage Convention.

Further T-ATS ordered

The U.S. Navy has ordered a further Navajo-class towing, salvage and rescue vessel from **Austal USA**. Austal now has contracted a total five of these vessel: T-ATS 15 in June 2023, T-ATS 13 and T-ATS 14 in July 2022, T-ATS 11 and T-ATS 12 in October 2021.

The *T*-ATS is an ocean-going tug, salvage, and rescue ship designed to support the United States Navy's fleet operations, with a multi-mission common hull platform capable of towing heavy ships. The ships can support a variety of missions, including oil spill response, humanitarian assistance, search and rescue and surveillance.

With construction due to commence on *T-ATS 13* and *14* in the second half of



2023, *T-ATS 15* is scheduled to commence construction in the first half of 2024, with delivery planned in late 2027.

Austal USA is heavily involved in naval construction with orders for the United States Navy's *Independence*variant littoral combat ships (LCS) and Spearhead-class expeditionary fast transport ships, a 211-metre auxiliary floating drydock (AFD) and more recently was awarded a contract for the detail design and construction of up to 7 steel T-AGOS ocean surveillance ships and up to 11 steel offshore patrol cutters for the United States Coast Guard.

Robert Allan Ltd

Recently a celebration was held to launch the book "Workboats for the World: The Robert Allan Story", described earlier in these pages. The book was released in December 2022 released in December 2022 but author Rob Allan's lengthy vacation delayed a formal launch.

The launch was held at the Polygon Gallery in North Vancouver, overlooking Vancouver Harbour. Some 150 members of the BC maritime community attended. This site is immediately next door to the site of Wallace Shipyards where the elder Robert Allan first worked on his arrival in Vancouver in 1919. Most importantly however the Gallery sits virtually on the site from which C.H. Cates & Sons Ltd. operated for nearly a century as Vancouver's premier ship-docking tug company. The long association with Cates is a treasured one in the history of Robert Allan Ltd., and the presence of 93-year-old Terry Waghorn, former President of Cates, was a special bonus at this occasion.

The evening began with Rob Allan describing the creation of this "hefty"



Robert Allan during his book presentation, presenting a case for a Canadian register of historic vessels and a callfor restoration of the steam tug MASTERphoto: Robert Allan Ltd

book, a process in his words not unlike designing a ship, through many iterations and edits, culminating in the selection of a quality "shipyard" (i.e., a publisher!) to take the manuscript, photos, and drawings to a suitable conclusion. Publisher Howard White also spoke about the process of creating what is being widely called a most important piece of BC maritime history.

Part two of the evening focused on discussion about **the importance of creating a registry of historic vessels of BC** in order that an accurate record of important ships in this province is not lost. The importance of this registry was highlighted by words from Tom Beasley, President of the Board of Vancouver Maritime Museum. Attendees were asked to lobby their MLA's on this matter.

The finale of the evening was a plea by both Rob Allan and Emerson Watt, President of the SS Master Society to support the **preservation of the iconic steam tug Master**, which was a century old in 2022, and can claim to be the only surviving wooden-hulled,



MULTRATUG 6 outbound in the Westerscheldt during Storm Polly

steam-powered tug afloat in the world. The audience was extremely generous in their support of an immediate requirement to have fabricated a proper weather cover for this lovely old tugboat.

Meanwhile this book has been awarded the 2023 gold medal for corporate history by Axiom Business Book Awards.

Svitzer

is ordering 4 tugs for a new contract at the Gastrade **Alexandroupolis LNG terminal** in Greece. This is the first Svitzer contract in Greece. Operations will commence in 2024.

Svitzer also announced it will change fuel the fleet of five tugs dedicated to the **South Hook LNG Terminal** in Milford Haven to hydrogenated vegetable oil (HVO). This is a low-carbon fuel which will reduce CO₂ emissions of the fleet. For HVO no modifications to equipment or engines have to be made.

In 2022, the switch from MGO to HVO in Svitzer's UK fleet prevented more than 21.000 tonnes of CO₂ from being emitted into the atmosphere. With the HVO conversion of the fleet South Hook fleet there are only a few tugs left to be converted to complete the conversion of Svitzer's entire UK fleet to lowcarbon fuels.

A recent delivery was *Svitzer Elizabeth*. The 80-tbp FiFi-1 RAstar 3200-W is fitted with two Caterpillar 3516-E IMO Tier III main engines delivering a total output of 4.700 kW (6.392 bhp) driving the Kongsberg US-255 azimuthing thrusters with fixed-pitch 2.800 mm propellers.





The Wijsmuller tug TITAN seen here alongside the ill-fated tanker TORREY CANYON. This was the first big spill that generated environmental awareness. The tanker had run aground on the Seven Stones Reef - caused by faulty navigation and an overlooked auto-pilot - on 18 March, 1967.

Upon the tanker's Mayday call the Dutch Wijsmuller salvage tug UTRECHT (ex JEAN BART, 3.750 ihp) sailed from her salvage station Mounts Bay. Bugsier's ALBATROS sailed from Torbay, the Portuguese PRAIA DA ADRAGA had also changed course for the wreck site while Bugsier's ATLANTIC and Smit's WITTE ZEE were ordered to the scene on spec.

Wijsmuller being first on the scene was contracted under LOF. They send STENTOR from Avonmouth carrying large air compressors, subcontracted PRAIA DA ADRAGA and mobilised their tug TITAN from IJmuiden with additional salvage gear. The tanker started pumping it's cargo overboard to lessen the draught. With the weather deteriorating the tanker started to roll increasing the damage. The hull had been ripped open and the main pump room was flooded. By evening over 5.000 tons of oil was in the water forming an 8-mile slick.

By 24 March the list of the ship had been corrected and tanks pressurised. The next two days were spring tide but with the wind increasing to near gale force the tugs only succeeded in turning the tanker as she pivoted on rocks amidships. On 25 March the first of the black tide landed ashore rather ironical at a place named Whitesand Bay. A day later during a gale the tanker broke her back with both sections awash. Mounts Bay was now filled with oil. On 27 March a heavy swell was running and the forward section of the wreck also broke in two. The oil was now spread around the Cornish coast from the Lizard to Newquay.

The next day the British Government ordered the salvors away from the wreck - in the process losing all their on-board equipment - and bombed the wreck setting it on fire in an attempt to burn the remaining oil. This was repeated over the next few days. The oil slick meanwhile moved to the coast of France and by 11 April 90 miles of the Britanny coast had been polluted.

Nearly 120.000 tons of oil had been spilled into the sea

newspaper clipping: The Daily Telegraph 22 March, 1967, coll. Job van Eijk