TugeZine

all about tugs

Salvage, Wreck Removal and more . . .

vol. 4 **nr. 21**
December 2023

Front page:
Showing the fierce fire ravaging the unfortunate HYUNDAI FORTUNE box boat. A fire in one of the containers ignited several containers with fireworks. Capt. Kees Pronk with his tug SMIT ROTTERDAM was involved in the salvage – his story can be found in this issue of TugeZine | all about tugs
photo coll. Kees Pronk

Salvage & Wreck Removal

As announced our December issue this year is published early to coincide with the **Salvage & Wreck Removal Conference** held in London. As media partner we have been looking at the content for this issue. No doubt much will be published about current events in this market. Therefore we thought it prudent to go back in time and talk about salvage & wreck removal from the past to the present. As the saying goes:
"He who does not know about the past will not understand the future".

Going through the documentation and our library to find suitable items we noticed that most of the things we do today have already been done in the past albeit in a less refined form. Remaining are collisions, fires, strandings and – unfortunately - war. It is quite clear that on that subject several present 'leaders' did not learn one bit from the past.

Discussion will remain about car carrier design and safety. *Fremantle Highway* made clear that what needs addressing is the evacuation of the crew in case of trouble. Here the crew was lucky in that it all happened close to shore while they were trapped on the top deck. At least one man owes his life to Rederij Noordgat, Terschelling which immediately sent their fast intervention vessel. They rescued the man who was in an isolated spot down in the vessel. Noordgat crews also succeeded in making an emergency connection allowing their salvage tug to turn the casualty into the wind keeping the toxic fumes away from the crew. *Hunter* kept pulling all the time allowing the ETV's to effect cooling down the hull. The Noordgat crews and *Hunter* received little attention in the press. Food for thought.

We trust you may find items of interest in this issue, triggering memories. We like to hear from these memories! Think about that shoebox full of old photographs and notebooks. And start sorting, then perhaps publish – we are happy to assist.

Job van Eijk (editor)

Want to read more? Use the QR codes to find out the content in other - more regular - issues.

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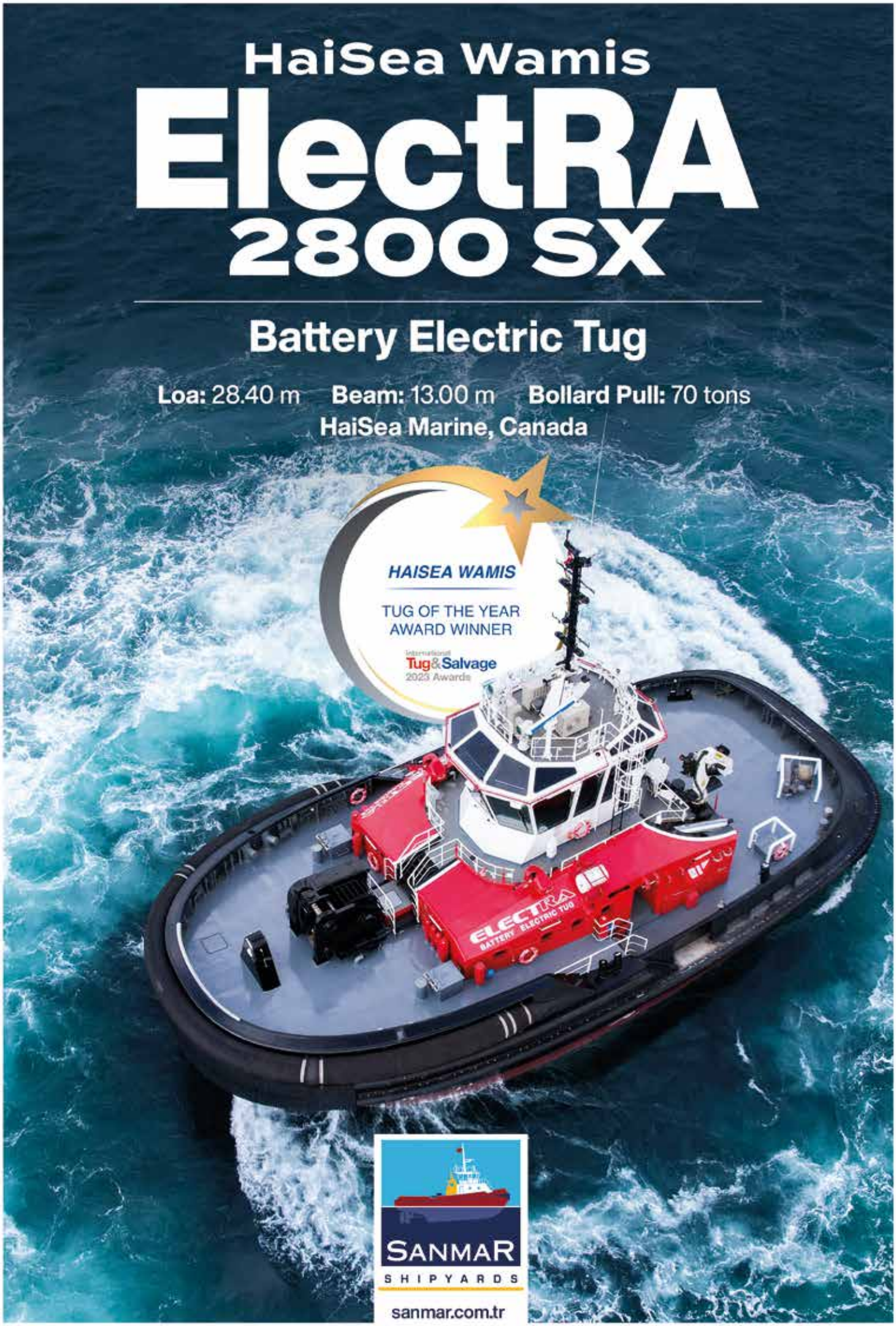

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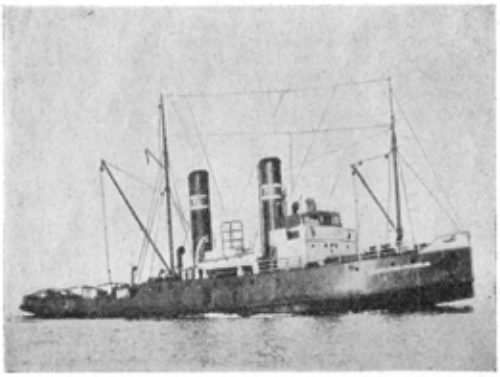

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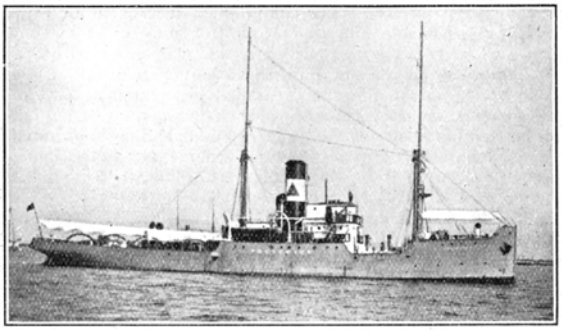

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Salvage operators then and now

The history of salvage goes back to the earliest days of mankind when they started using water as a means of transport and ships were wrecked. But our story starts much later at the time when dedicated salvage companies were started.

by Job van Eijk

Mr Emil Z. Svitzer, founder and initiator of the 'dedicated salvage company' photo: Svitzer

Considered to be the oldest salvage company in the world it is appropriate to start this item with the Svitzer company.

The story of the salvage company **Em. Z. Svitzers Bjergningsentreprise** begins in 1833. Up to then salvage, rescue and cargo-recovery operations had been carried out by local fishermen for whom these opportunities formed a nice addition to their more regular income from fishing.

Salvage of ships and / or cargo has existed since the first time ever someone built a raft that stranded somewhere and where the cargo was brought ashore or the raft refloated. Legal rights did not exist so it was a matter of first come first served to deal to pick up the cargo or refloat the entire raft and take possession. Things improved somewhere during the Middle Ages but plundering shipwrecks was predominantly the privilege of the local seaboard population. Incidentally, the term 'wreckers' includes salvors of ships in distress as well as those that lured ships into the treacherous shallows with the intent to plunder the cargo.

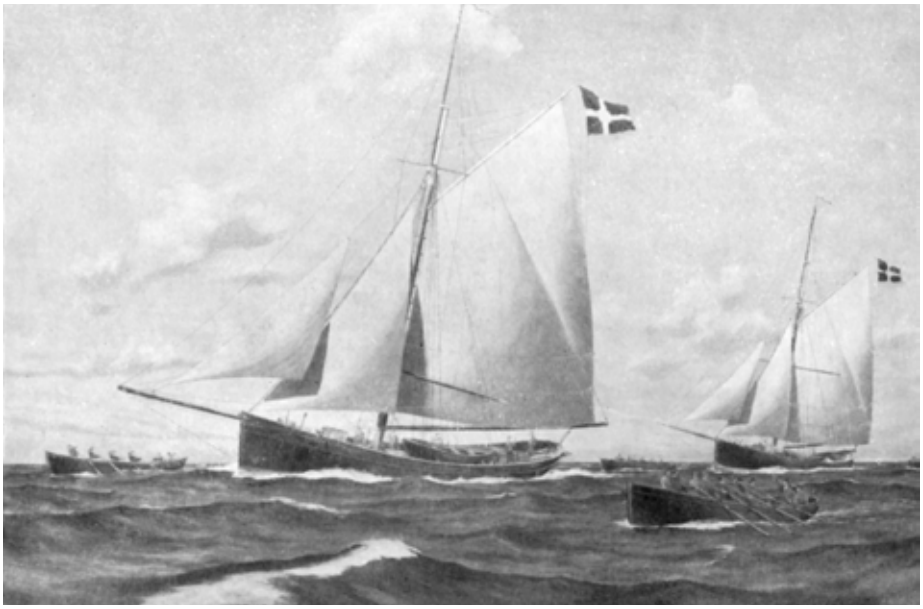
Much later regulation was initiated which entitled wreckers or salvors to a percentage of the value with the remainder disappearing in the pockets of a State and / or local Rulers.

Diving

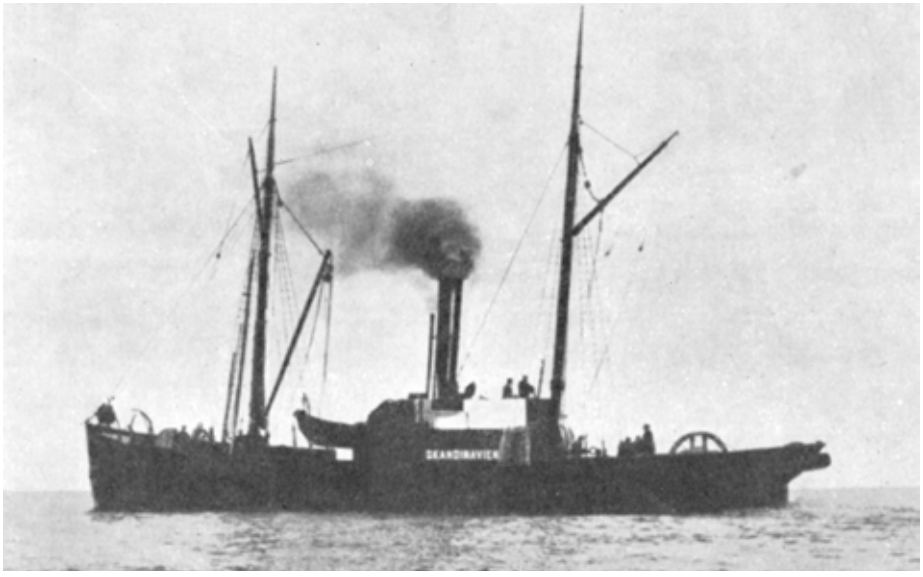
The one major invention that transformed the art of salvage was that of diving. Initial 'divers' were merely good swimmers. The invention of diving equipment like the diving bell – a type of which was used already in 1588 in recovering of treasure from the wrecks of the Spanish Armada. The hardhat diving costumes and much later the 'frogman' outfits and saturation diving greatly facilitated working in and near wrecks at ever greater water depths.

Mr. Emil Zeuthen Svitzer

was just 27 years old when he took his



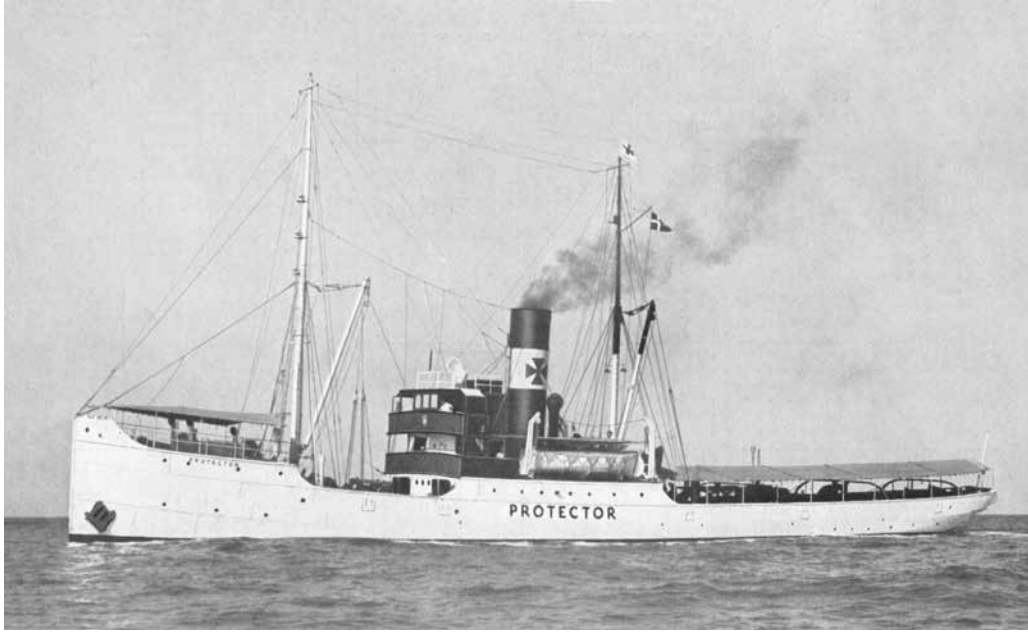
The Svitzer salvage fleet in 1850 - the cutters IDA and CAMILLA and four open boats
painting: H. Schøsler-Pedersen in Svitzer-The vessels during 125 years



SKANDINAVIEN - Svitzer's first salvage steamer and example for the ones that followed was acquired through raining the vessel from the bottom of a lake and then reconstructing
photo: from Svitzer-The vessels during 125 years

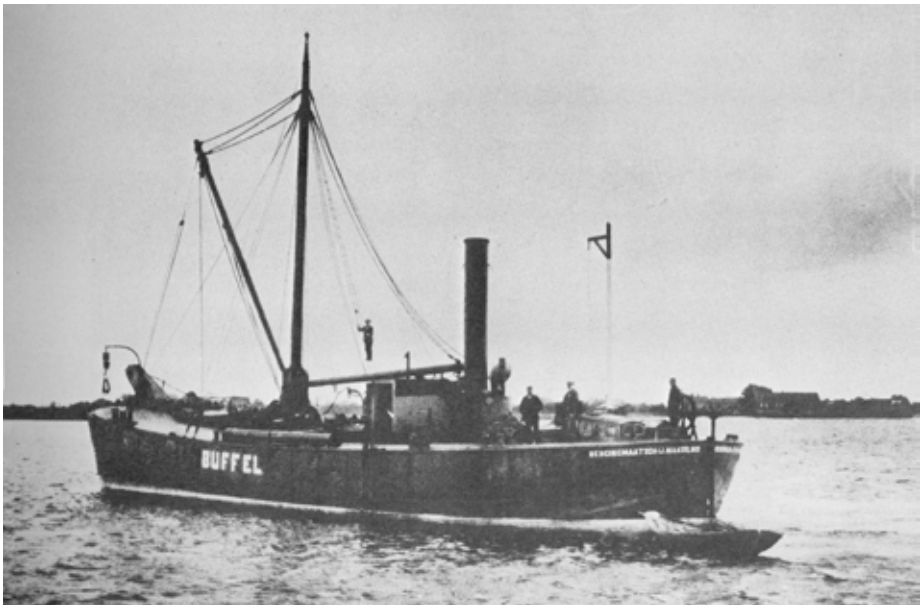
first steps into the world of salvage. At the age of 14 the son of a vicar obtained a traineeship in a Copenhagen trading company. Jacob Holm, the owner, was amongst others engaged in shipbuilding. In 1829 mr Svitzer obtained his traders licence and became partner in the timber trader J.A. Lange & Co. After mr Lange's death he took over the business. With the timber trade he experienced shipments being lost through shipwreck. This started the idea for a salvage company.

Mr. Svitzer wanted to develop a professional business assisting and recovering vessels In need and their cargoes. Assistance could be to vessels that had grounded but could be re-floated, to vessels damaged but still floating, or to vessels completely wrecked at sea At the time the sea routes to and from Copenhagen were not easy to navigate. No navaids were present. Charts were incomplete and were considered a matter of national security. In the first half of the 19th century salvage was usually undertaken by local fishermen paid either by the King or the shipowner. The fishermen had typically formed a local salvage guild and would undertake the salvage with their own boats. Vessels grounding and wrecking were not unusual and salvage was an important extra income for these local communities, especially during times when bad weather made fishing difficult. If the vessel belonged to a declared enemy the wreck was considered the property of the Danish Kingdom.



The salvage steamer PROTECTOR was built in 1906 by B&W at Copenhagen. Engine output 950 hp, during reconstruction in 1947/48 fitted with oil-fired boilers, output listed as 1.050 hp. Pumping capacity 4.000 tons/hr. She worked a long way from home. For instance in 1933 she refloated the Norwegian freighter FERNGLEN off Cape Guardafui, Somalia. In 1906 she raised the Chinese ss KWONG CHOW at Hongkong and while operating out of Hong Kong went as far as Borneo, Malacca and the coast of Annam. Later she was stationed in the Red Sea. She operated for 28 years out of Suez. *photo: Svitzer*

In 1827 a small company near Copenhagen had been founded on the same idea, but closed when the owner died just three years later. When Em. Z. Svitzer started his salvage business in 1833 there was no similar professional salvage company in Denmark and today Svitzer is considered to be **the oldest dedicated salvage company in the world**. In starting the business rm Svitzer partnered with master mariner H.C. Larsen to handle the maritime matters. Practical knowledge of seamanship and relationships within the shipping industry were – and are - crucial to succeed in salvage. By choosing the right kind of talents the base of his company was well-founded and the skills of the company earned recognition from shipowners.

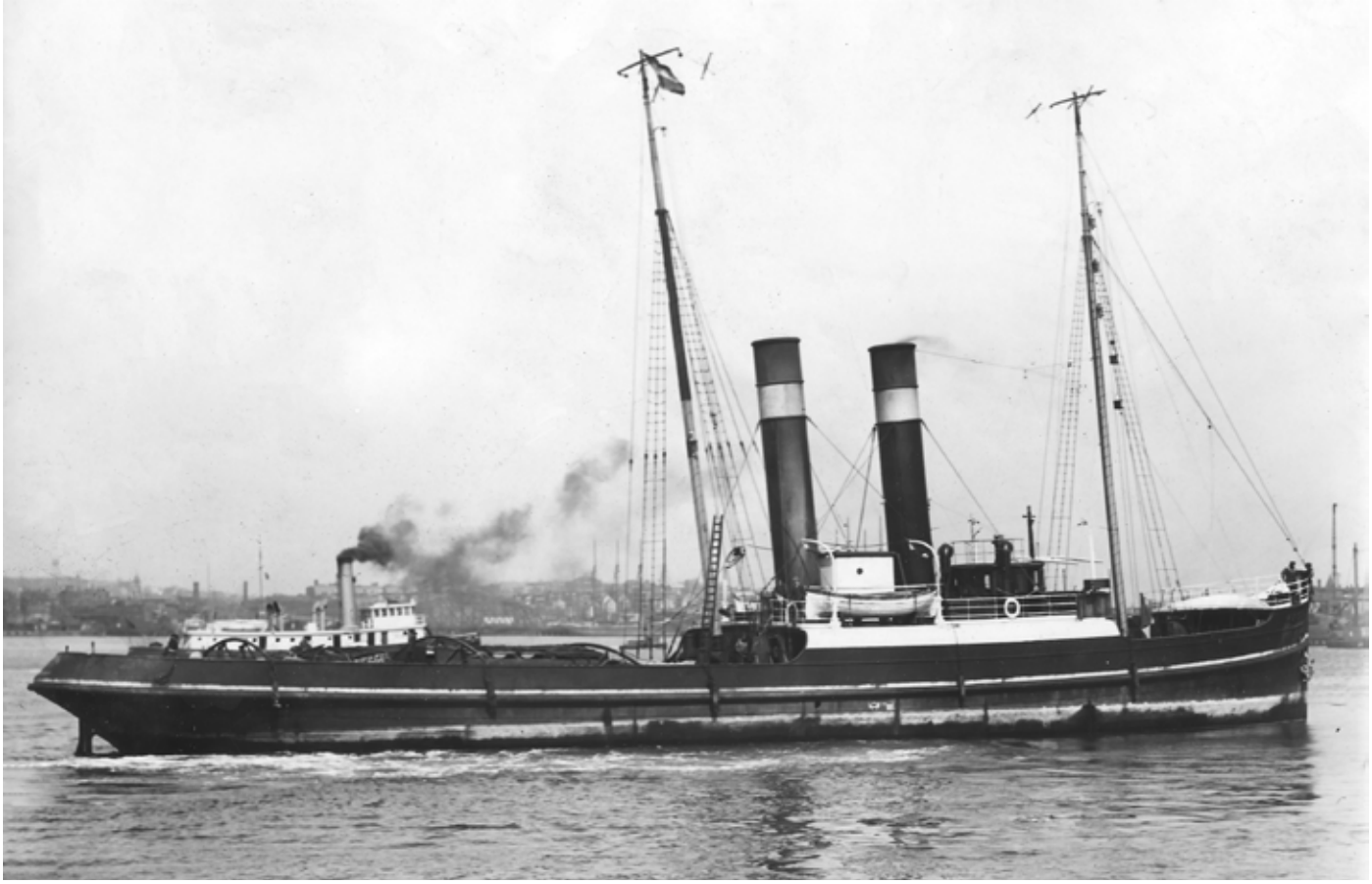


Non-propelled salvage vessel BUFFEL operated by the Nieuwe Bergings Maatschappij. She was built in 1891 by the Rotterdam shipyard Bonn & Mees - a name that for a long time has been active in heavy lifting using sheerlegs *photo: from Bergers van het eerste uur*

Svitzer – the early years

The first Svitzer fleet consisted of a flat-bottomed cutter, *Gammelholm*, bought from the Danish Navy, a sprit-sail rigged boat, *Trende Brodre*, and a large gig. They were strategically based at Kastrup, close to Copenhagen. Vessels to and from the Baltic Sea had to sail through the Sound in order to reach Copenhagen or continue into the Kattegat and this part of the Sound was known for its difficult waters.

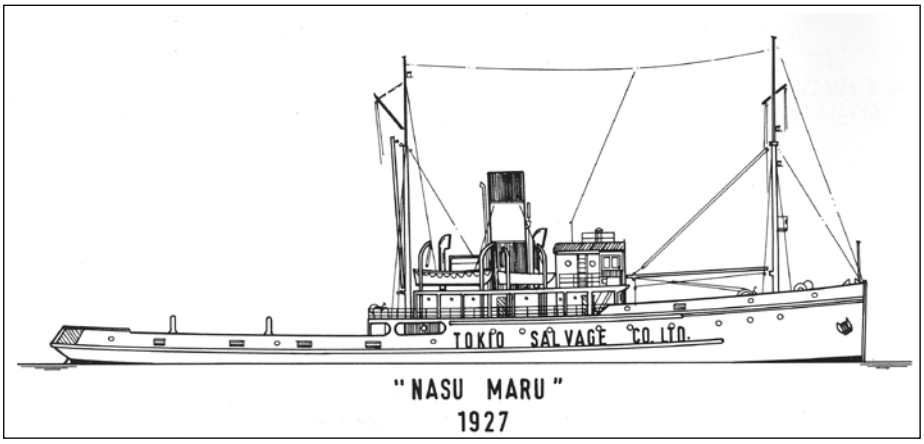
The terms of a salvage contract were negotiated between the captain of the ship and the salvage master. It was therefore crucial for the salvage company to be at the right location at the right time and for the salvage master to be able to make a quick and realistic assessment of the job to be done. This included estimating the value of the vessel and cargo and of course the work, equipment and manpower required to get the vessel safely to port. The gig was generally used to reach people quickly and transport the salvors between the shore and the casualty. The sprit-sailed rigged boat was used for drains or kedges while the cutter was used to



ROODE ZEE (2) was built in 1908 by J.& K. Smit, Kinderdijk. Dimensions were 52,43 x 9,37 x 5,31 m with a draft of 4,93 m. Triple expansion steam engine, output 1.250 ihp. In 1908 the tug beached and later sank in Montevideo due to a Pampero, a local storm. Raised, repaired and towed back to Rotterdam for reconstruction. Seen here in the USA in a photo dated 7-4-1930 *newspaper photo: Leslie R. Jones / Boston Herald*

lift, transfer cargo and tow. With its flat bottom, the cutter was ideal for salvage as it was possible to get close to the grounded vessels. The cutter also carried the necessary salvage equipment which mainly consisted of lifting gear, winches and later steam pumps. In 1839 the company acquired the cutter *Camilla*, about twice the size of *Gammelholm*.

In 1842 – only five years after August Siebe's first closed diving suit came on the market – Svitzer bought such a diving system and installed it on *Camilla*. In 1848 a replacement for Gammelholm was being built. Ida was another cutter but again larger. Master of *Isa* was capt. Julius Andersen. He had become a partner in the company and in 1847 became the company's salvage master. In 1853 another cutter – again bigger – followed. *Nancy* was built at Vestervik, Sweden. She was stationed at Frederikshaven, covering the Skagerrak and Kattegat. The first steamer was purchased second-hand in Kiel in 1854.



The salvage steamer NASU MARU dates from 1927. Built by Mitsubishi Buissan, Okayama. Dimensions 53.46 x 8,84 x 5,03 m. Draft 4,00 m. Triple expansion steam engine, output 1.200 ihp. 14 knots. Mined 12 July, 1945 west coast of Japan. Initial owner Tokyo Salvage which merged later with the Imperial salvage Co. into Nippon Salvage; an organisation set up by maritime insurance companies *drawing: David Hancox*

Løven was a paddle steamer built prior to 1835. Acquired for towage – for which she was not very well suited – this plan was soon dropped and she was employed primarily as a packet steamer. After four years she was scrapped. The first tug – a small one – was *Freja* built in England in 1844 as *Oliver*. It is not clear whether Svitzer actually owned the tug or had some dealings with the owner allowing Svitzer to use the tug on occasions around Copenhagen. In 1860 the company purchased the 1858-built steamer *F.H. af Chapman*. The vessel had sunk in Lake Vanern, Sweden. She was bought by Svitzer and raised. She was rebuilt as the **salvage steamer** *Skandinavien* and stationed at Frederikshavn. Fitted with derricks and all kinds of salvage gear, including a diving suit, she was also capable of towing. The success of this concept formed the basis for the large scale extension of activities in the 1860s.

Mr Svitzer used his experience in and knowledge of the timber trade in the valuation of wrecks. Also he was in the habit of purchasing salvaged goods cheap at auctions for onward selling. The timber trade remained the solid base for the company which was the

buffer for lean times in the high-risk / variable income business of salvage – a model used later by a variety of salvage companies thus spreading financial risks.

Salvage boom - the 1860s

That era was the beginning when many dedicated salvage companies started their business. No doubt this had to do with the development of steam driven vessels with their ever increasing cargo capacity – and thus more lucrative than small vessels. Ever powerful and bigger salvage steamers were built and the bigger operators send these away from their home ground. A big change came with the invention of shipboard wireless. No longer the salvors were dependent on shore based networks. In 1922 L. Smit & Co. fitted their first big tugs with wireless and put them on salvage station during the leaner winter years when distance towage contracts were fewer. The practice of putting tugs on salvage station extends until today, albeit on a different footing. With few dedicate tugs left on permanent salvage stations today tugs will be put on suitable positions in between the normal towage contracts.

Svitzer after WW2 continued its pre-war salvage work outside of Denmark. They also manned – jointly with Norsk Bergning – a seasonal salvage station at Greenland, with the Mediterranean Union in the Med and in Aden where their salvage steamer *Protector* remained on station.

The very first **German** tug ordered for exclusive use in ship salvage entered service in 1858 having been ordered by the Hamburg Association of Insurance Firms (**Verein Hamburger Assecuradeure**). The tug was on salvage station at Cuxhaven. At the other end of the world **Hongkong & Whampoa Dock Co**. had been active in local towing and occasional salvage since 1857. Nevertheless it was not until 1902 they built and stationed a fully equipped salvage tug for operations in the South China Sea. In **Sweden** the start of **Neptun Bergnings- och Dykeri AB Neptun** was in 1870. The salvage tugs of this company covered the Swedish south and east coast from Falsterbro in the south to the Finnish - Swedish border in the north. The company in 1943 was taken over by the Broström Group and continued as a subsidiary. Broström also owned the 1872 established **Gothenburg Towage Co**. As the name implies they provided towage services in and around the Port of Gothenburg. It was only in the early 1900's that they expanded their services with salvage. In 1921 the company name was changed to reflect their wider scope of work: **The Gothenburg Towage- and Salvage Co. Ltd**, generally known as Rödabolaget. In 1947 they joined forces with Neptun Salvage, Svitzer and Norsk Bjergning in the Mediterranean (Salvage) Union. Rödabolaget usually manned the Gibraltar station jointly with Neptun Salvage.

L. Smit & Co. has its origins back in 1843. While their tugs were regularly involved in simple refloating operations this was mainly inland on the route from sea to the Port of Rotterdam. The paddle tug *Wotan* of 1883 was a seagoing vessel but no salvage tug. Likewise the later oceangoing steam tugs were not salvage tugs a such. Smit's core business has always been distance towing supported by local port towage. In 1922 and following the introduction of the wireless radio they 'invented' the 'salvage station', a practice that has almost disappeared even though some ocean tugs in between jobs still are 'on salvage station' awaiting their next job. Wireless radio made the world aware of ships in trouble many days of sailing away. Potential salvors were alerted and could offer salvage contracts to ships in trouble. Smit's first deepsea tug on **salvage station** was *Roode Zee*. She was stationed at Horta, Fayal, in the Azores, near the shipping routes in the North Atlantic. For this occasions she was equipped with pumps, hoses and diving gear as well as some materials for emergency repairs. She carried two

The 750 hp salvage vessel SALVATOR was owned by the Nordischer Bergungs Verein
postcard: coll. Job van Eijk

TAI KOO operated by the Tai Koo Shipyard and later Hong Kong Salvage & Towage was designed in a Japanese prison camp during WW2. *photo: coll. Job van Eijk*

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radio officers that maintained a 24/7 watch on various channels. Also the tug's masts were lengthened to extend the 'listening' range. Later more tugs went on salvage station around the world. These tugs did have the necessary equipment to qualify as 'salvage tugs' being able to effect temporary repairs and tow the casualty to a safe port.

In the early days it were – like elsewhere – **local fishermen** that performed salvage operations even though these were mostly cases of lightering a vessel to refloat it or a cargo-recovery only job. After the opening of the Rotterdam Waterway in 1872 the ship's agency firm of **Dirkzwager** at Maassluis had made agreements with several of these fisherman regarding their involvement in Dirkzwager-related salvage work. In 1883, however, a collision between two freighters saw one of these delivered to a shipyard nearby in sinking condition while the only other way to save the second vessel was to put her aground in sinking condition. Had one or both sunk in the fairway Rotterdam effectively would have been closed off – no ocean ships coming or going for quite some time as there were no means for raising of vessels available. Rotterdam shipowners promoted the idea for a society for salvage in and around Rotterdam. They also asked the Government for an annual subsidy, which was rejected. Following another likewise sinking more lengthy discussions followed until in 1897 the Rotterdam Chamber of Commerce gave their OK.

The **Nieuwe Bergings Maatschappij** (New Salvage Company) was started. They in due course assembled the required equipment for more extended salvage including dedicated salvage vessels like the 288 grt 34-metre *Buffel* constructed in 1891. She was fitted with 14" pumps one of which was suitable for dredging operations. Two holds for recovered cargo and salvage equipment, two derricks and a bow horn capable of lifting 110 tonnes. A smaller version was *Stier*, built in 1899. Lifting capacity over the bow 20 tonnes. The company also operated sheerlegs as well as several other vessels all fitted with pumps and employed hard-hat divers. They operated along the Dutch coast and in the Waterway until 1923 when bought

FOUNDATION JOSEPHINE (ex SAMSONIA) seen backing down to LEICESTER to make the towing connection. This painting was intended for use as a book cover painting: Chris Mayger

by the Internationale Sleepdienst (ISM), a deepsea and harbour tug operator that wanted to expand its business into salvage. During its existence the NBM had refloated a minimum of 53 vessels, raised 35 including the recovery of their cargo, carried out 20 cargo-recovery operations where the casualties could not be salvaged and removed 9 large vessels by blasting. The figures are on the low side as documentation was not always complete.

In the Waterway and nearby coastal areas the NBM had ran into competition with **Tak Salvage**, established in 1880 by the fisherman Wilhelmus Adrianus van den Tak as an additional income to fishing. Before this, the Van den Taks had been involved in occasional salvage – and lifesaving - since before 1848. Van den Tak mainly worked with so-called 'blazers', a type of fishing vessel with a length of around 14 m. Lifting operations were carried out using two 'tjalk' type vessels fitted with hand-operated jackscrews. The lifting vessels were moored on both sides of the wreck. Wires were slung beneath the hull and attached to the jackscrew. Lifting was thus a very slow business. From this small beginning grew Tak's Berging, taken over by Smit and the Internationale Sleepdienst in 1923. The parent company had the capital to invest in more modern vessels and – important – heavy sheerlegs. later **Smit-Tak** and today Smit Salvage. Incidentally, van den Tak has used the 'blazer' design in a modernised form for a long time even into the 1970's and 80s. The last one had received a mid-life update and was lengthened in the mid70s. She remained in the fleet until 1990.

The roots of the German towage and salvage company **Bugsier** were laid in 1866 when the Vereinigte Bugsir Dampfschiffahrts Gesellschaft was established. although the Bugsier company as we knew it until some years ago was formed in 1921 following amalgamations. In 1889 the Leichter Gesellschaft was started which was intended for coastal cargo operations. Already in 1903 a company brochure stated 'salvage of grounded or sunken ships' as one of their business activities. For this they used outdated and reconstructed former lighters or small cargo vessels which were equipped with winches for lifting over the side. Tidal lifts were then used to bring casualties in shallow water for the final raising. In 1923 Bugsier purchased the **Nordischer Bergungs Verein** from its owners. This was a dedicated salvage company established in 1886 by the shipbroker H.H. Dahlström, Hamburg. Their working area initially was limited to the Baltic. In 1888 the NBV signed agreements with Svitzer and the Swedish Neptun which were active in the same area. Later they extended their operations into the Mediterranean (Marseille - *Em. Z. Svitzer*), Italy (*Salvatore*), the Red Sea and even China (Neptun – *Protector*). In 1923 the NBV

NISOS DELOS was one of a series of Bustler-class tugs with which Tsavliris started their salvage department *photo: Michael Lennon*

was purchased by Bugsier but continued for some time under its own name. NBV ended its agreements so former partners now became competitors.

In the Middle East the **Perim Coal Company** – established in 1882 - around 1900 entered the salvage business, perhaps as a result of their previously held agency business for Svitzer, Neptun and Norsk Bjergning. The Finska Bergnings Aktiebolaget Neptun (**Finnish Neptun)** operation was started in 1898. This also was a dedicated salvage company with salvage steamers ready in various ports. In Norway **Norsk Bjergning** was established in 1912.

Nippon Salvage was formed at Tokyo in 1934, but the heritage goes back to 1863 when **mr R. Yamashina** started a salvage company. In 1917 they, jointly with **Mitsubishi Dockyard'**s 1890-established salvage department and the 1906 established **S. Matsuda** salvage operation teamed up in **Nippon Kaiji Kogyo KK** (the Japan Marine Engineering & Salvage Co.). Seven years later, in 1924, **Teikoku Kaiji KK** (mr G. Hasegawa) joined and the company in 1924 was renamed **Teikoku Salvage Kabushiki Kaisha** – also known as the Imperial Salvage Co. The reason may have been the increased competition with two 'outsiders, the independent **Fukada Salvage** and **Yorigami Salvage**, both established in 1910. The final move was made in 1934 when the **Tokyo Salvage Co.** (established 1917) merged resulting in the Nippon Salvage Company. Tokyo Salvage itself was formed as a joint venture between four marine and fire insurance companies and Nippon Yusen Kaisha, one of the biggest Japanese shipping companies of the time. The shareholders in Teikoku Salvage included four marine and fire insurance companies as well as a number of the biggest Japanese merchant shipping companies. The operations of the two complemented each other as Teikoku did not work outside Japan. In 1968 one of the biggest tugs in the world was delivered to the company. *Koyo Maru* (2.061 grt) measured 85,540 / 78,00 x 14,00 x 7,00 m. Two Mitsubishi M.A.N. diesels were eared to a single propeller. Engine output was 9.000 bhp but listed as 11.000 ihp. Speed was 19,5 knots max., bollard pull 90 tonnes. Bunker capacity 1.360 tons.

Hongkong Salvage & Towage
The towage business was started in 1935 as a department of the shiprepair-business. Hongkong S&T was formed in September 1972 by amalgamation of the tugfleets of **Hongkong Whampoa Dockyard** and **Taikoo Dockyard & Engineering Co**.

John Swire established an import and export business in Liverpool in 1816. In 1866 the Eastern House of Butterfield & Swire was established in Shanghai. The China Navigation Company was formed in 1872 by, amongst others, the Swire family. In 1904 Swire started a towage and lighterage operation at Tientsin. In 1900 Taikoo Dockyard was started at Hongkong. The first Taikoo Dockyard tug was the *Wan Chun*, which was completed in 1907, at the same time as the new shipyard. Later, salvage tugs were added to the fleet, to support the Dockyard activities. By the end of the 1960's towage activities were re-directed towards dedicated shiphandling operations.

Hongkong & Whampoa Dock Co.Ltd. was established in 1863 by a number of Hongkong shipowners. Over the years the group purchased a number of dockyards, and, in 1902, built the salvage tug *Robert Cooke*, which became the first tug on salvage station in the South China Sea. It made sense for shipyards to operate salvage tugs in those years, as any casualty picked up was likely to end up in their drydocks. After the war one of the new shareholders in the company became Eric Moller, of the **Moller Group**. In 1950 he took control of Hongkong Whampoa. Tugs of Moller were then gradually entered into the Hongkong Whampoa fleet. In 1969 Moller sold their interest in Hongkong Whampoa to Hutchison International. In 1972 Hongkong Whampoa took over the empty shell of **Hongkong Salvage & Towage Co**., the Moller towage subsidiary that had operated from 1947-1971. The dockyard tugs were then transferred to Hongkong Salvage & Towage; at the same time shiphandling tugs were purchased.

Moller became involved in towage in approximately 1881, when Nils Moller became owner of the tug *Heron*. Moller was also involved with **Shanghai Towage**. **Moller's Towages** was established in 1935 by Eric Moller; they took over the former Moller & Co tugs. Their main operation was salvage, with small scale shiphandling at Shanghai and Hongkong. Moller's Towages moved to Hongkong in 1947. Moller before and after the war introduced several big tugs. Amongst these *Frosty Moller* (later Smit's *Gele Zee*), *Margaret Moller* (later *Abeille No. 10 - no. 30* after reconstruction as an offshore tug) and *Patricia Moller* (later *Golden Cape*). In 1952 they were re-styled to Hongkong Salvage & Towage. They concentrated on salvage and towage operations for Moller's scrap metal business. In 1971 Moller withdrew from salvage selling *Golden Cape* to Luzon Stevedoring and the salvage plant to *Selco*.

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,, 5357 Arrowebrook (Mr. W. B. Cottrell, A.C.I.I., Assistant Secretary).

In 1973, Hongkong Whampoa and Taikoo Dockyard joined hands in Hongkong United Dockyards. In 1975 the parent of Hongkong Whampoa collapsed. The banks ordered a merger with Hutchison International, to become **Hutchison Whampoa Ltd**. Hongkong Salvage & Towage thus became a subsidiary of Hutchison Whampoa and Swire Pacific.

By the 1970s the need for a shipyard to operate a salvage tug had gone, but HKST went on to have at least one powerful shiphandling tug available for emergency services at sea. But the big salvage tugs had gone.

Their immediate post-war Taikoo salvage tug was named *Tai Koo*, the third of that name. The name was the Chinese version of that of the British trading house of Butterfield and Swire. Loosely translated it meant 'ancient and great'. The name was an apt one in more than one way with this tug. Her design was developed by Taikoo Dockyard people imprisoned in the Japanese camps during World War 2. Being unaware of the great technological advances made, their design was based upon what they were familiar with. The design was for an oil-fuelled steamer. Her maximum design speed was 12,5 knots for which an oil consumption of 12 tons per day was calculated. Problem was she most of the time managed a maximum of 10,5 knots on 17 tons daily, severely limiting her range.She was delivered by the Taikoo yard in July, 1950. The tug was a heavy roller which only improved when she was towing a heavy object. In 1973 she was sold to Asia Marine Corp (Michael Batty), Panama, as *Audrey B*. Broken up in Bangkok in the mid 1970's.

In Canada it was **Foundation Maritime** – dating from 1928 – which entered the salvage business in 1930 which later operated primarily out of Halifax, Nova Scotia. Foundation Maritime slowly built up an impressive fleet of tugs and other vessels, with which they rescued countless vessels in distress off the Atlantic Coast. It was this period which was immortalized in two books by Farley Mowat, The Grey Seas Under and The Serpent's Coil. Foundation Maritime also played a part in the Second World War effort by building many of the *Park* class cargo vessels which were used by Canada to transport goods to the United Kingdom during the Second World War. An era came to an end when Foundation Maritime sold off its shipping interests in the late 1960s to focus solely on construction. Pre-war their tug *Foundation Franklin* ex *HMS Frisky*, ex *Gustavo Ipland* – a 1.200 ihp former British Navy tug dating from 1919 had made a name for herself. After WW2 it was the chartered Bustler-class *Foundation Josephine* (ex *Samsonia*) that hit the headlines during her 5-year stay with the company. She will be best associated with the rescue tow of the British freighter Leicester that had been mauled by a hurricane but refused to die. Foundation tugs found her and *Foundation Josephine* towed her to safety

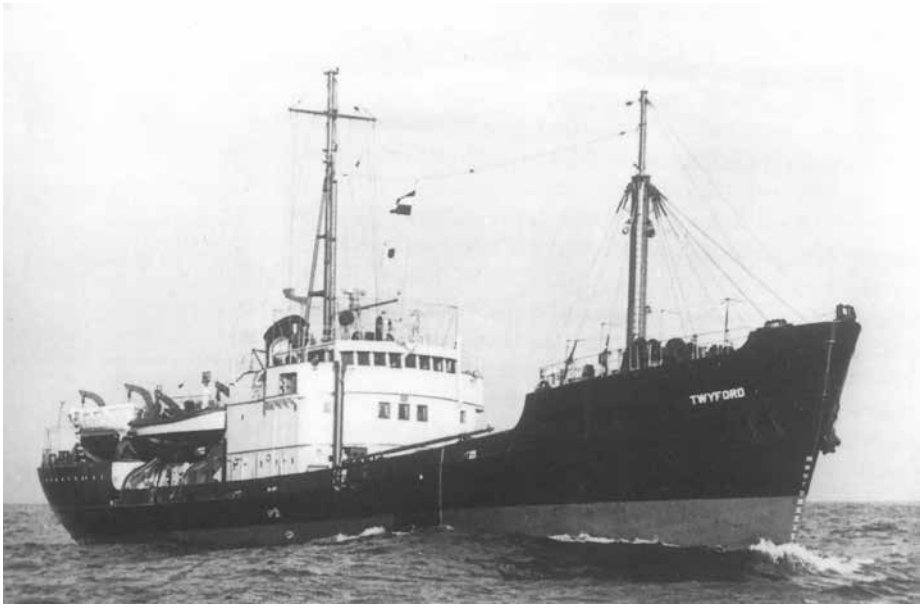
HARM's floating sheerlegs lifting a sunken inland waters vessel at Dordrecht
photo: Dordrecht City Archives

only to be hit by another hurricane. *Leicester* stranded but so did *Foundation Josephine* and the company was forced to carry out a LOF on their own tug. Both vessels survived.

A well-known salvage company is the Greek **Tsavliris Salvage** established in 1964. There tugs ar almost exclusively working on salvage jobs. To this end they have used the biggest salvage tugs in the world. A lot of their work around the world is carried out, however, using locally chartered equipment. Another salvor working this way is U.S.-based Joseph Farrell's **Resolve Marine** established in 1980. The company has a presence in several countries around the world with stores with salvage equipment in strategic locations.
To list all of the dedicated salvage operators would take a few more pages but some have to be mentioned. In Italy the **SoRiMa** - Societa Ricuperi Marittimi run by Giovanni Quaglia was a salvage-only company. While they were involved in regular salvage work their main interest and specialty was cargo recovery – the more valuable cargo also indicated as treasure. The company employed several salvage vessels equipped with heavy derricks and diving gear like observation bells. They were a secretly bunch and the general public learned of their existence through the work they carried out in the salvage of gold from the liner *Egypt*. The company operated until about 1980.

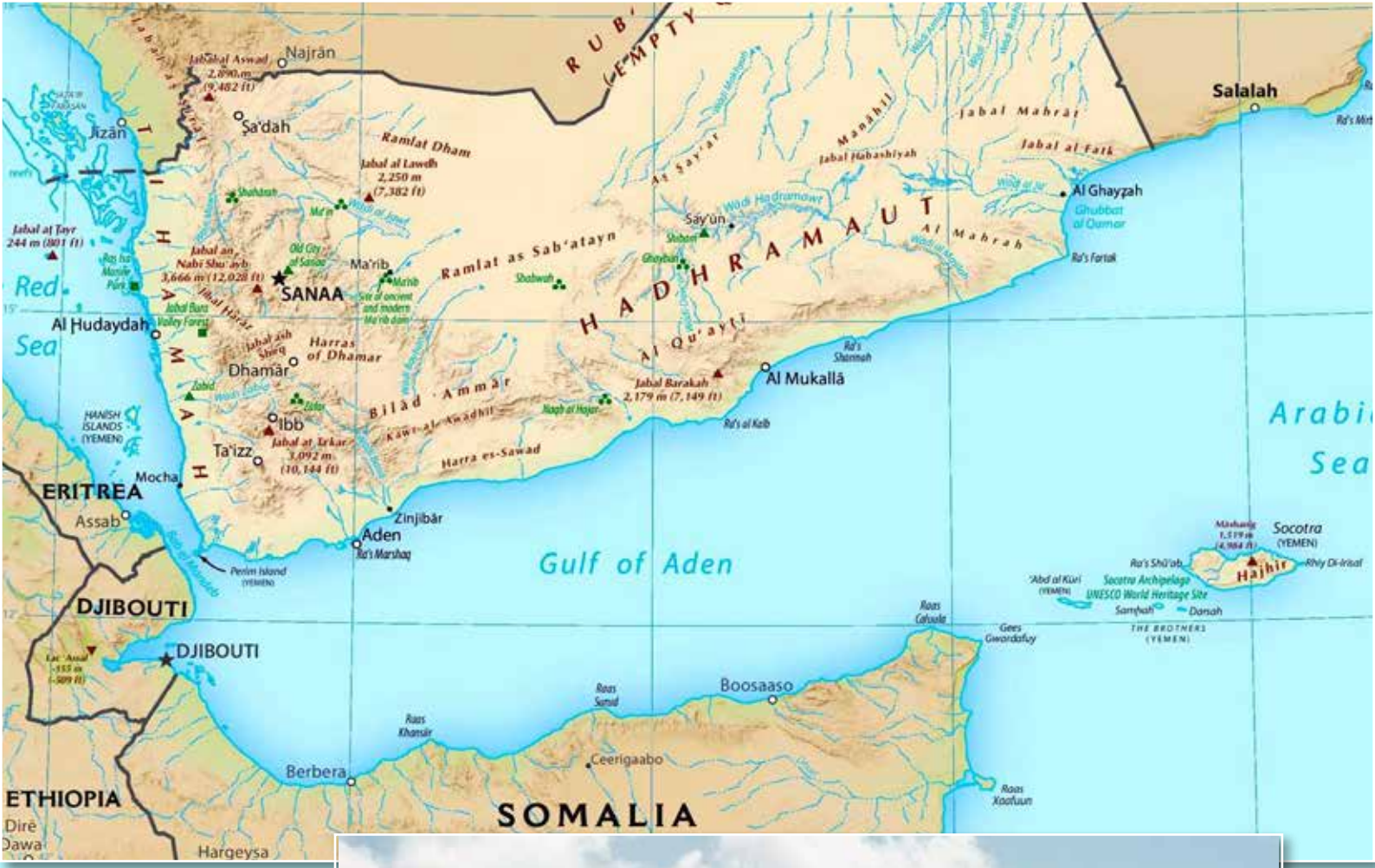
Engaged in the same type of work was **Risdon Beazley Marine**. The company had been established prior to WW2 but expanded enormously during the War as they were appointed manager for a large fleet of British salvage vessels. As such the RB managed vessels followed the troop during the invasion clearing the harbours and make them ready to receive military supply ships. After the war they did a lot of maintenance work involving in admiralty ports as well as the occasional regular salvage. But a section of their fleet was dedicated to cargo recovery as far as valuable metals were concerned. Eventually they merged with Ulrich **Harms Bergung**, a dedicated salvage company established in the late 1960s.wth a relatively short but eventful life. They modernised salvage (lifting) in such a way that the Smit company felt the need to purchase the companies.

A third company involved in this kind of cargo recovery is **Deep Water Recovery & Exploration**. The story began in 1975 when ms Moya Gerrard obtained a summer job on the island of Foula. Here she met two divers working the wreck of the White Star liner *Oceanic* that had hit a nearby reef and sank. These divers were recovering valuable metals in a primitive way. One time Moya went with the divers and she never looked back. Alec and Moya Crawford worked a lot of wrecks. Alec being the technical man and inventor while Moya handled the paperwork although she also pitched in on board the salvage vessel. The company and its equipment were run on a shoestring budget giving them an advantage over the bigger operators with much more overhead. In 1992 they succeeded in recovering copper bars from the wreck of *Francois Vieljeux* at a depth of 1.250 m, tripling the world record for commercial cargo recovery.



TWYFORD - one of Risdon Beazley's cargo-recovery vessels *photo: coll. Job van Eijk*

1958: the tanker AFRICAN QUEEN broke in half while in heavy seas off Ocean City, MD. *Photo: coll. Job van Eijk*



Gulf of Aden
map: coll. Kees Pronk

SMITWIJS ROTTERDAM at Aden collecting extra equipment for the HYUNDAI FORTUNE salvage
photo: coll. Kees Pronk

A closer look at the fire
photo: helicrew DE ZEVEN PROVINCIËN

The “Hyundai Fortune” case

On 21 March, 2006, the container carrier Hyundai Fortune suffered a huge explosion in the aft holds. With the blaze out of control the crew abandoned ship. This is the story of the subsequent salvage operation.

by capt. Kees Pronk

The scene upon arrival of the Dutch warship DE ZEVEN PROVINCIËN
photo: RIB-crew DE ZEVEN PROVINCIËN

RIB alongside casualty evacuating HYUNDAI FORTUNE’s crew photo: crew DE ZEVEN PROVINCIËN

On 15 March 2006, the South Korean container vessel *Hyundai Fortune* departs Singapore for Europe, carrying 5.130 containers. Her destination is Rotterdam routed via the Suez Canal. On 20 March, *Hyundai Fortune* enters the Gulf of Aden from the Indian Ocean.

A day later at 11.55 hrs in position 120 nm east of Aden a huge explosion occurs below deck in the aft container hold. Shortly after the initial explosion a number of containers - stowed above deck on the aft container hold as hazardous cargo - also explode: they were laden with fireworks originating from China. Many of the containers are hurled into the air and end up in the water, while others end up on and in front of the accommodation. A fierce fire starts with more explosions following and a further spreading of the fire. The 2nd Officer - on duty in the wheelhouse - is injured by flying glass.

At 12.05 hours, the Master of *Hyundai Fortune* sends out a distress message. The Dutch naval frigate *De Zeven Provinciën* is patrolling the area and immediately sends a helicopter to evacuate the injured officer while heading for the casualty’s position at speed.

Meanwhile the crew continued to fight the blaze – not without danger as more explosions follow and the fire spreads rapidly. The crew is fighting a losing battle and at 14.40 hrs the Master decides to abandon ship. *De Zeven Provinciën* has arrived on the scene and launches two RIB’s manned by experienced sailors. The unfortunate South Koreans are taken off the burning ship in small groups, and by 15:30 hours the entire *Hyundai Fortune* crew is on board the Dutch frigate.

On 21 March **Wijsmuller Salvage** signs a Lloyd’s Open Form contract with the owner of the casualty. A salvage team from Wijsmuller Salvage has been mobilised and flies from Schiphol Airport to Aden in Yemen. In Aden, the Yemeni harbour tug ***Wadi Hassan*** is chartered for USD 1.500 US per hour. As soon as the salvage team is on board the tug departs for the location of *Hyundai Fortune*. In the morning of 23 March Wadi Hassan arrives on location where the container carrier is still violently burning and the salvage crew starts to extinguishing the fire.

Wijsmuller Salvage meanwhile has also chartered the ocean-going salvage tug ***Smitwijs Rotterdam*** operated by **SmitWijs Towage CV**. *Smitwijs Rotterdam* is at that moment in the Red Sea en route Las Palmas to Singapore for another towage assignment. I am the Master of this fine tug and as soon as I receive the message from SmitWijs Towage, my salvage heart starts beating faster and I order the chief engineer to bring the main engines up to full power. With a speed of 16 knots *Smitwijs Rotterdam* heads for the action.

23 March
In the afternoon we receive a request from Wijsmuller Salvage to make a

Floating containers and debris – a danger to shipping
photo: helicrew DE ZEVEN PROVINCIËN

The burning HYUNDAI FORTUNE
photo: crew DE ZEVEN PROVINCIËN

SMIT ROTTERDAM and WADI HASSAN alongside the still-burning container vessel. Towing gear still attached to SMIT ROTTERDAM as periodically the casualty drifted too close to the coast *photo: coll. Kees Pronk*

RAS ISA arriving *photo: coll. Kees Pronk*

Towing HYUNDAI FORTUNE away from the pirate coast, WADI HASSAN continuing the firefighting *photo: coll. Kees Pronk*

call at Aden to load additional salvage equipment and provisions. A few hours later *Smitwijs Rotterdam* again departs Aden for the location of *Hyundai Fortune*.

24 March

Late in the evening the bright glow of the burning vessel can be seen on the horizon. Shortly before midnight *Smitwijs Rotterdam* arrives on location. *Hyundai Fortune* is a dead ship, no power to the winches and no light on deck. Because of the darkness on the forecastle, it is decided to wait until daylight the following morning to establish a tow connection.

25 March

With the first rays of daylight the connection between *Smitwijs Rotterdam* and the bow of *Hyundai Fortune* is quickly established. After a VHF consultation with the Wijsmuller salvage master it is decided to tow *Hyundai Fortune* in a northerly direction. The reason for this is that the vessel is drifting too close to the Somali coast and an increasing risk of piracy - Somali pirates often attack near the Somali coast. *Smitwijs Rotterdam* will be towing at a reduced speed so the firefighting operation can continue from *Wadi Hassan*. With 14 Wijsmuller salvors and 10 Yemeni crew living aboard *Wadi Hassan* in cramped quarters there are not enough bunks to sleep in and not enough food and water for a long stay at sea.

SMITWIJS ROTTERDAM - RAS ISA - WADI HASSAN alongside he casualty *photo: coll. Kees Pronk*

Wijsmuller Salvage meanwhile has sent another big shipment of salvage equipment to Aden by chartered aircraft. On arrival the equipment is loaded on board the Yemeni offshore support tug ***Ras Isa***. This vessel is less suitable for the job for which it has been chartered by Wijsmuller Salvage but unfortunately there is not much choice when it comes to boats-for-hire at Aden. In these circumstances the owner of *Ras Isa* has negotiated a good deal!

Upon arrival on the scene *Ras Isa* is instructed to take on board the salvage crew, moor alongside *Hyundai Fortune* and serve as a base to operate from for the salvors during the salvage. This upsets the master as well as leaving him confused to the extent that he refuses to moor his ship alongside the burning vessel. This puts the Wijsmuller salvage master in a difficult position especially when he is informed the crane of *Ras Isa* is defect and anyway too short to reach the deck of *Hyundai Fortune*. A serious logistical setback for the salvage master; his salvage plan collapses. In the wheelhouse of *Smitwijs Rotterdam* I am following the debate on the VHF. I suggest to the salvage master that his team and the salvage equipment from *Ras Isa* be taken aboard *Smitwijs Rotterdam* after which we will serve as a base alongside the casualty. After a brief consideration on his part the salvage master accepts my offer with great relief.

26 March

During the night, the intensity of the fire decreases significantly. With enough distance from the Somali coast the transport comes to a stop. With *Smitwijs Rotterdam* still connected to *Hyundai Fortune* the tug manoeuvres around and comes alongside the casualty. The captain of *Ras Isa* is eager to moor alongside *Smitwijs Rotterdam* and in the process destroys several metres of our railing. All firefighting and salvage equipment is transferred to our towing deck. The airfreight containers with the firefighting and salvage equipment fit just below the towing beams so they do not interfere with the free movement of the tow wire over the towing beams. The fourteen Wijsmuller salvors transfer to *Smitwijs Rotterdam* – we have plenty of space and berths. We also have plenty of provisions on board and a very good cook, although with a more than doubled crew he is going to be very busy. That problem is tackled by appointing one of our crew as assistant cook. The salvors are both relieved and happy to leave the tiny *Wadi Hassan* with its uncomfortable accommodation and halal food. The good deal that the owner of *Ras Isa* had struck with Wijsmuller Salvage in the end turns out to be not so good and not long-lasting. As soon as she is free of her cargo she is declared off-charter and returns to Aden.

The reason the connection between *Smitwijs Rotterdam* and *Hyundai Fortune* remains in place while we are moored side by side is that a) the tow line acts as an aft mooring line but more important b) the prevailing current in the Gulf of Aden keeps pushing us back towards the Somali coast. Every couple of days *Smitwijs Rotterdam* has to tow *Hyundai Fortune* a safe distance away from the Somali coast. After that we go back to being a hotel and work base.

27 March

In the morning the fire is almost extinguished. Only some small local fires in the cargo hold aft of the accommodation need to be still to be extinguished. There are also some isolated fires in containers on deck in front of the accommodation. These fires are being dealt with by the Wijsmuller fire brigade. With *Smitwijs Rotterdam* alongside Hyundai Fortune excellent support can be provided to the salvors. The tug's port-side crane can easily reach Hyundai Fortune's main deck. Several fire hoses are connected to the manifold of the salvage pump on our foredeck and these hoses lead up to the casualty. Compressed air hoses and electrical cables also lead up from the tug to support the salvors.

Once the fire is brought under control, the next phase of the salvage operation begins. *Hyundai Fortune* will have to be towed to an emergency port where the undamaged containers will be discharged. The devastation caused by the fire and explosion must also be dealt with. Dangerously unbalanced, burnt and destroyed containers can cause problems during inspection for

Burned containers still stacked - note deformation of hull plating. Now you see 'em . . . *photo: coll. Kees Pronk*

Now you don't . . . The container stack being pulled overboard by WADI HASSAN. The quickest and safest way to remove a dangerous situation *photo: coll. Kees Pronk*

Salvors removing some of the burned and deformed containers hanging by a thread - a threat to safety *photo: coll. Kees Pronk*

entry into an emergency port. It is going to take several days to clear that debris. This time is available because the Yemeni authorities have not yet given *Hyundai Fortune* permission to leave their waters.

2 April

A few days after the fire has been brought under control *Wadi Hassan* is released. Her daily rate is 36.000 US dollars a day which is a very high rate for such a small tug – a clever deal by the Yemenis. This daily rate is considerably higher than the 24.000 US dollars a day for *Smitwijs Rotterdam*. This daily rate is not negotiable, it is a fixed rate according to a specific clause in the Lloyd's Open Form contract (SCOPIC clause). The replacement for *Wadi Hassan* is the Dutch rotor tug *RT Zoë*, a brand new shiphandling tug on her delivery voyage from Singapore to the Netherlands.

3 April

A few hours after her arrival *RT Zoë* is required to perform some work under the bow of *Hyundai Fortune*. The manoeuvre, however, ends in drama when the tug's wheelhouse collides hard with *Hyundai Fortune*'s starboard anchor which causes extensive damage. The tug is brought alongside and our crew assists cleaning up the damage as much as possible and making temporary repairs so *RT Zoë* can reach the nearest emergency port. The replacement tug *RT Antonie* arrives a few days later. She is a brand new sister ship of the *RT Zoë*.

On shore Wijsmuller Salvage, the owner of *Hyundai Fortune* and the insurance company are under pressure to find an emergency port for *Hyundai Fortune* where the containers may be discharged and then transported to Rotterdam by another container ship. Eventually, the emergency port of choice is Salalah - a port on the south coast of Oman. There are also tough negotiations with the Yemeni authorities to get permission to leave their waters. Tens of thousands of dollars are paid in kickbacks.

8 April

is the day the Yemeni authorities grant permission to leave their waters. Our main engines are started and *Smitwijs Rotterdam* sets off with her tow to Salalah. I expect *Hyundai Fortune* to start yawing as soon as she gets some speed, and so she does. For the powerful and heavy *Smitwijs Rotterdam* this is not a problem.

Every day during the tow to Salalah the salvors work aboard *Hyundai Fortune* clearing more debris and prepare the vessel for inspection by the Omani authorities – a necessity before she can enter Salalah port. Each morning *RT Antonie* comes alongside to ferry the salvage crew - packed with lunch boxes and drinks – to the tow. In late afternoon this is reversed when they return to our tug for a well-earned shower, a cold beer and a proper meal.

Change of tugs

When departing for Salalah it was already clear that we would not have enough time to complete the tow to Salalah. We have to be in Singapore by 24 April for our next assignment. A replacement tug has to be chartered for the remainder of the voyage. This is much to the regret of the Wijsmuller salvors and our crew as the mutual cooperation is very good. This, and the hospitality of the crew of *Smitwijs Rotterdam* is greatly appreciated by the salvors.

9 April

Word comes from Wijsmuller Salvage that the Sri Lankan tug ***Mahanuwara*** is hired to continue the tow. For most of us she is a familiar vessel. It is the former tug / supply vessel *Smit-Lloyd 114* once owned by Smit-Lloyd BV – a former subsidiary of the large Smit International Group. The Wijsmuller salvors are not happy with the replacement tug having previously worked with her during another salvage operation. They

Start of the tow to Salalah *photo: coll. Kees Pronk*

RT ANTONIE arriving on the scene *photo: coll. Kees Pronk*

Containers were blown on top of the funnel and over the wheelhouse *photo: coll. Kees Pronk*

Fire damage: the bridge wing *photo: coll. Kees Pronk*

Fire damage: the captain's cabin *photo: coll. Kees Pronk*

MAHANUARA - ex SMIT-LLOYD 114 - arriving to take over the tow

photo: coll. Kees Pronk

Capt. Pronk seems satisfied with the progress *photo: coll. Kees Pronk*

complain that the accommodation is too cramped and dirty with little or no air conditioning and infested with cockroaches. In addition, *Mahanuwara* is considered to be underweight for a tug and is underpowered for an unwieldy tow like Hyundai Fortune.

12 April

During the morning we rendezvous with *Mahanuwara*. *RT Antonie* hooks up the stern of the casualty to act as a brake and stopping the tow. Smitwijs Rotterdam comes alongside Hyundai Fortune for the last time. We disconnect and haul our gear back on board. Next, *Mahanuwara* comes alongside and we transfer the Wijsmuller salvage equipment. The Wijsmuller salvage master and myself visit *Mahanuwara* to provide the captain with information and explanations about *Hyundai Fortune*. This turns out to be quite necessary as the captain of *Mahanuwara* has a different idea of towing compared to the more accepted ways. After some discussion and more questions on our part it transpires that he has never towed a vessel as large as *Hyundai Fortune*. In the afternoon, a new towing connection is prepared on the bow of *Hyundai Fortune* for *Mahanuwara*. Some of the towing equipment is supplied by *Smitwijs Rotterdam*, as much of the towing equipment on board *Mahanuwara* is substandard.

Daily service by RT ANTONIE - ferrying the salvage crew home to SMITWIJS ROTTERDAM after a day's hard work *photo: coll. Kees Pronk*

13 April

As dawn breaks *Mahanuwara* manoeuvres under the bow of *Hyundai Fortune*. The towing pennant which was rigged the day before is pulled aboard *Mahanuwara* and connected to her tow wire. With a bit of guidance from the salvage master and myself *Mahanuwara* is ready to go on her own. Once she has paid out her towing wire and is on course it is time for the Wijsmuller salvage team to leave us. We manoeuvre alongside *Mahanuwara* and transfer the salvors. Most of our crew is on deck to waive goodbye. After a final gloomy look back from the salvage master we part company. For a while I keep hanging around to watch the transport slowly getting underway. I expect Hyundai Fortune will give *Mahanuwara* quite a bit of a headache in controlling her.

Because *Mahanuwara* has significantly less mass in the water compared to us and has less engine output therefore she also has much less control over the tow. The yawing starts as soon as the transport gains headway and some speed through the water is made. *Hyundai Fortune* clearly wants to go in a different direction and *Mahanuwara* cannot correct this quickly enough. This is also reflected in the overall speed of the transport. *Smitwijs Rotterdam* made an average speed of 7,5 knots but *Mahanuwara* is down to an average of only 2,5 knots. Having made this observation *Smitwijs Rotterdam* sets sail full speed for Singapore.

After more than a week of towing *Hyundai Fortune* finally arrived in Salalah. 2.249 undamaged containers were discharged for onward transportation. The container carrier was then towed to Dubai Drydocks in the United Arab Emirates to discharge the remaining damaged containers, other debris and scrap steel. Emergency repairs were carried out to make the vessel seaworthy for further towage. Eventually the vessel was sold to a new owner, renamed *Fortune* and towed to China for final repairs and rebuilding.

The vessel returned to service as *MSC Fortunate* in 2008 after 5.000 tonnes of steel was replaced and a complete new

Waving goodbye to the Wijsmuller Salvage crew *photo: coll. Kees Pronk*

Salvage gear being transferred to MAHANUARA
photo: coll. Kees Pronk

HYUNDAY FORTUNE returned reconstructed as FORTUNATE
photo: coll. Kees Pronk

MAHANUARA connecting *photo: coll. Kees Pronk*

Who is going where? MAHANUARA and HYUNDAI FORTUNE having a difference of opinion *photo: coll. Kees Pronk*

accommodation installed. The total cost of the salvage, loss of cargo and repairs to the vessel was around 800 million US dollars. In 2018 the former *Hyundai Fortune* was scrapped in India under the name *Fortunate*.

Subsequent investigations have revealed that the first explosion occurred below deck in a container holding hazardous petrochemicals that had been loaded in the container hold. According to the IMDG Code, hazardous substances should never be loaded in the hold but must loaded above deck. The shipper of the petrochemicals had deliberately declared an incorrect content for the container in order to save shipment costs. The severe explosion below deck caused a chain reaction in which the containers loaded with fireworks above deck also exploded.

Vessels involved

Hyundai Fortune

Registered with DMF International S.A., operated by Hyundai Merchant Marine. Panama flag. Built 1996 by Hyundai Heavy Idustries, Ulsan. 64.054 GT. 274,66 x 40,00 m. 5.551 TEU capacity. Main engine 1x B&W output 74.380 bhp. Max speed 25,6 knots.

ZrMs De Zeven Provinciën

This air-defence / command centre frigate is one of four sisters in service with the Royal Dutch Navy. Keel laid 1 September, 1998; Launched 8 April, 2000; Operational: 26 April, 2002. The name (The Seven Provinces) comes from the union of the seven rebellious northern regions of the Low Countries. This is known as the Treaty of Utrecht. From this the Republic of the Seven United Netherlands was formed. Within this Republic the seven regions were indicated as 'provinces'. This is the 8th warship of this name. 144 x 17 m. Draft 7 m. Main engines output: 13.600 hp diesels, 52.300 hp gas turbines. Speed 30 knots.

Wadi Hassan

Owned by the Yemen Port Authority and operating at Aden. Built in 2002 by Damen Shipyards jointly with *sister Wadi Haseeb*.4.827 bhp stern drive tug fitted with Rolls Royce thrusters.70 tbp. 30,8 x 10,2 m. Main engines 2x Wärtsilä 6L-26.

Smit Rotterdam

Built 1975 by Shipyard De Merwede, Hardinxveld, The Netherlands, for account of Smit International Ocean Towage, Rotterdam. 2.273 GT. 2x Stork-Werkspoor 9TM-410 total output 13.500 bhp. 176 tbp. 74,83 / 65,00 x 15,30 (mld). Draft 6,80 m. 1991 transferred to SmitWijs Ocean Towage as *SmitWijs Rotterdam*. 2007 sold to Svitzer Ocean Towage as *Rotterdam*. 2013 sold to shipbreakers – registered under Rosella Maritime Co., Panama as *Global Destiny*, for towage purposes. Soon after beached and scrapped.

Ras Isa

Owned by General Ports & Marine, Hodeidah, Yemen. Built 1995 by Astilleros Zamakona. 884 GT. 46,1 x 13,5 m. Main engines 2x Caterpillar 3608-TA, total output 6.696 hp. 85 tbp. Speed 14 knots. Twin c/p propellers.

Mahanuara

Owned by Sri Lanka Shipping Co. Built 1975 by H.H. Bodewes, Millingen, The Netherlands, as *Smit-Lloyd 114* for account of Smit-Lloyd, Rotterdam. Main engines 2x Werkspoor 6TM-410 total output 8.000 bhp. 100 tbp. 1.293 GT. 63,89 / 60,56 x 13,3 m. Draft 5,06 m. 15 knots. Twin fpp in nozzles.

Postscript

Both Smit International and Bureau Wijsmuller for many years had their own ocean towage division. Ocean towage and salvage was the core business of the companies. In the late 1980s and early 1990s a deteriorating ocean towage market combined with competition by semi-submersible project cargo vessels and anchor handling tug / supply vessels forced them to seek other sources of income and they invested heavily in other offshore markets. Those investments turned out wrong. With mounting debts and looking for a way out Smit and Wijsmuller in 1991 merged their ocean towage activities in SmitWijs Towage CV. A large mortgage was taken on the tugs in the new company.

In 2001 Wijsmuller was taken over by Svitzer which then was 50% owner of SmitWijs Towage CV. In 2007 Smit International sold their 50% share to Svitzer and the new company name became Svitzer Ocean Towage BV. Both companies are history now. Svitzer Ocean Towage CV ceased activities in 2013. Smit International was taken over by Boskalis in 2009. A sad ending for two remarkable companies.

I have worked on the Wijsmuller tugs from 1965 until 1970. In 1971 I joined Smit International and remained with their beautiful tugs until my retirement from Svitzer Ocean Towage BV in 2007.

HYUNDAY FORTUNE wanting to go in a different direction, MAHANUARA struggling to keep the tow under control *photo: coll. Kees Pronk*

Powerful towage with zero emissions.

Pictured here:
RSD-E Tug 2513

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Iconic salvage tugs exit

Over times there have been more than a few big salvage tugs that hit the headlines. This year the last two representatives of the post-WW2 generation were reduced to scrap metal.

by Job van Eijk

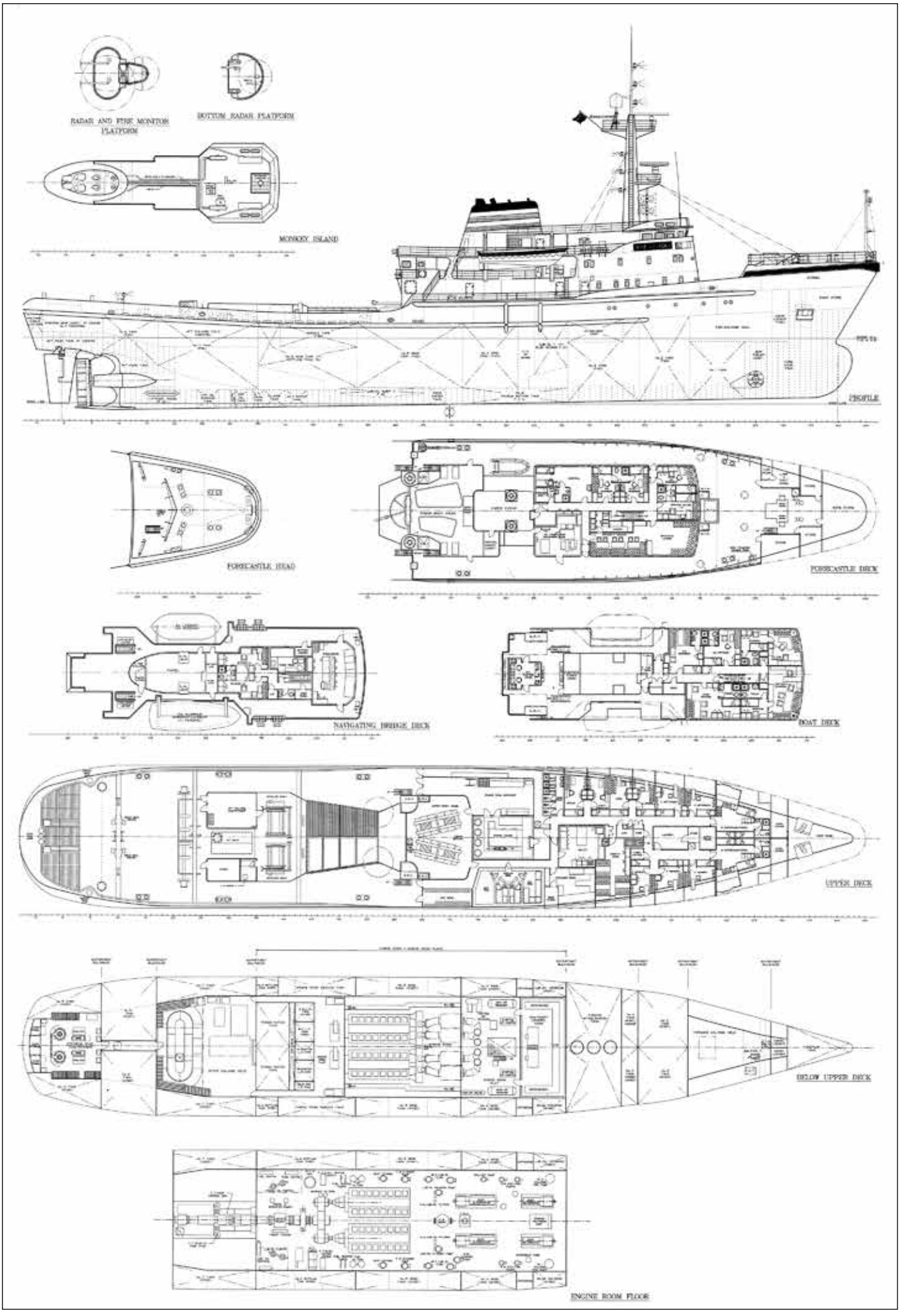
The South-African *John Ross* and the French *Abeille Flandre* have now gone at an age only a few operational vessels reach, respectively 48 and 45 years. They were the last of the salvage tugs from the 60s and 70s. The end of an era.

The reason for these tug's initial conception were different. ***S.A. John Ross*** and her slightly older sister ***S.A. Wolraad Woltemade*** were ordered after an increasing number of tanker disasters had happened off the South African coast. The tanker *Wafra* suffered an engine room flooding and was adrift off Cape Agulhas. Attempts by passers-by to take her in tow failed and the 49.762 dwt tanker ran aground amidst a heavy swell. The date was 27 April, 1971. Her hull was breached and she spewed some 10.000 tonnes of oil creating a slick of some 48 x 8 km that eventually landed on the coast. The German Bugsier-owned salvage tug *Oceanic* - one of the most powerful in the world at 13.200 bhp - happened to be nearby but even so it took several refloating attempts over a four-day period to free the tanker on 8 March. Fearing the crippled tanker would break up the tow was ordered away from the coast. 320 km south of Cape Agulhas the tanker was cut loose to be sunk. Missiles fired by South African jets set the tanker ablaze and slowly settling in the water but refusing to sink. A few days later on 12 March, 1971, the tanker's death was accomplished by a series of depth charges dropped from the air. Although the remaining cargo partly burned the total cargo of 50.000 tonnes was lost one way or the other having an environmental impact.

At the time the second Suez crisis had initiated the construction of ever-bigger tankers taking the long route via the Cape. And the salvage tugs that used Cape Town as their base in between towing jobs also had dried up with the more powerful vessels finding lucrative work in the exploding offshore oil business.

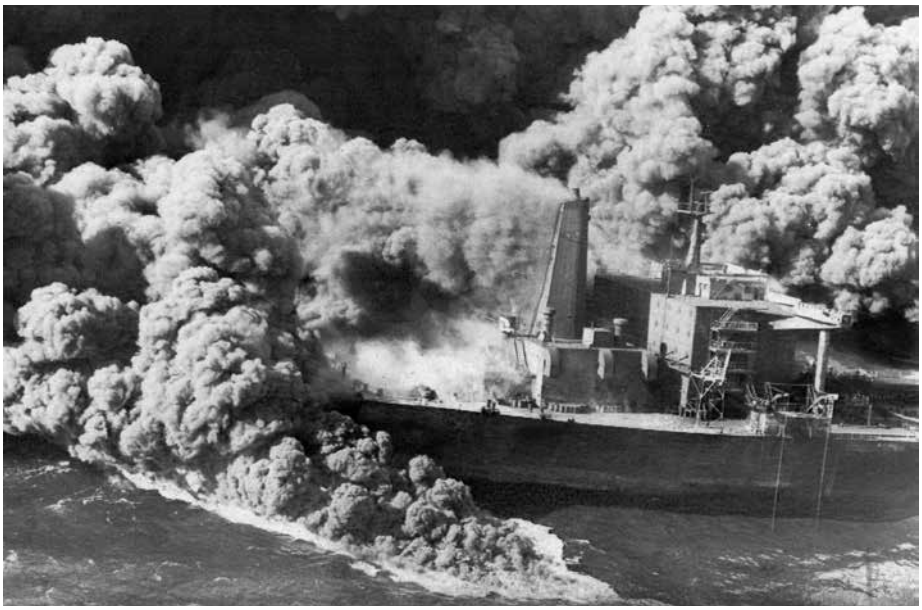
S.A. WOLRAAD WOLTEMADE was actually the first of the sisters delivered. Seen here running trials
photo: A.G. Ingram Ltd, courtesy Robb Caledon Shipyard

S.A. JOHN ROSS in Safmarine colours. The aft mast was later removed to improve stability. The derrick was replaced by a hydraulic crane. Call sign in this photograph is ZTOW which was later changed to ZTUG, her sistere's original call sign
photo: Skyfotos coll. Job van Eijk



General arrangement SMIT AMANDLA later S.A. AMANDLA (ex JOHN ROSS, ex S.A. JOHN ROSS) *drawing: Smit International*

SMIT AMANDLA - ex JOHN ROSS - supplying WOLRAAD WOLTEMADE which was towing the FPSO SANHA from Japan to Angola in 2005. In the original set-up the two sisters regularly changed positions (ETV service or distance towing) *photo: Albert Chipps*



The CASTILLO DE BELVER on fire off the South African coast in 1983
newspaper clipping: SundayTelegraph 8-8-1983 - coll. Job van Eijk

The *Wafra*-case was the starting point for the case of a permanent powerful salvage tug on station. The case for salvage tugs was discussed for the first time in a board meeting of **Safmarine**, the big South African shipping company - at the request of the South African Government - on 23 April, 1971. The design was adapted to the expected work – the tugs were to operate as salvage tugs as well as in long-distance commercial towing – and with the special circumstances of the waters around South Africa. The result was the most powerful tug in the world with an output of 19.200 bhp on a single propeller, a length of 94,62 m and a speed of 21,25 knots. An intriguing fact was the matter of the call signs, ZTUG and ZTOW. Over the years the tugs flew – mainly due to political matters – a variety of flags hopping back and forth in and out of South African registry. Nevertheless the call signs remained reserved for the twins. When eventually the S.A. Government's Department of Transport reduced the contractual agreement to a single tug the ZTUG call sign was switched to *Smit Amandla* (*John Ross*). Another quirk that found its origins in Safmarine but had found its way into the design and manning of the **Saftug** sisters was the decorum upheld in Safmarine liners, complete with white-gloved stewards and silver platters in the officer's messroom. The first master of the lead tug - *Wolraad Woltemade* - was Capt. Klaus Lackmann, former master of Bugsier's *Oceanic*.

"The world's most expensive handshake' happened on 16 December, 1977, when two 330.000 dwt tankers belonging to the same management collided in thick fog off Cape St. Francis, South Africa. *Venpet* was in ballast en route Canada to the Persian (Arabian) Gulf while *Venoil* was carrying 307.000 tonnes of oil from the Gulf to Canada. Both were set on fire and the crews abandoned ship. Saftug obtained two LOF's for the salvage operation. *Smit-Lloyd 109*, working nearby, was subcontracted. They were able to extinguish the fire on *Venpet* which was then towed a safe distance off the coast. Later *Venpet* was towed to Algoa Bay and anchored whereafter that LOF was terminated. *Wolraad Woltemade* succeeded in extinguishing the fire in the cargo tank and then took the tanker in tow – stern first. Making little headway in the Agulhas Current with the sheering tanker he was joined by the subcontracted *Lloydsman*. Once in Algoa Bay a ship-to-ship transfer saw the tanks emptied and the LOF terminated. Both ships were repaired in Japan and continued trading.

Amongst the other tanker casualties around the South African coast were *Castillo de Bellver* in 1983, laden with 271.000 tonnes of light crude, the 357.000 tons fully laden *Mimosa* in 1991 – drifting with broken steering gear and cracked hull and *Pacificos* which had lost a huge amount of shell plating.

In 2009 owner Smit Amandla Marine decided to sell *Wolraad Woltemade* for breaking up in India. The reasons given were that since the tug had been hard-worked for some 10 years in the world-wide long-distance and offshore related towing here condition had deteriorated much more than *John Ross / Smit Amandla*. That tug had been employed around the South African coast resulting in substantially less engine hours and more time for general maintenance. The tug left Cape Town under the name *Icon*, registered in Zanzibar. She was delivered to the scrap beach under her own power.

Amandla, ex *John Ross*, was sold to the breakers in 2023. Just ahead of her retirement, the tug had a busy operational period in June and July which included the tow of a disabled Japanese fishing boat from 400 miles east of East London to Cape Town. Timely intervention saw her avert a potential grounding when she towed the disabled

Officer's lounge SMIT AMANDLA *photo: Glenn Käsner*

Engine control room SMIT AMANDLA *photo: Glenn Käsner*

Officer's messroom SMIT AMANDLA
photo: Glenn Käsner

S.A. AMANDLA in AMSOL colours *photo: Glenn Käsner*

Master's day room SMIT AMANDLA *photo: Glenn Käsner*

NEPTUN SUECIA (ABEILLE FLANDRE) just arrived in France for the hand-over to the - at the time - charterer Abeilles International *photo: Frédéric Bogaert*

bulker *Sea Gemini* from around 1,6 miles off Noordhoek beach to safety offshore and, thereafter, stood by the bulk carrier *Bao Min* in Algoa Bay whilst she carried out engine repairs; enabling her to continue her voyage to the east safely.

Prior to departing for the breakers under the name ICONiC-09 owners AMSOL hosted a 3-day exhibition at the V&A Waterfront in Cape Town from the 17th to the 19th of August 2023 which was designed to pay tribute to the maritime icon *SA Amandla*. After decades of unmatched service to the maritime and shipping industries it was time to celebrate her unique legacy. Captain Okke Grapow who originally developed the specifications for the tug together with his team, and Lungile Ndima, the youngest Cadet serving on *SA Amandla*, officially opened the Tribute exhibition during a cocktail function attended by AMSOL clients and industry representatives. The series of events included an Open Day for school learners and students to visit the exhibition and the tug, a public Open Day and a special event for those who sailed onboard the tug or had a close association with her history. Over the 3 days, the exhibition and tug were visited by hundreds of people who had the privilege of being taken on a guided tour and meeting officers and crew onboard, who are immensely proud to be associated with the vessel. The exhibition not only highlighted the important role *SA Amandla* has played during her 48 years of service but also showcased South Africa's marine pollution prevention efforts and its successes.

History S. A. Wolraad Woltemade

Built by Robb Caledon Shipbuilders Ltd., Leith (yard no. 516) for South African Marine Corporation Ltd., Cape Town. Tonnage: 2.822 grt. 275 nrt. Dimensions 94,65 (BB) / 85,65 x 15,85 / 15,21 x 8,60 m. Draft 7,52 m. Main engines 2x 16-cyl. 4-st (380 x 457mm) Mirrlees Blackstone 16-KVMR Major, reduction geared to a single 5.200 mm Lips controllable pitch propeller in Lips fixed slotted nozzle. Engine output 19.200 bhp. 205 tbp max. Engine output at 110% overload for 1 hour per 24 hrs: 21.120 bhp). Speed 20 knots (21,25 knots trials). Bow thruster 800 bhp. 2x Norwinch hydraulic double-drum friction winches capacity 150 resp. 80 tonnes. Secondary winch fitted with 56 mm wire. Spooling reels with 2.000 m x 70 mm wire. Single Norwinch bridle winch. 30-tonne heavy-lift derrick max hoist height 25 m from waterline. 2x Stothert & Pitt centrifugal fire / salvage pumps capacity each 600 t/hr. 2x motor workboats under davits, resp. 75 kW and 15 kW in addition to the rubber inflatable boat. 4x water / foam fifi monitors on masthead platforms. Diving gear for four divers, including decompression chamber. Accommodation: 11 officers - 18 crew – 12 supernumeraries. 1974-04-17: keel laid. 1975-05-15: launched. 1976-04-23: completed. 1979-02-12: transferred to Stephanotis Ltd., Bermuda, renamed *Wolraad Woltemade*. 1982-04-08: transferred to Wolraad Woltemade Corp., Panama and transferred to Cape Town registry. 1986: Pentow Marine (Pty) Ltd. as managers. 1995: Pentow Marine and ships purchased by Smit International BV, Rotterdam. 1996: transferred to W. W. Tug (Pty) Ltd., (same managers). 2000: transferred to Wolraad Ltd., (same managers). 2003: transferred to Smit International Shipping Investments Second Inc, Panama. 2008: transferred to Smit International Shipping Investment Inc, Panama. 2010: sold for scrap. Renamed *Icon*, St Vincent & Grenadines flag. 2010-01-14: arrived at Alang for demolition. 2010-01-20: scrap commenced.

History S. A. John Ross

Built by James Brown & Hamer Ltd., Durban (yard no. 29) for South African Marine Corporation Ltd., Cape Town. Tonnage: 2.822 grt. 275 nrt. Dimensions 94,65 (BB) / 85,65 x 15,85 / 15,21 x 8,60 m. Draft 7,52 m.. Main engines 2x 16-cyl. 4-st (380 x 457mm) Mirrlees Blackstone, reduction

ABEILLE LANGUEDOC at speed *photo: Marine Nationale*

ABEILLE FLANDRE at Brest in 2022 in the colours of Econocom Les Abeilles
photo: Mélanie Denniel (Marine Nationale / Défense) courtesy Les Abeilles

A lasting memorial for the French ETV services out of Brest presented to the mayor of Brest: ABEILLE FLANDRE's propeller. From l to r Dominique Caillé, Director Abeilles International; Pierre Rolland, President of Groupe Recycleurs Bretons / Navaleo; Samira Draoua, President Abeilles International et François Cuillandre, mayor of Brest

photo: Dominique Leroux courtesy Les Abeilles

geared to a single controllable pitch propeller. Engine output 19.200 bhp. 210 tbp. Speed 20 knots. Bow thruster 800 bhp. 1974-03-18: keel laid. 1975-03-25: launched. 1976-11-08: completed. 1977-08-06: transferred to Allamanda Ltd., Bermuda, and renamed *John Ross*. 1982: transferred to Cape Town registry. 1983-05-17: transferred to John Ross Corp., Panama. 1986: Pentow Marine (Pty) Ltd. managers. 1995: Pentow Marine and ships purchased by Smit International BV, Rotterdam. 1996: transferred to J. R. Tug (Pty) Ltd. (same managers). 2000: transferred to Pearl Shipping and Navigation Corp. (same managers). 2003: re-registered with Smit Dudula Pty Ltd. renamed *Smit Amandla*, flying South Africa flag. 2009: Sold to Smit Amandla Marine Pty Ltd, same name. 2016-12-xx: Smit Amandla Marine and ships sold to African Marine Solutions Group (AMSOL). Renamed *S.A. Amandla*. ETV contract renewed for five years. 2023-08-01: tug retired. 2023-08-17/19: open days and exhibition on vessel achievements. 2023-08-xx: sold for scrap, renamed *Iconic-09*. 2023-10-26: sailed from Cape Town to off St. Helena. Standby *FPSO Fernan Vaz* while towing tug *Virgo* (ex *Salviscount*) went for bunkers. .2023-11-08 at East London. 2023-11-18 at sea reportedly for Port Louis, Madagascar.

The two French tugs

Contrary to the South African tugs these were built for long-distance towing, albeit with salvage as secondary task given the nature of its owners. **Les Abeilles**, the premier French ocean towage company, acquired the tugs second-hand but almost brand new. Original owner was the Swedish **Neptun Bergning och Dykkeri (**also known as Neptun Salvage), a Broström Group subsidiary. With hindsight they were ordered too late for a piece of the offshore towing pie where already many powerful tugs had acquired a seat at the table. In addition they would be lone wolfs in a fleet that predominantly operated in local and European waters. Whatever the reasoning behind the decision, it must have been a relief when Les Abeilles took the tugs on term charter and later purchased them outright.

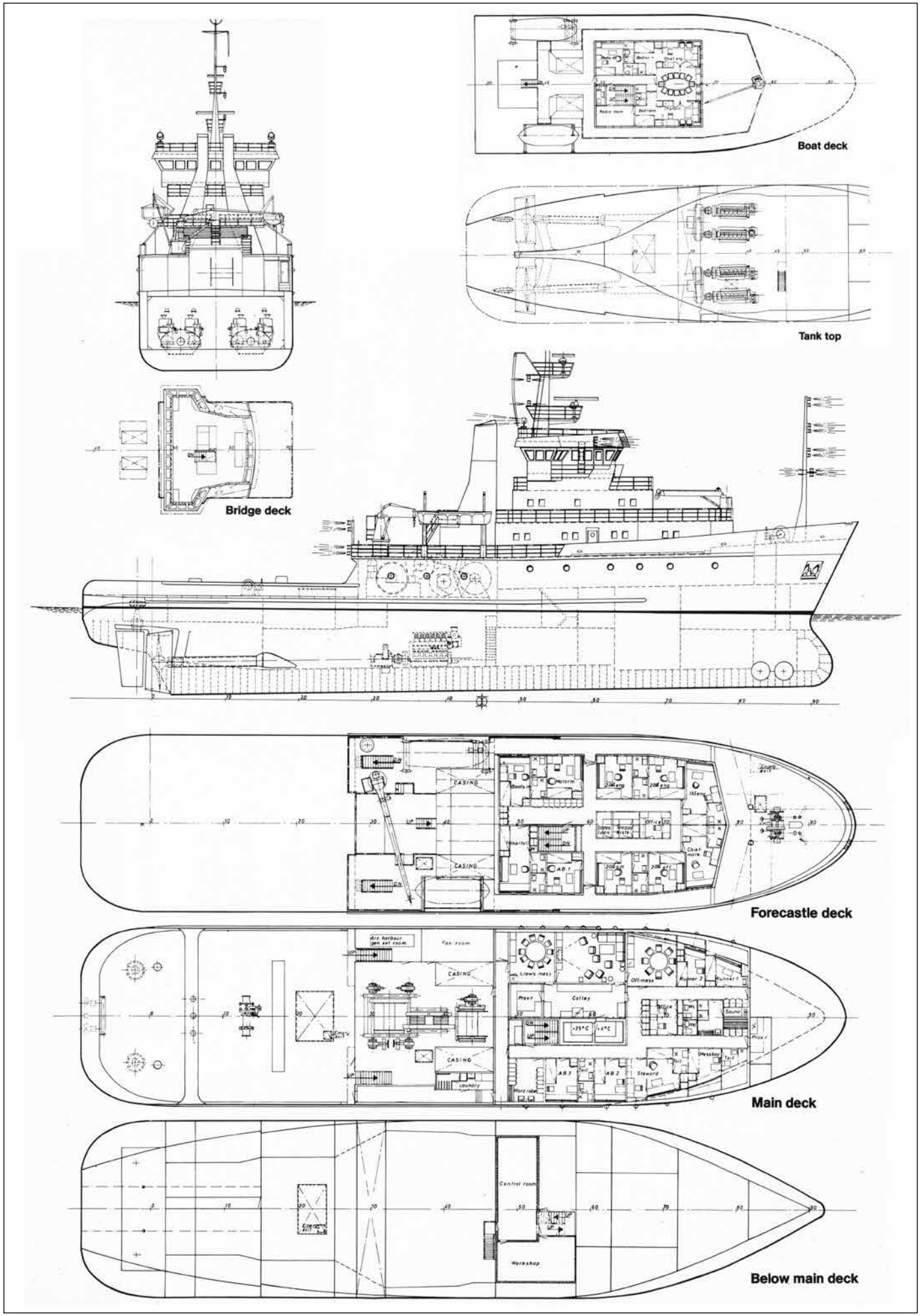
The decision by Les Abeilles was very much the same as the one that influenced Safmarine. Here it was the French Government that was triggered into action by a massive oil spill on the coast caused by the grounding and breaking up of the tanker *Amoco Cadiz*. The full story can be found in TugeZine No. 6. The story in short was that in severe weather the tanker sustained rudder damage and was drifting. The master under pressure of his office waited to send a request for help until very late. Meanwhile a German salvage tug had picked up the conversation with a French shore station and sailed on spec. The Bugsier tug *Pacific*, however, was for this size of tanker in this conditions a bit underpowered. Had the tanker, however, decided to accept the help of the tug there would have been sea room for the tug to pull the tanker into the wind delaying the drift. Bugsier meanwhile had ordered a high-powered company tug to assist. As it was, *Pacific* was finally contracted but by that time sea room had gone hampering manoeuvring space. When the tanker ran aground the tug was unable to free the tanker. The more powerful company tug arrived on scene about a quarter of an hour later. *Amoco Cadiz* off Portsall released some 220.000 tons of oil into the sea and on the French coast.

The Government, the media and the people of France had suddenly become aware of the total lack of protection of the coastal areas against the threat of shipping casualties and more specially the possible release of their (hazardous) cargo. The world's press had invaded Brest and Abeille International – which had just taken delivery of a powerful ocean tug and saw opportunities – took the press to the wreck site to impress on them the need for tugs such as they were on board.

Furthermore, **Abeilles International** had meanwhile been contracted by the Marine Nationale – representing the Government - **to provide a suitable tug on permanent salvage station**. On 27 July, 1978, *Abeille Normandie* was stationed at Brest. The contract placed the tug under order of the Marine Nationale, or more precisely the Préfet Maritime. The tug was to maintain a constant radio watch and be ready to sail in 10 minutes. In case of a force 5 at Ouessant or when visibility was reduced to 1.000 meters the tug was to leave port to patrol the Iroise or to move to one of the bays nearby. *Abeille*

The salvage of the aft part of the tanker TANIO off the French coast

newspaper clipping: Daily Telegraph 8 March 1980 - coll. Job van Eijk



General Arrangement NEPTUN GOTHIA (ABEILLE LANGUEDOC) *drawing: Neptun Transport & Marine Service AB*

Provence was likewise chartered to cover the Cherbourg area. It soon dawned on those involved that while these two sisters were able to hold a tanker in position they were underpowered for the follow-up actions. So Abeille International started looking for more powerful replacements which is why the came in contact with the Swedish tug owners which had just taken delivery of two of the most powerful tugs in the world. *Neptun Suecia* and *Neptun Gothia* - 13.000 bhp / 160 tbp.

In August, 1978, both tugs were delivered at Dunkirk. Capt. Jean Bulot became the first Master of ***Abeille Languedoc*** (ex *Neptun Gothia*) operating from Cherbourg. Later, capt. Bulot transferred to *Abeille Flandre*. Three months later capt. René Milon took command of ***Abeille Flandre*** (ex *Neptun Suecia*) which was stationed at Brest.

The activities of the ETV's over 45 years were well publicised, not in the least through the numerous books published by capt. Jean Bulot, press info and promotional videos. Also several documentaries have been aired on French television many of which today can be found on the internet. All this was great PR that helped create a climate of better understanding. Not only for the general public – the taxpayer after all foots the bill for the ETV service – but also with decision-makers. As such, the *Amoco Cadiz* had accelerated awareness of the potential problems that oil tankers can cause and the enormous costs associated with the consequences thereof. It also triggered the development of equipment aimed at the limitation of spills as well as speeding up of the cleaning. Vastly improved traffic control at choke points in the main shipping routes were now in place. The casualty also influenced certain aspects of tanker design like emergency towing arrangements and the forward towing fairlead. Pollution control took centre stage.

In France the ETV service meantime proved its worth. In the first In 20 years since the start of operations *Abeille Flandre* carried out 774 missions while in the same period *Abeille Languedoc* carried out 607 missions which comes down to one call every 10 days for each tug. This obviously includes things like exercises, escort work and patrolling. In

ABEILLE FLANDRE assistance to RMS ANDROMEDA *photo: Marine Nationale*

Aft part of ERIKA being towed by ABEILLE LANGUEDOC. Later the tanker took a dive and the wire had to be cut *photo: courtesy ISU*

the first 20 years the figures for salvage / rescue operations are on average 8 to 9 per year with the lowest number being 4 and the largest number 24. Standby service was delivered to 282 respectively 230 vessels that reported problems that could have led to salvage but were able to carry out timely repairs themselves. 194 respectively 150 vessels were actively escorted out of danger. 77 respectively 75 operations had to do with salvage of lost containers, dangerous cargo, pollution control, etc. Finally 21 resp. 12 exercises with VLCC's were carried out. For these alerts one is reminded that figures for the actual sea days used on these calls is not available here. Quite a number of the assists were performed in (very) bad weather conditions.

A job that certainly hit the headlines was the case of the tanker *Tanio* which in March 1980 broke her back in very bad weather. The 1958-built tanker in position 24 nm north of Ile de Batz, Finistère, with a cargo of 27.500 tons of heavy oil and some 900 tons of fuel had run into a force11 storm. It broke her back. The two sections remained afloat although the forward section eventually sank. Some 12.500 tons of oil were spilled. A French tanker intercepted an S.O.S. call on VHF 16 and alerted Radio Le Conquet. *Abeille Languedoc* (capt. Jean Bulot) was already at sea at the time but could only make some 10 knots due to the seastate. *Abeille Flandre* from Brest thus was the first to arrive. During the night the tugs stayed with the two sections. A third tug - Bugsier's *Seefalke* – had meanwhile also arrived on the scene. In the morning the storm was reduced to a force 8 with the seas being about 7 meters. With the position now just 7 nm off the Roches Douvres and the shallow Plateau de Barnouie where the remains of the tanker would be smashed to pieces releasing all of the remaining oil on the coast *Abeille Languedoc* succeeded in putting its inflatable in the water from which two men were able to climb aboard the stern

section. A navy helicopter lowered some additional men on the casualty and the tug backed down to the stern section to pass the wire only a few meters away from the heaving hulk. The tug started towing with the stern section just half a mile from the shallows. Course was set for Le Havre in company of *Seefalk*e which had been sub-contracted to act as watchdog to rescue if necessary the two tugman still on the casualty and to light up the scene at night. At Le Havre the remaining 9.000 tons of oil were discharged.

Erika was a tanker built in 1975. The 37.283 dwt tanker was on charter to Total-Fina-Elf. On 12 December, 1999, with a cargo of 31.000 tons of heavy oil, she encountered a force 11 storm and broke in two. *Abeille Flandre* (capt. Charles Claden) was alerted and set course for *Erika,* a 100 nm away. When an attending helicopter reported that the tanker had just broken in two the instructions for the tug changed from a rescue tow to limiting pollution. Arriving on the scene it was noted that the forward section was already sinking with only the forecastle still visible. The tug succeeded in connecting to the casualty and started towing at a very slow speed. On 13 December when preparing for an airlift to inspect the towing connection the stern of the casualty was rising out of the water. A prelude to taking the final plunge. To release the tow the tug stopped pulling then put on full power. The shock load ripped the bollards from the deck of the tanker just before she made the final plunge. An estimated 20.000 tonnes of the cargo was released into the sea. The cargo polluted over 400 km of shoreline between Finistère and Charente-Maritime. In June, 2000, a salvage operation recovered another 10.000 tons of oil from the wreck.

In 1996 Progemar – Abeille International's parent - was purchased by **Groupe Bourbon** which had just acquired Compagnie Chambon bringing the majority of French towage under a single flag. They ordered two newbuilds for the ETV service. *Abeille Bourbon* and *Abeille Liberté* were added to the fleet with the two older vessels transferred to the Med. In 2007 Bourbon ran into financial difficulties so sold Les Abeilles to the Spanish **Grupo Boluda**. Not included in the deal was **Abeilles International** which remained with Bourbon but reverted to its old name Les Abeilles. Finally in 2020 the banks took control of Bourbon. One of their actions was to sell Les Abeilles to the **Econocom Group**, an IT service provider that is active in many countries. Since 2017 the company had been involved with Les Abeilles International and in September 2020 they took control.

They acquired two big tug / supply vessels in the offshore market and reconstructed these as the ETV / salvage tugs *Abeille M*editerranée and *Abeille Normandie*. The contract with the State was renewed running until 2050, providing a year round service 24/365 with the tugs on 40-minutes notice. The two original ETV's were now taken out of service. Donation of one of these for use as a static exhibit was contemplated but no business case could be made. The first one to go to the breakers at Brest was *Abeille Languedoc*, followed by *Abeille Flandre*. Les Abeilles on 13 September, 2023, donated one of *Abeille Flandre*'s propellers to the city of Brest – her home base for over 25 years - as a lasting reminder of the tug's long-lasting service protecting the French coast and providing assistance to shipping. "In the absence of a viable memorial project, the dismantling of our proud tugboat proved to be the only reasonable outcome" declared Samira Draoua, President of Les Abeilles. "Like its sistership *Abeille Languedoc*, the *Abeille Flandre* is such a strong symbol for the community of seafarers that it was difficult to imagine seeing the ship taken over and used by others. Faithful to our values in terms of respect for the environment, we have once again chosen the Brest-based company Navaleo, from the Recycleurs Bretons group, to ensure its deconstruction".

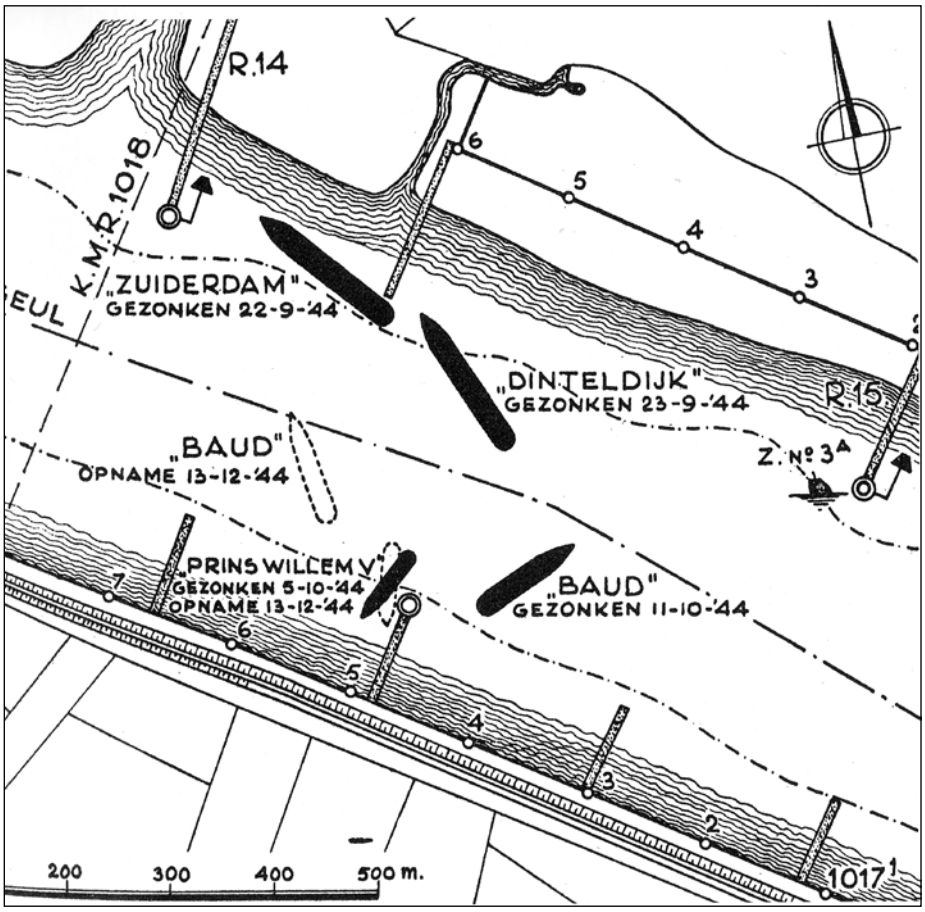
ABEILLE LANGUEDOC *photo: coll. Job van Eijk*

The tugs were built by Ulstein Hatlo A/S in Norway. Dimensions were 63,45 m x 14,40 m with a mean draft of 6,40 m. GT was 1.576 tons. Main engines were four M.A.K. 453-AK. These drove - via Lohman Stolterfoht GVA-1250-C reduction gears – the two A.M. Liaan c/p propellers rotating in nozzles at 150 rpm. Speed was 17 knots, bollard pull 160 tonnes continuous on four engines. Steering was by two Tenfjord rudders with a maximum swing of 2x 45^{o} and two Ulstein 890-TV-359 bow thrusters with a thrust each of 4,0 tonnes. Manoeuvring was facilitated by an Ulstein FCM joystick system. To reduce rolling an Ulstein passive stabilisation system was fitted. The towing gear consisted of a towing / traction winch arrangement with a pull of 110 tonnes and a towing drum with a pull of 150 tonnes accommodating two 1.500 m x 70 mm diameter towing wires. Static pull 400 tonnes maximum. On the towing deck a 12-tonne gog winch and two 8-tonne capstans were fitted as was a double set of hydraulic towing pins. All winches and the pins were controlled from the wheelhouse and fitted with tension and wire-length sensors. For salvage purposes the tug was fitted with portable pumps, fixed and portable compressors, electric power supply capability and welding equipment also for underwater welding. Equipment for two divers and frogmen was carried. Two hydraulic deck cranes capacity SWL 14 and 7 tonnes were carried. A motor workboat and two rubber speedboats were carried.

Rotterdam Waterway blocked

When near the end of WW2 the German occupiers were going to retreat their no. 1 priority was to destroy the Port of Rotterdam as a sort of last defence. On of those defences was the blocking of the Waterway, the entrance to the Port of Rotterdam.

by Job van Eijk and Simon Mostert



Position of the wrecks in the blockade off Maassluis *map: coll. Job van Eijk*

To that end they started demolishing quay walls, drydocks, harbour cranes, storage sheds, etc using explosives. Nevertheless discussions between the Rotterdam municipality / port authority and the German command resulted in a reduction of destruction – several major objects remained unscathed. An attempt to block the Rotterdam Waterway only partly succeeded. On 22 and 23 September 1944 the freighter *Dinteldijk* (9.398 grt) and the partly finished passenger liner *Zuiderdam* (12.150 grt) were scuttled near Maassluis. It was a partly botched job as the two ships hit the bottom just outside the fairway. On 5 an d 11 October two further newbuild hulls were scuttled. The 1.525 grt *Prins Willem V* also settled on the bottom partly outside the fairway, at the southern river bank. The 4.200 grt *Baud* was scuttled in exactly the right place – midstream - but the powerful ebb pushed the hull more to the west leaving a serious gap between the obstacles. The fairway was now limited to a width of 45 metres with a navigable depth of 24 feet. An attempt to use the unfinished hull of *Westerdam* to close the gap was thwarted twice by the Resistance who had succeeded in sinking the vessel where it was moored.

Immediately after liberation Rijkswaterstaat, responsible for the main water systems in The Netherlands started clearing operations. Rotterdam had top priority as the port had to be made functional as soon as possible. The biggest obstacle was ***Baud*** but a British wreck dispersal crew took care of that by blowing the wreck apart using depth charges. On 16 June, 1949, the available fairway het a width of 125 metres with a depth of around 9 metres. ***Zuiderdam*** had to be patched up after which she came free of the bottom on 12 November 1946. The wreck was a total loss and towed to the breakers. ***Dinteldijk*** had broken her back. In 1946 she was broken up by a combination of explosives and underwater burning. Chunks of metal between 50 and 100 tonnes were then removed by the floating sheerlegs. What remained was 'buried' by a hopper dredger.

Prins Willem V was an entire different case as the hull was still sound although filled with sand and mud. Cutting up the valuable vessel thus was not an option. Problem was that she slowly sunk into the sand until she was resting on a clay bank. She was now at a depth where the top of the funnel was only visible at low tide. A first attempt at lifting using floating sheerlegs and lifting camels but this failed due the sand and mud inside making her too heavy. Instead the solution was to establish a platform around the vessel and using a jack-up system to raise here. Eight steel pillars were sunk round the hull four on each side. On these piles ferro-concrete platforms were constructed that served as the base for four bridge structures with six sectional steel girders each with a length of nearly 20 metres. 16 hydraulic 200-tonne jacks were to be installed on the bridge structures

The blockade: from right to left ZUIDERDAM, DINTELDIJK and BAUD (tip of mast only)
photo: coll. Simon Mostert

ZUIDERDAM being rightened - note lifting camels alongside

photo: coll. Simon Mostert

ZUIDERDAM being moved to the Wilton Shipyard towed by PERNIS (Smit), DRYDOCK II, DRYDOCK I (l to r)

photo: coll. Simon Mostert

PRINS WILLEM V raised *photo: Job van Eijk*

PRINS WILLEM IV, sister of PRINS WILLEM V. Owner Oranje Line / Sea Transport Co. Built 1940- / 1945. 1.535 grt - 2.680 dwt. 78,64 / 75,89 x 12,80 x 5,56 m. Stork diesel 1.500 hp. 1940 confiscated Kriegsmarine, 1941 SPERRBRECHER 179. 1945 returned to owners, reconstructed. 1946 returned to service Oranje Lijn. 1966 CITTA DI BEIRUT. 1973 GILVANI. 1974 scrapped *photo: Oranje Lijn / Mij. Zeetransport*

Construction of the base for the lifting platform photo: coll. Job van Eijk

PRINS WILLEM V lifting platform, nearing completion photo: coll. Job van Eijk

generating a total lifting power of 3.200 tonnes. An uncertainty was the effect of the river current which generates horizontal pressure on the hull. This could not be estimated but since the platforms were manned during the lift a continuous monitoring was put in place keeping check on longitudinal and transversal movement, tension on the anchor cables, settling of the pillars and the strain on the jacks.

The lifting structure was completed on 29 September, 1947, and tested. A trial lift failed. Inspection of the holds showed that despite having been emptied the year before they once again were filled with sand and mud. Four salvage vessels were now ordered to start pumping all day. Despite this it took a month to empty the holds reducing the weight of the ship from 5.200 tonnes to 2.800 tonnes. The lifting would be done in turn starboard then port either by 4x2 or 8 jacks. It took in total 1.830 such movements for the raising. The stroke of the jacks per lift was 10 cm. Between 4 and 27 November the vessel was raised just over 9 metres with the hatches now breaking the surface. Next problem was to work out a plan whereby the now floating vessel could pass from under the lifting beams. After detailed stability and trim were carried out a pumping plan was devised whereby the ship would be pumped out to floating condition during the ebb tide. The bridge structure meanwhile would be removed by floating sheerlegs.at low tide after which tugs would tow the vessel to open water. On 11 December, 1947, the plan was carried out. When removed soundings were taken that showed due to the scouring effect of the river she had only be supported on the bottom for half of her length – in fact if the process had taken longer she may have broken her back.

In **the final lift** the sheerlegs *Atlas* and *Ajax* (resp 275 tonnes and 325 tonnes lifting capacity, owned by the shipbreakers Frank Rijsdijk) were used to lift the top structure of the platform. Van den Tak's *Adelaar* (140 tonnes lift capacity) was positioned near the stern for the voyage to the shipyard. The Van den Akker salvage vessels *Bruinvisch*, *Meermin* and *Ram* as well as the tugs *Luus* and *Zeester* were positioned at the port side as pumping vessels, total capacity some 2.200 m^3/hr. Pumps were also fitted on the shelter deck (1.250 m^3/hr) and the main deck (6.000 m^3/hr). Cost calculations showed that although costly the price for the operation plus the repairs of the ship together were far less than a total new constructed vessel. Furthermore if demolished locally every time the fairway would be deepened her remains would be in the way.

Post WW 2

Prins Willem V was again operational from 8 January, 1949.went on to ply the route from Europe to the U.S. Great Lakes. On 14 October, 1954, Prins Willem V when leaving the Port of Milwaukee collided with the 240 m long towing cable of the tug *Sinclair Chicago* towing the lighter *Sinclair XII* laden with 10.000 barrels of oil. The lighter holed the side of the ship which started sinking.

In Milwaukee, only six miles from where the vessel sank, lived Max Gene Nohl -- a native-Milwaukeean, diver, engineer, inventor, entrepreneur, underwater filmmaker, lecturer and World Record holder, for a record dive of 420-feet on 1 December, 1937 in Lake Michigan.

Nohl's involvement started shortly after the October 1954 collision. The U.S. Army Corps of Engineers determined that part of the wreckage was deemed a hazard to navigation- or shallower than 40 feet. Because of this the Army Corps requested bids from contractors to clear either the entire wreck or portions that were considered an obstruction. Nohl won the bid at USD 50.000 and additionally gained the rights to ownership of the wreck. The work turned out to be incredibly easy, only a protruding gangplank needed to be removed, and the contract was fulfilled the following spring. The Army Corps of Engineers felt it was too easy and didn't warrant the pay. They threatened to take Nohl to court, but after a year, the suit was settled for USD 46.000 out of court. Most importantly, Max Nohl retained ownership of the wreck. His original goal was not to profit off the bid with the Corps of Engineers, but to raise the *Prins Willem V* and make his profit off selling a vessel that could be made whole again.

Max Nohl died in a car crash in early 1960. Up to this point, he had started several businesses and spent most of his time trying to salvage the "Willie". After his death, his beneficiaries auctioned off the *Prins Willem V* (the only known auction of a sunken vessel) and the new owner, General Fire Extinguisher Company, also tried to salvage the vessel without success. They ended up selling the *Prins Willem V* back to the trust for USD 1.000 for liability reasons.

Today, with the passing of the Abandoned Shipwreck Act of 1987, this well-known wreck diving destination is owned by the State of Wisconsin and managed by Wisconsin Historical Society for all to enjoy.

Harbour Clearance Salvage

This type of salvage operations require intense effort of limited duration requiring a lot of equipment and large salvage crews or may be over a long term using limited resources.

by TDI Tugboat Publications

Ernest Frank Cox - the man who bought a Navy
photo: coll. Job van Eijk

Thomas McKenzie was the salvage engineer responsible for the organisation and efficiency of the salvage *photo: coll. Job van Eijk*

Harbour clearance salvage is usually generally thought of as related to war or post-war situations but also applies to large scale wreck removal operations connected to the deepening of port entrances etc. Furthermore the term may be applied to areas that were once used as ship graves but will be used for new developments. It always concerns multiple wrecks.

Scapa Flow

An interesting case is that of the interned German High Seas Fleet at the end of World War 1. The Battle of the Dogger Bank and the Battle of Jutland had led to a reluctance on the part of the German Navy to initiate large scale operations. Which would have been difficult anyway since British warships carried out an effective blockade sealing the German ports. Under the terms of the Armistice Germany was required to surrender a large part of their fleet to Great Britain. On 21 November, 1918, the formal surrender process of the German High Seas fleet began with ships from the British and Allied fleets taking up position at sea in two columns in single line ahead. A single British warship then led the column of surrendering German ships in between the lines of the waiting Allied warships anchoring off May Island in the Firth of Forth. At sunset, the German battle flag was lowered on all ships. The following days batches of ships were assembled at Scapa Flow where they were anchored in designated positions – a total of 74 German warships. The crews were removed except for some 1.800 man remaining as a skeleton crew to carry out maintenance. As the peace treaty had not yet been signed the German vessels were lawfully only interned but had not the status of 'surrendered' which is why no British crews could replace the Germans.

In June, 1918, the naval conditions of the peace terms had been signed but the Allies amongst themselves were unable to come to a 'division of the spoils' as geopolitical concerns about the supremacy of the British Navy replaced common sense. Anyway, it was a waste of time. On 1 June the commander of the interned German fleet, Rear-Admiral von Reuter, had made a secret order to 'his' fleet **to prepare for scuttling**. In the morning of 21 June von Reuters signal started the scuttling process. By 1100 hrs the first of the German crew were seen abandoning ship alarming the British. It was, however, too late and ships were beginning to sink all around,

Up she rises. The wreck of the KAISERIN raises from the seabed for the final voyage to the breakers yard
newspaper clipping: Daily Telegraph 15 May1936

all flying the German battle flag. Only one capital ship, three cruisers and 18 destroyers remained afloat.

On 24 June the first salvage advisers were sent by the British Admiralty. They reported that raising on compressed air would not be too difficult. But the Admiralty had already made their mind up that the four beached ships – the British had either cut off or blown apart the anchor cables while they were sinking – could be salved with the remaining leaving to rot on the bottom.

With scrap metal in great demand all around the world entrepreneurs cast their eyes on the sunken fleet. In 1923 mr **J.W. Robertson** purchased four destroyers which did sink in relatively shallow waters. To this end his company, the he had purchased two 1.000 tons concrete barges from the admiralty which he reconstructed for tandem vertical lifting using a pulley system. Lifting capacity was 3.000 tons each. In the actual lifts a 'camel' was added assisting in the lift and positioned between the barges. The next year the firm of **Cox and Danks** obtained a contract for a number of capital ships and a portion of the destroyers. Included in the deal was the use of the port of Lyness as a base. **Frank Cox** – then aged 40 - had experience in engineering, steel works and shipbreaking, but not in the art of salvage. He was, however, in the possession of a floating dry dock which could be used for making tidal lifts. A chance meeting found him hiring a qualified salvage engineer, **Thomas McKenzie**. His father was the only Scottish sea captain experienced in salvage work and had taught young Thomas the art of diving. Thomas McKenzie was to stay at Scapa for the next 24 years.

A number of the smaller destroyers were lifted to the surface by the dock which meanwhile had been cut across its length to form two L-formed lifting platforms. For the destroyers that had capsized the arrangement was slightly different. The slings were positioned such that there was a different length on each side of the destroyer. Slightly lifting the vessel and moving it to deeper water the lifting sling on one side was veered, rolling the destroyer in its cradle. When upright the vertical tidal lift began.

The last few miles to the breaker's yard for KAISERIN. Note that the high airlocks were replaced by small ones for the sea voyage *newspaper clipping: Daily Telegraph 2 September 1936*

Groups of salvage and support vessels came over from Englad to keep the Mulberry Ports in good condition allowing a constant stream of supplies to reach the Allied armies

photo: coll. Job van Eijk

The capital ships were an altogether different story. The first one – *Hindenburg* – was upright on the bottom so all openings were sealed and pumping started. Time and time again these patches failed or new openings discovered. The wreck was left alone and the second one tried which was upside down with a list. This was the first one for which use was made of 100-feet high airlock chambers creating a caisson-type workspace in the hull itself.

Plugging the openings was much easier with air pressure holding everything in place. When the wreck had been raised the towers were replaced by smaller airlocks. Ocean tugs were then called up for the delivery of the upside-down hull to the scrapyards. On 11 May, 1932, the last Cox & Danks raised vessel was delivered to the breakers.

The job was now continued by **Metal Industries Ltd**., the shipbreaking

company that had purchased the Cox & Danks raised wrecks. They first purchased the rights remaining with Cox, then purchased his equipment and finally took on board the workforce, including Thomas McKenzie. While Cox & Danks overall did not make a profit, Metal Industries – operating in demanding market and with more modern equipment on average made a GBP 50.000 profit per ship comparing to an investment in the purchase of salvage rights from the Admiralty of some GBP 2.000 per vessel. Metal Industries also used the airlock system developed by Cox & Danks to raise the big vessels.

While **Bugsier Reederei** of Hamburg had towed the first big ones to the breakers, **L. Smit & Co**. was contracted for the later wrecks. *Kaiserin* in 1938 departed Lyness under tow of Smit's motor tugs *Zwarte Zee* (4.000 hp, capt Teun Vet), *Thames* (3.000 hp, capt. Barend 't Hart) and *Roode Zee* (1.250 hp, capt. Arie van Dorp).

Between 1924 and 1939 no less than 38 ships had been raised which generated 327.000 tons of steel. Apart from the various lifting methods, the capabilities required from a salvage officer also came to the front: a bit of a naval architect, a bit of an engineer, a bit of a diver, an improviser and quick decision maker.

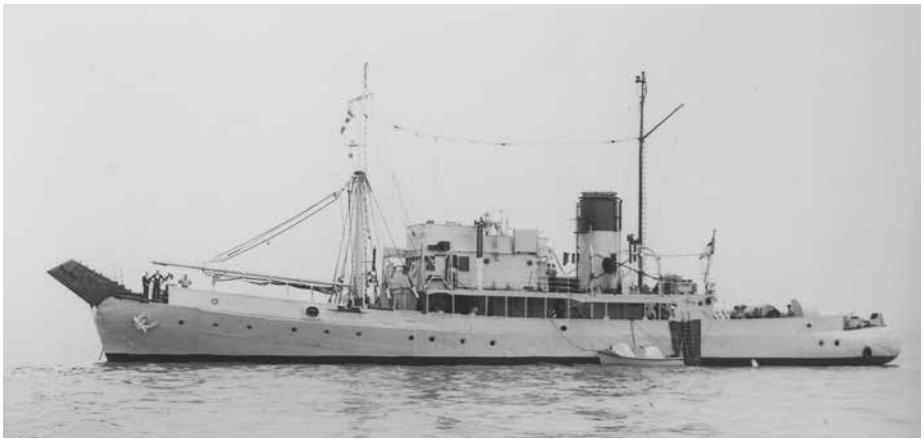
Overlord and beyond

has to do with clearing a series of obstacles that hinder a port to be fully functional. An example of this type of salvage was during World War 2 when salvage ships accompanied invasions to clear a.s.a.p. enemy ports for use by the invaders which had to endure a constant supply of goods to keep the invading troops able to do the job.

The **invasion in Normandy** that started driving the German occupiers out of France and other occupied nations could not have succeeded without the – in this case mainly British – salvage teams. The British Government during the war had developed a variety of ship types that could be used in salvage operations. Preparations for 'Overlord' as the invasion was dubbed began in 1943. Admiral Dewar was the one to carry the burden for the salvage side of business. In order to plan the admiral needed information on how, what and where, number of ships estimated damaged or lost, what harbours may be needed not only during the invasion but also later, etc. Crucial ships for the landings were considered to be the LCT's and LST's as well a coasters. An estimated 30 Landing Craft Tank's, 10 Landing Ship Tanks and up to eight coasters were thought to be in need of some form of assistance at the same time. The principal Admiralty salvage officer was to be **Thomas McKenzie**, of Scapa Flow fame.

DISPENSER is one of a group of 11 Admiralty Coastal Salvage vessels that were kept busy during WW 2. These very capable craft were also used post-war in commercial operations. They were steam powered, 600 ihp output for a maximum speed of 9 knots

photo: World Ship Photo Library



The 'BAR'-class boom defence vessel BARNDALE was compled in November, 1939. by Lobnitz at Renfrew. Steam- powered with an output of 850 ihp their speed was 11,5 knots with a displacement of 730 tons

photo: coll. Job van Eijk

The 55 salvage vessels assembled for Overlord included lifting lighters (dumb barges) and lifting camels with attending small tugs, wreck dispersal vessels, rescue tugs and general salvage vessels. All vessels were to be manned by civilians and **managed by Risdon Beazley Ltd**., Southampton. The wreck dispersal vessels and rescue tugs were retained under Admiralty command. Also being used when demanded were the so-called boom defence vessels, a large series of ships needed to handle to boom defences protecting ports. Equally there was a series of mooring vessels intended to maintain moorings in or outside ports. And there were, of course, the fleet tugs, salvage tugs that accompanied convoys or send out to rescue damaged naval craft.

At the end of 1943 three more coastal salvage vessels and four U.S. built salvage tugs were added, as well as three wreck dispersal vessels and three pairs of lifting craft. Each invasion port (the artificial harbours called 'Mulberries') was allocated an equal number of salvage craft. A total of 10 salvage vessels plus one wreck dispersal vessel. They were expected on location 24 hours after the landings started. The vessels were made identifiable by a letter code painted on the funnel. The heavy gales of 19-21 June 1944 caused a lot of work with some 800 vessels dragged or broke mooring with a good number running aground. With the progress of the war the salvage craft moved gradually northward as far as

The Artificial Mulberry Port is key in the assault plan keeping the military supplied on a constant basis until existing ports are cleared of the enemy photo: coll. Job van Eijk

One of the Admiralty Coastal Salvage Vessels at work clearing a liberated port
photo: coll. Job van Eijk

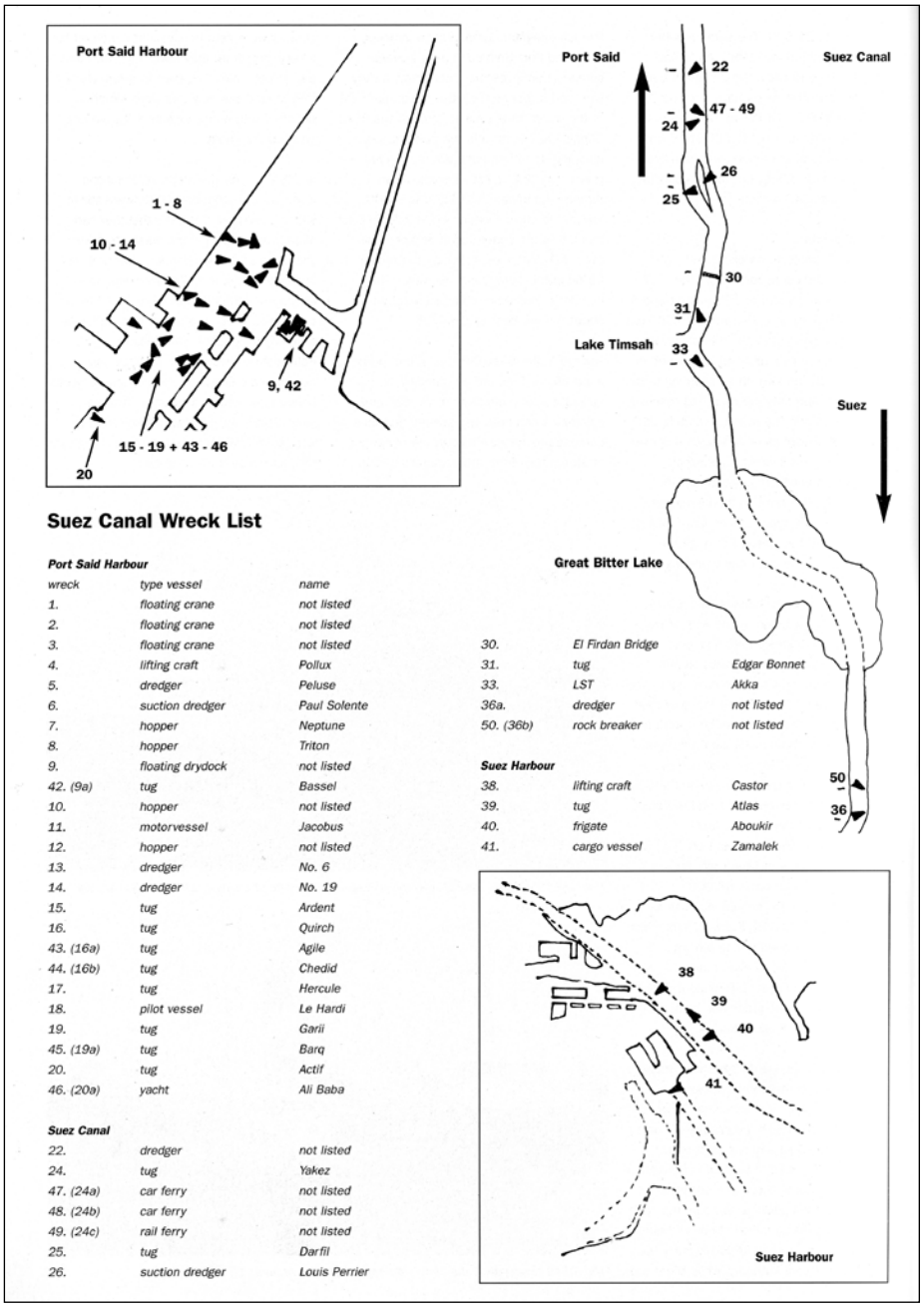
US Navy salvage vessel seen in at Milne Bay, New Guinea, working a Japanese vessel sunk in port after a bomb attack in 1942. The plan is apparently to right the vessel by par-buckling photo: coll. Job van Eijk

Italian salvage vessel SQUALO working the wreck of the Egyptian LST AKKA, scuttled with a load of cement in the Suez Canal
newspaper clipping: The Sun January 1957, coll. Job van Eijk

Hamburg and Kiel. McKenzie reported that form June 1944 until November 1945 2.055 vessels were cleared by the salvors. In addition, between form June 1944 and January 1946 the salvage organisation for the invasion had assisted a further 1.700 vessels.

The first Coastal Salvage Vessel in a liberated port was *Help* entering Cherbourg in July 1944, accompanied by four Admiralty lifting craft, 12 camels and the American salvage vessels *Swivel*, *Diver* and *Brant*, working in the port from July 1944 until May 1945. During a period of six days in July *Help* jointly with a second – requisitioned – salvage vessel raised two ships in the port, which was otherwise in ruins.

On 11 August 1945 McKenzie reported **all operational salvage work completed**. Between 10 May and 15 September In Hamburg 30 ships, 232 barges, 5 submarines and 13 pontoons and the like were removed, refloated or lifted. At Wilhelmshaven this concerned 21 vessels, Travemunde one ship and a floating dry dock and at Kiel 27 vessels. On 20 June, 1945, McKenzie had reported that by 20 June, 1945, the German salvors had lifted about 58 ships and other craft. He also noted that some 450 wrecks remained at Hamburg, 114 at Kiel, 33 at Emden and 32 at Wilhelmshaven, Travemunde and Flensburg, as well as 127 wrecks in the American sector at Bremen. It is of interest to note that from November 1945 civilian German salvage operators were responsible for the clearing of the remaining wrecks.



Suez Canal Wreck List

wreck	type vessel	name
Port Said Harbour		
1.	floating crane	not listed
2.	floating crane	not listed
3.	floating crane	not listed
4.	lifting craft	Pollux
5.	dredger	Peluse
6.	suction dredger	Paul Solente
7.	hopper	Neptune
8.	hopper	Triton
9.	floating drydock	not listed
42. (9a)	tug	Bassel
10.	hopper	not listed
11.	motorvessel	Jacobus
12.	hopper	not listed
13.	dredger	No. 6
14.	dredger	No. 19
15.	tug	Ardent
16.	tug	Quirch
43. (16a)	tug	Agile
44. (16b)	tug	Chedid
17.	tug	Hercule
18.	pilot vessel	Le Hardi
19.	tug	Garii
45. (19a)	tug	Barq
20.	tug	Actif
46. (20a)	yacht	Ali Baba
Suez Canal		
22.	dredger	not listed
24.	tug	Yakez
47. (24a)	car ferry	not listed
48. (24b)	car ferry	not listed
49. (24c)	rail ferry	not listed
25.	tug	Darfil
26.	suction dredger	Louis Perrier
30.	El Firdan Bridge	
31.	tug	Edgar Bonnet
33.	LST	Akka
36a.	dredger	not listed
50. (36b)	rock breaker	not listed
Suez Harbour		
38.	lifting craft	Castor
39.	tug	Atlas
40.	frigate	Aboukir
41.	cargo vessel	Zamalek

Wreck chart showing the blockships and other obstacles to be cleared in the Suez Canal in 1956
map: L. Smit & Co / van den Tak

As an aside, the German **Bugsier Reederei** had realised that their number one salvage tug - *Seefalke* – would be high on the list of 'war reparation vessels' to be handed over to the Allied troops. The tug had been sunk in the Kieler Förde and for the time being was out of view of the foreign troops. When a plan came forward to demolish the Kieler Werft and change the port area into land. As at the time Bugsier salvage vessels had permits to operate there the company devised a plan to keep their tug hidden for later. Bugsier salvage vessels worked on location to work on some of the crashed port cranes. At the same time, however, the divers worked on *Seefalke* preparing her for the disappearing act. One evening a second Bugsier vessel arrived to assist. The tug was raised by compressed air just enough that she could be towed under water to a new location. In the Strander Bucht in the Kieler Aussenförde she was again 'parked' on the sea bottom, out of sight. In 1950 the tug was raised again, repaired and modernised for a total cost of 700.000 DM. In the early summer of 1950 she once again was an operational salvage tug.

Suez Canal clearing

Another form of port clearing was removal of the block vessels and other items from the Suez Canal. This had happened when Egypt seized the Suez Canal and started a war over the ownership. Much has been reported on this and *in TugeZine no. 5 an extensive report has been published (our back-issues are free for subscribers).*

With the Compagnie Universelle as the concessionaire the Government of Egypt only received a percentage of the passage fees. On 17 November, 1968, the concession was to expire and the Egyptian Government was to take possession of the Canal without paying compensation but was to purchase the plant and supplies at valuation. But it would never come to that.

After 1951 a period of political pressure on all parties involved led to the U.K. to agree to remove its troops from the canal zone. This was completed on 18

July, 1956. This left the canal zone in Egyptian hands but otherwise the status of the Compagnie Universelle remained as it had always been. But only days later – on 26 July, 1956, Nasser nationalised the Suez Canal and the name was changed to Suez Canal Authority.

On 29 October, Israel invaded the Sinai peninsula. Nasser was forced to reply with military action. This gave the English and the French an excuse to intervene under the pretence of separating the fighting parties to stabilise the region but also with an aim to re-establish their control over the Suez Canal. Hostilities ended at midnight on 6 November.

A United Nations peacekeeping force was agreed to by the relevant parties which took up position between the two combatants. The UN also was tasked to maintain the free navigability of the canal. In this respect their first priority was to clear the canal of wrecks and mines.

The UN contracted salvage fleet

The UN sounded out L. Smit & Co. as to the possibilities. The first contact was made on 10 November. Smit (with their salvage subsidiary v.d. Tak) had teamed up with Svitzer in **Smit-Svitzer-Suez-Salvors** (SSSS) and it was them that gained the contract. On 18 November Egypt formally approached the UN for help in the clearing operation. On 24 November the UN gave it the green light. They appointed General Raymond A. Wheeler (ex U.S. Army Corps of Engineers) as the project supervisor.

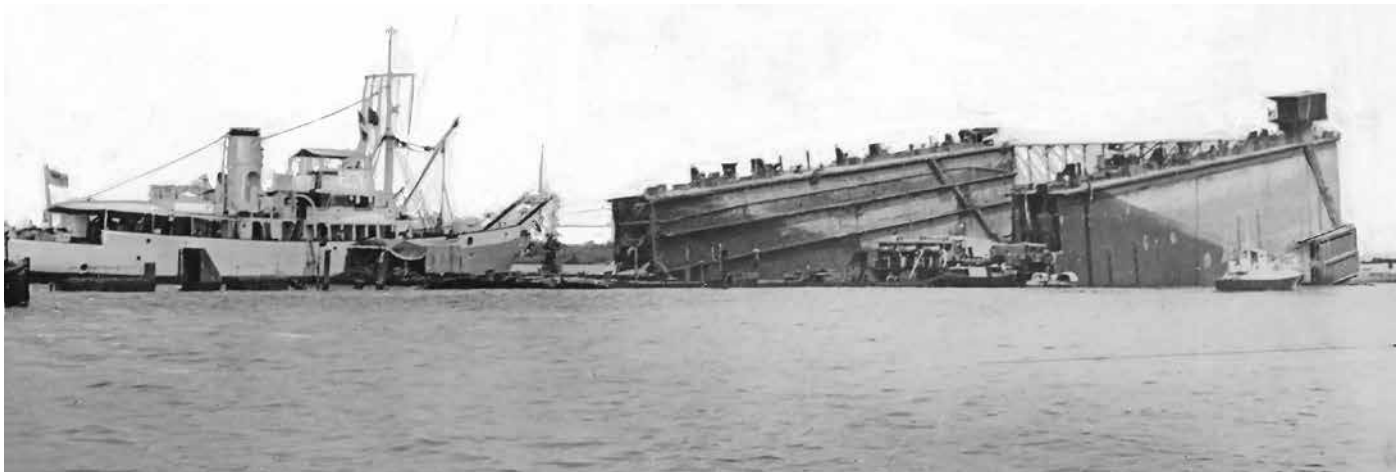
Apart from a large fleet of salvage vessels provided by Smit / Van den Tak and Svitzer additional salvage craft and equipment was sourced from **Micoperi** (Italy), **Tripcovich** (Italy), **Brodospas** (Yugoslavia) and **Neptun** (Sweden). Micoperi supplied the tugs *Giovacchino* and *Wladimiro*, the salvage vessel *Giovenale* and the lifting craft *Squalo*. Tripcovich send the salvage tug *Hercules*. Brodospas contributed the tug *Borac*, the salvage vessel *Rezac*, the lifting craft *Tornado* and the sheerlegs *Veli-Joze* (lifting capacity 300 tonnes).
The salvage tug *Herakles* belonged to the Swedish Neptun company. The UN also took over the British contract with **Bugsier** even though they would not join the SSSS fleet and worked independently although controlled by the UN, as was SSSS.

The Smit / Svitzer contribution consisted of the ocean tug *Gele Zee* towing the sheerlegs *Arend* (200 t. lifting capacity). A chartered coaster with salvage gear like pumps, lifting tanks, welding equipment, diving gear etc. was send from Maassluis. The salvage vessels *Walrus* and *Zeehond* were shipped out as deck load. The ocean tug *Tyne* was mobilised from Djibouti to Port Sudan towing the sheerlegs *Havik* (200 t. lifting capacity). *Zwarte Zee* towed the harbour / coastal tug *Atlas* (600 hp) via Boulogne where she collected the chartered Belgian salvage vessel *Titan V*. Svitzer mobilised the salvage tugs *Protector*, *Em. Z. Svitzer* and *Heracles* from respectively Aden, La Coruna and Messina. Smit's ocean tug *Poolzee* towed the sheerlegs *Condor* (lifting capacity 200 tonnes).

The tug *Blankenburg* followed towing the harbour tug *Alblasserdam* (600 hp). Svitzer mobilised four 180-tonne lifting tanks as well as the lifting craft *Thor* and *Odin* (lifting capacity 800 tonnes each) from Denmark towed by the Svitzer salvage tug *Sigyn*. A second cargo vessel - *Kaspar Robert Miller* – was chartered to bring additional salvage gear as well as the salvage vessel *Bruinvisch* and the motor launch *Osiris*. The vessel was to be kept in Egypt to serve as a salvage warehouse. Bugsier under a separate contract mobilised the *Energie* and *Ausdauer* (passive lifting capacity in tandem 4.000 tonnes; 600 tonnes active lifting over the stern each) towed by the salvage tugs *Wotan* and *Hermes*.

The 1967 blockade

In May, 1967, the entire film was rewound and started anew. This time the salvage was carried out by the U.S. Navy and Bugsier. The U.S. Government tasked the Supervisor Of Salvage (U.S. Navy) for the operation. Their salvage contractor Murphy Pacific Marine Salvage used the former *Energie* and *Ausdauer* – which had been purchased by the U.S. Navy several years earlier – for the job. *Crilley* and *Crandall* were mobilised to Egypt towed by the Luzon Stevedoring tug *Mariner* that remained in the area. The operation took seven months to complete. Over this period ten wrecks were removed. Bugsier used their salvage sheerlegs *Thor* and *Roland*, accompanied by the tugs *Baltic* and *Bugsier 26*. The U.S. Navy also used two of its salvage vessels – *Escape* and *Opportune* – for some additional work in the Canal.



The British Admiralty has raised the first section of the floating dock at Singapore which was first sunk by British troops when Singapore fell in 1942 and afterwards raised and used by the Japanese only to be sunk by an American air attack. A 'Bar' class boom defence vessel assisting in the salvage
newspaperclipping: Daily Telegraph 27-November1952

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A form of archeologic salvage by Risdon Beazley Marine: the hull of the iconic ss GREAT BRITAIN on board the Harms Bergung barge MULUS 3 towed by their salvage tug VARIUS 2 from the Falklands to Avonmouth, U.K., for restoration in 1970 *photo: coll. Job van Eijk*

Photo backpage:

The establishing of an ETV service in France was the direct consequence of the AMOCO CADIZ spill. A full report was published in TugeZine no. 6. It was not the first spill nor the first tanker that hit the French coast.

On 24 January, 1976 - 3 days after delivery by the builders Chantiers de l'Atlantique - the brand-new 277.599 dwt tanker OLYMPIC BRAVERY suffered total engine failure and grounded 1 nm northeast of Creac'h Lighthouse near Ushant Island. The tanker was en route Brest to Farsund in ballast. Salvage was impossible and the tanker broke her back and remained on the spot. The warning, however, was lost on the French authorities.

Years earlier, in 1967, the 118.285 dwt TORREY CANYON ran aground on the Seven Stones Reef. The root cause was an error in navigation which put the tanker in the wrong position when nearing the U.K. coast. Under time pressure for the delivery of the cargo the master decided to use a short-cut and the tanker was lined up for the passage. When approaching, the tanker was forced to change course to avoid an oncoming fishing vessel. Course-change was ordered but not carried through as the tanker was - unnoticed by the bridge watch - still on the auto-pilot. By the time this was discovered it was too late.

An LOF was signed with Wijsmuller which had a tug on salvage station in nearby Mounts Bay. The tanker, however, was stuck on a pinnacle of rock and could not be moved. A storm period finished her as she broke up and threathened to spill the entire cargo. The British Government then ordered the salvors to abandon the area and bombed the tanker in an attempt to burn the cargo still inside. But 120.000 tons of oil still polluted an enormous stretch of the British coast. And not only there, but the oil slick also crossed over to the Channel islands and France where a large part of the Brittany coast was polluted. The worst hit was a stretch of coast between the Ile de Batz and St. Malo. The French Government which had first ignored the threat and only loosely monitored what was happening had to put to work plans that had been drawn up in case of war. Like the British Government that claimed successes with some clear beaches that were in fact not hit because the direction of the wind had changed. Rescued by an Act of God as it were.

The main photo shows the wrecked AMOCO CADIZ (photo: Marine Nationale). The insert shows schoolchildren on holiday from Paris put to work clearing the beaches - by hand (newspaperclipping)