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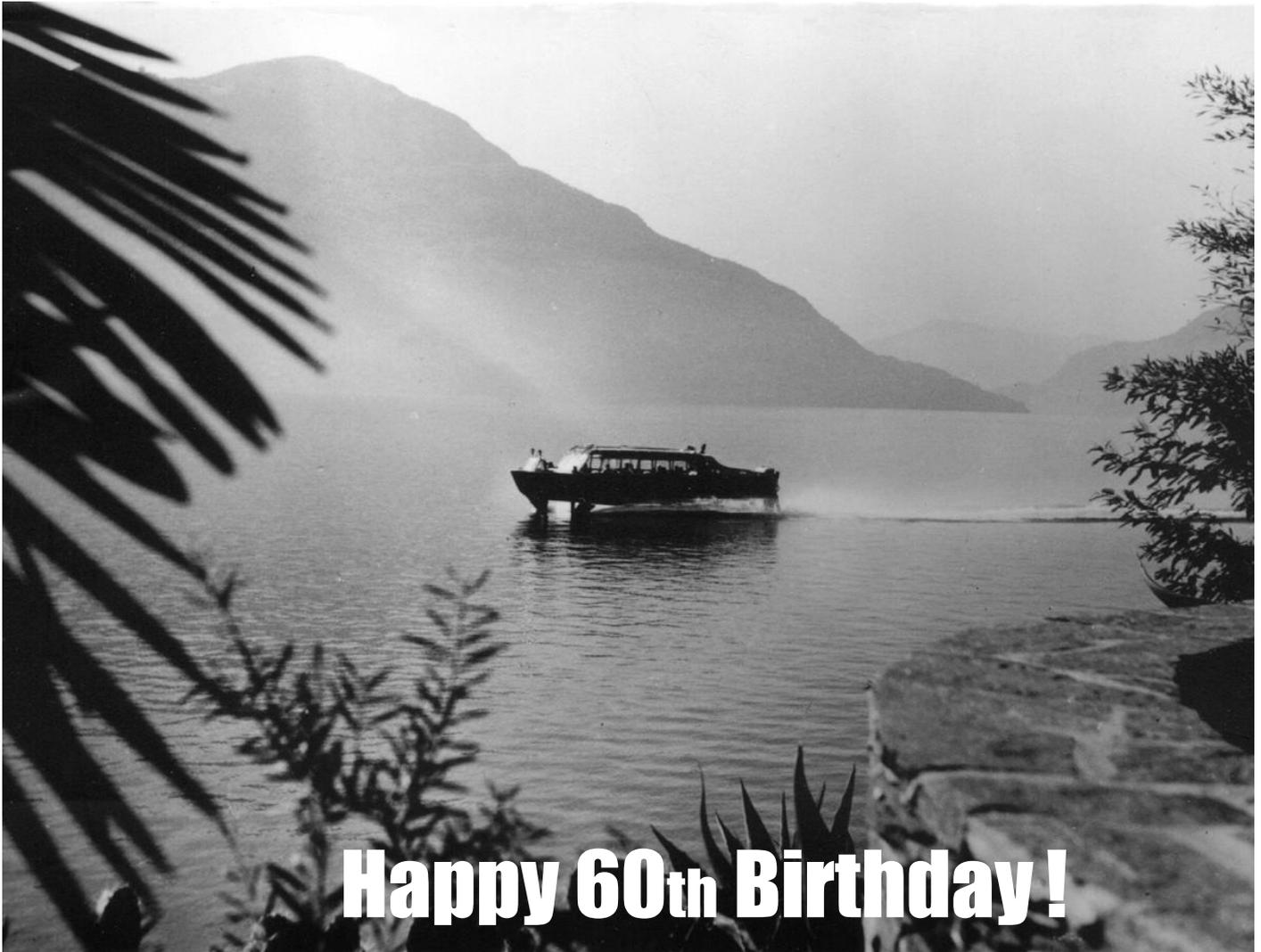
RHS 160

versus

PTS 75

2013 : 60 years with the commercial hydrofoil

But first...



/ SUPRAMAR AG photo

Happy 60th Birthday!

A rare and beautiful image of the Supramar PT.10 *Freccia d'Oro* on Lake Maggiore in days gone by.

It is sixty years ago this May that the commercial hydrofoil was born. On May 15, 1953 the 10 t, 30-seat wooden vessel entered service between Locarno, Switzerland and Stresa, Italy. The popular but not trouble-free test service ran for two summer seasons following which *Freccia d'Oro* was transferred to the Supramar headquarters on Lake Lucerne and used as a demonstrator and test craft for the development of its successor, the PT.20. Later still, having been stripped of its foils, the vessel was acquired by a hotel and used for sightseeing trips on the scenic Lake for its guests.

Unfortunately this unique little hydrofoil was not considered worth preserving at the time and it was finally scrapped in the late 1960s. Perhaps if they had known then what we know now it would have still been around.

But there are still hydrofoils present on Lake Maggiore in 2013, as indeed on Lakes Como and Garda. Navigazione Laghi operates a total of ten Rodriguez hydrofoils built between 1977 and 1989. Of these three remain on Lake Maggiore; two of the RHS 150SL type and one RHS 150FL. **cff**

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THE ORIGINAL PERIODICAL ABOUT THE HISTORY OF HYDROFOILS, HOVERCRAFT, CATAMARANS AND SURFACE EFFECT SHIPS, THEIR BUILDERS AND OPERATORS WORLDWIDE.

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COVER : RHS 160 *DIOMEDEA* AND PTS.75 *ROSA*. PHOTO TIM TIMOLEON and VOSPER THORNYCROFT.

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If you were to rank the Top 10 most beautiful hydrofoil designs ever to make it beyond the drawing-table, what would they be? According to this author, among the first on that list would be the Rodriguez RHS 160.

The design came at a time with much activity on the hydrofoil front, and not only in Messina. Simultaneously with the appearance of the RHS 160 in 1974, Boeing rolled out its first Jetfoil in the U.S. and in the U.K. Vosper Thornycroft delivered its first and, as it would prove, only commercial hydrofoil, the Supramar PTS.75 prototype. Also, Hitachi Zosen continued building PT.50s in Japan, which it had been doing since the early 1960s, and production and development in the USSR was not resting on its laurels. Conversely, things were not looking quite so bright for the other Messina-based hydrofoil builder Seaflight, which had been building the relatively small P 46 and H 57 designs since the mid-1960s. In 1973 the yard's larger L 90 prototype was ready to be tested and this was expected to go into series production along with other new designs, including for the military market, but the scheme failed to take off and by the late 1970s the yard had ceased to exist.

THE 9 LIVES

O F T H E

RHS 160



PAGE 3 : *Aliscafi SNAV's May W Craig and Princess Zoe (behind, left) were shipped overseas in 1987 to operate in the Caribbean. Both vessels were back in Italy by early 1989*
 / RODRIQUEZ CANTIERE
 NAVALE photo

The RHS 160 was the fourth design in the RHS range of hydrofoils developed by Rodriquez to replace the Supramar PT.20 and PT.50 types which the shipyard had built with success since 1956. However, with time as Rodriquez grew stronger and became synonymous with hydrofoils – rather than Supramar, which was of course designing the craft, not building them – the company started to move away from the Swiss firm. It independently modified the original product, finally resulting in the refined RHS series, and towards the end of the 1960s the business relationship with Supramar was interrupted. Not without legal skirmishes.

The first RHS 140 and RHS 110 had been completed in 1971 and the RHS 70 the following year. The 32-ton, 22.2 m RHS 70 and 64-ton, 28.7m RHS 140 were immediate successors to the PT.20 and PT.50, respectively, whereas the 54-ton, 25.6m RHS 110 was a new in-between.

When the 85-ton, 31m RHS 160 was brought out in 1974, the yard was known as Cantiere Navaltecnica but it would later revert to its family name. Also in 1974, Carlo Rodriquez, son of the founder of the Leopoldo Rodriquez Shipyard, passed away.

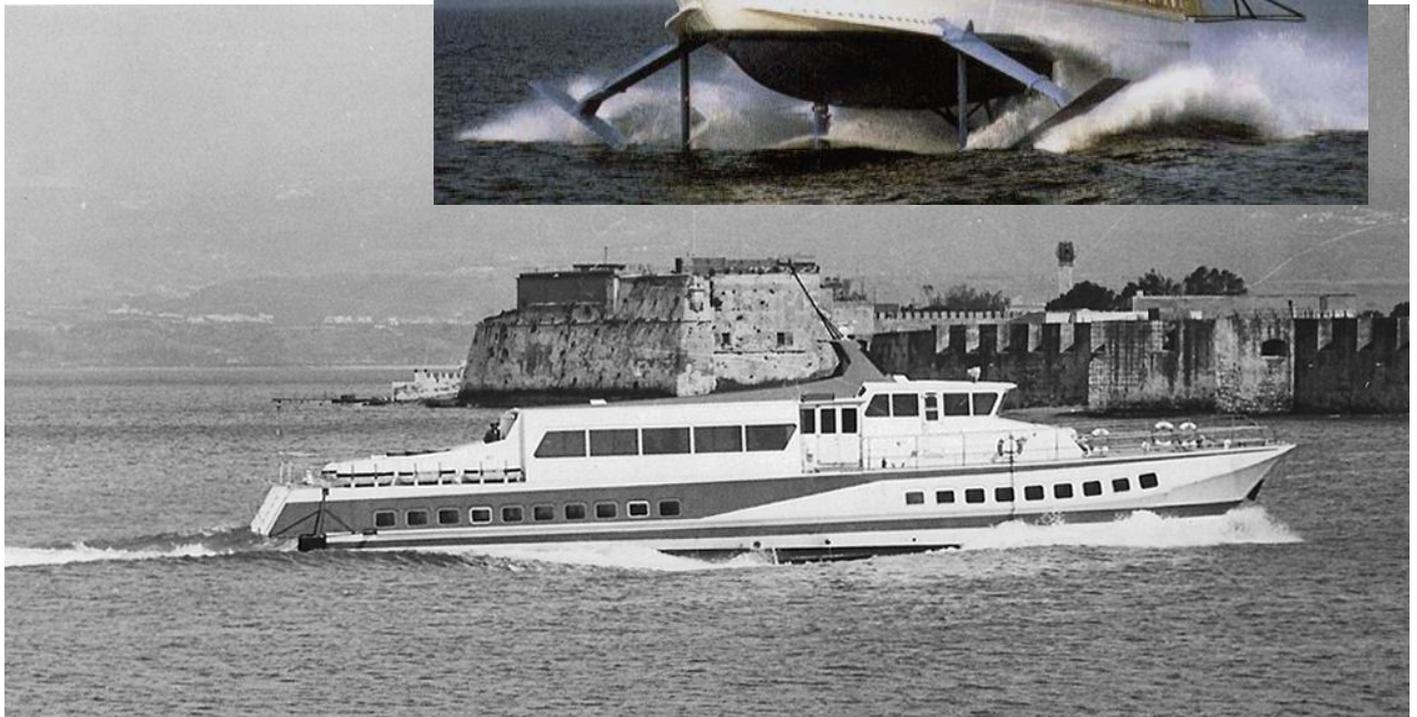
Nine elegant lives

A total of nine RHS 160s were built between 1974 and 1982. Of these six originally entered service with four operators in Italy, with the remainder being sold in Hongkong, the U.K. and Mexico. Over the years the vessels changed hands, including the Hongkong unit which was imported back to Italy, but all have now been retired. The two non-Italian RHS 160s were scrapped years back, whereas the remainder are all believed to still exist – admittedly, for the most part if only as shadows of their former selves resting ashore in various stages of being demolished.

Below : *Diomedea was the second RHS 160 completed and entered service in 1975 with Adriatica di Navigazione but was originally ordered for operation in Hongkong*
 / ADRIATICA DI NAVIGAZIONE photo



Below : *One of the first RHS 160s built, most likely Lilau for Far East Hydrofoil Company, seen on pre-delivery trials in Messina*
 / GIOVANNI PEDITO photo





Above : The well-proportioned RHS 160, represented here by Caremar's Algol / CANTIERE NAVALTECNICA photo

In comparison to the contemporary PTS.75, exteriorwise the RHS 160 was superior in being very well-proportioned for its size, featuring elegant lines with a nice flow from the bow to the stern. This was further emphasized by the simple and very becoming livery prevailing at the time. The one objection to this statement may be that on some less well thought-out (later) colour schemes and seen from certain angles the superstructure aft of the wheelhouse, i.e. the belvedere saloon, may appear a bit boxy.

In its standard configuration the RHS 160 would be laid out for 160 passengers, 46 of which in the main deck saloon, which was more than on the RHS 140 but less than on the RHS 110. Each of the forward and aft cabins on lower deck seated 57 and all three saloons were equipped with a toilet. Higher-capacity versions were offered, for instance a 200-seat commuter variant where simpler, light-weight seating would be substituted and the luggage space and possibly one toilet were omitted, but none such was ever delivered.

For the first time on a Rodriguez design, the bow foil was of the W-type rather than the standard V. The craft featured a bow rudder for improved manoeuvrability which worked simultaneously with the aft rudders. However, not all RHS 160s were fitted with supporting struts on the bow foil. Power was provided by a pair of MTU 12V 652 TB 71 diesels and normal cruising speed was 34–35 knots.

Deliveries

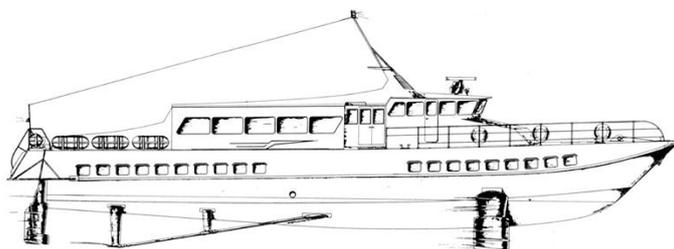
The first RHS 160, *Lilau*, entered service with Far East Hydrofoil in Hongkong in 1974. This operator also

introduced the first PTS.75, *Rosa*, built in England under license to Supramar that same year and already had a fleet of Hitachi and Rodriguez-built PT.50s and Rodriguez RHS 110s.

The first two production RHS 160s were originally ordered by FEH's competitor Hongkong Macao Hydrofoil and although the first of these advanced to actually carry the name of *Flying Phoenix*, the operator subsequently decided against adding a new design to its fleet of PT.50s and RHS 140s and since other customers were in line for the RHS 160, Rodriguez (Navaltecnic) agreed to annul the contract.

Thus, the one craft entered service with domestic operator Adriatica di Navigazione as *Diomedea* between ports on the south Adriatic coast and the island of Tremiti in 1975, joining a Rodriguez PT.50 delivered in 1964. The other, *Condor 5*, went to Channel Islands based operator Condor the following year to operate its seasonal route network linking Guernsey, Jersey and Sark with Saint Malo on the French north coast, first introduced also in 1964 using a Rodriguez PT.50. Since then the company had leased another PT.50 and acquired a pair of RHS 140s in 1971 and 1974.

During winter lay-up following its first season in the English Channel, supporting struts were fitted to the bow foil on *Condor 5*. Incidentally, the Condor hydrofoils and *Condor 5* in particular appeared in the intro to the BBC television series Bergerac, set in the Channel Islands, and also in some of the episodes in the 1980s.





Above : *Condor 5* as delivered to Channel Islands operator Condor in 1976. Supporting struts to the forward foil were subsequently fitted (*compare to Alioth on page 7, etc.*) The vessel, as in the case with *Diomedea*, was initially ordered by Hongkong Macao Hydrofoil / KEVIN LE SCHELLEUR photo

Below : *Aljumbo* was delivered to Aliscafi SNAV in 1979 and was one of two RHS 160s operated by the company. The other was the former *Lilau* acquired from Far East Hydrofoil and renamed *Aljumbo Ustica* in 1984 / Photo collection of CFF



No RHS 160 was delivered in 1977, but in 1978 state owned Caremar in the Bay of Naples took delivery of its first, *Algol*, and a second, *Alioth*, joined it the following year. Caremar was established in 1976 and added its first hydrofoil, an RHS 140, to its fleet of conventional ferries in 1977.

Also in 1979 Aliscafì SNAV, the associated operating company of the Rodriguez shipyard, received its first RHS 160. This, *Aljumbo*, was initially to have been introduced on a seasonal international test route across the Adriatic between Italy and Yugoslavia but reportedly instead was put into service on the opposite side of Italy, between Civitavecchia and Olbia in Sardinia. A confusing detail about this vessel is that it did also carry the name of, and was sometimes being referred to as, *RHS 160*.

Further south, Siremar took delivery of two RHS 160s in 1980, *Botticelli* and *Donatello*, for its route network out of Trapani in north-west Sicily to the Egadi Islands and Milazzo in the north-east to the Eolie Islands, much frequented by tourists in the summer. Like Caremar in Napoli, Siremar was formed in 1976 but unlike the former it took over from a privately owned company a PT.50 originally delivered in 1961 to an operator in Yugoslavia and a PT.20 from 1968.



Above : Alioth, one of Caremar's pair of RHS 160s, approaching the photographer head on
/ NICK PATRICK photo



Left : *The last RHS 160 built Nicte-Ha was delivered in 1982 to a customer in Mexico. Apparently the hydrofoil saw very little service here*

Bottom : *Caremar's Alioth boarding at the Molo Beverello terminal in downtown Napoli on a warm summer's evening in the late 1980s / TIM TIMOLEON photo*

The last RHS 160 built, *Nicte-Ha*, was exported to Mexico in 1982, joining an RHS 150 delivered two years earlier. Reportedly the vessels were state-owned and briefly operated between Cancun on the north-east tip of the Yucatan peninsula and the island of Cozumel but very little information on this operation has been confirmed.

Careers

Of the nine RHS 160s built, *Lilau* and *Alijumbo / RHS 160* were to have the most changing fortunes during their careers.

By 1982 Far East Hydrofoil had replaced all of its surface-piercing hydrofoils with an all-Jetfoil fleet, putting the former up for sale. Thus, its sole RHS 160 returned to Italy in

1984 having been acquired by Aliscafi SNAV and renamed *Alijumbo Ustica* was put into service on the company's long distance route between Napoli and Sicily via the Eolie Islands along with *Alijumbo / RHS 160*.

Two years on, anticipating a transfer to the Caribbean, in 1986 *Alijumbo Ustica* was renamed *Princess Zoe* and as such was briefly used in an anti-pollution test programme in the Mediterranean Sea together with SNAV's other RHS 160, both having been equipped with spray booms. By the time the refurbished vessels were shipped overseas, in 1987, to operate in the West Indies with Nautical Trading the latter had also been renamed, *May W Craig*. Both hydrofoils were back in Italy with SNAV in early 1989.





Above : A frogman's view of Siremar's *Donatello* while idling at Trapani in 1992
/ TIM TIMOLEON photo

Below : . . . and the Sicilian operators' other
RHS 160 *Botticelli* arriving at Trapani on an
afternoon service from the Egadi Islands five
years earlier, in September 1987
/ TIM TIMOLEON photo



According to reports, in 1994 *Princess Zoe* was acquired by Spanish operator Flebasa Lines and renamed *Rapido de Denia* but no record indicates it actually entered service with them. In 1996 the vessel was purchased by Italian fast ferry operator Ustica Lines, which had been formed three years earlier, and renamed *Calarossa* was put into service in Sicily.

In 2001 it was being used on a seasonal service in the north Adriatic between Trieste and Pola in Croatia. From summer 2004 the vessel was leased to Alimare, a newly established company, for a new service linking Reggio Airport on mainland Italy and Taormina in Sicily with the Eolian Islands. Earlier that same year the company had bought Ustica Lines' only RHS 140 and introduced it between the Airport and Messina.

Calarossa is currently laid up at the Ustica Lines maintenance yard in Sicily.

In 1990 SNAV had formed Aliscafi Scandinavia and the following year the company relocated *May W Craig* and one of its RHS 200 hydrofoils north to Denmark to operate between Århus and Kalundborg. Marketed as Citti Ships, this is not to be confused with the RHS 160F carrying this name and which was indeed intended for the route. This service carried on until early 1993 following which the vessels were returned to Italy and *May W Craig* was sold to Maltese interests and renamed *Chick*. It was acquired by Ustica Lines in 1996, along with *Calarossa*, and renamed *Linosa*. It was retired in 2006 and is believed to be still sitting ashore in Messina.

Condor 5 stayed with Condor for seventeen years. In 1991 the vessel was re-engined and extensively refurbished. Having become surplus to requirement due to new

acquisitions by the company, it was sold in early 1994 to Hermes in Greece and renamed *Iptamenos Hermes III* entered service between Rafina and islands in the Cyclades archipelago. That same company had also purchased Condor's sole RHS 140 the previous year as well as a pair of RHS 70s from another British operator. *Iptamenos Hermes III* was sold on to another Greek company, Speed Lines, in 1998 and renamed *Santorini Dolphin II*. It was finally broken up near Piraeus in November 2004.

The remaining RHS 160s, except for the one exported to Mexico, all stayed put in Italy during their active life, although not necessarily on the same route. Some reshuffling has indeed taken place over time. In 2004 Adriatica di Navigazione was absorbed into the Tirrenia group of companies, including also Caremar and Siremar, and *Diomedea* was relocated to work also with these operators. It was retired in 2008 and is presently sitting high and dry in the port of Napoli.

The two Napoli based craft *Algol* and *Alioth* were transferred from Caremar to Siremar at the beginning of the new millennium. With this move all Italian RHS 160s were now operating in Sicilian waters. Starting in 2005, Siremar entered upon a vast renewal programme by taking delivery of the first of six Foilmaster hydrofoils allowing for the older hydrofoils to be retired or sold. In 2007 *Algol* was acquired by Diesel Power Solution Lines and introduced on the short cross-Straits of Messina route between Reggio and Messina, aimed at commuters. This service was rather short-lived and the vessel was put ashore in Messina, joining other retired RHS 160s and RHS 140s. **cff**

Below : *May W Craig* was operated in Denmark between Århus and Kalundborg by Aliscafi Scandinavia in the early 1990s. It is seen here approaching Kalundborg in August 1992 / TIM TIMOLEON photo





Above : *Condor 5* was sold in Greece in 1993 and renamed *Iptamenos Hermes III* entered service with Flying Hermes. Still sporting the becoming Condor colour scheme it is seen here in 1994

/ GEORGE KOVAIS photo

THE 9 LIVES

OF THE

RHS 160

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Below : Aliscafi SNAV's *Princess Zoe* coming off foil just outside the entrance to the marina at Mergellina, Napoli, in 1992.

SNAV's special liking to dark colours on the hull was no more a success on the RHS 160 design than on any of its other hydrofoils

/ TIM TIMOLEON photo



In 1970 the design team of Supramar A.G. in Switzerland unveiled details of the PTS.75 hydrofoil. This was to fill the gap between the PT.50 – which of course had gained much success since its appearance in 1959 having been built by, first, the Leopoldo Rodriguez shipyard in Italy and later also by Westermoen Hydrofoil and Hitachi in Norway and Japan, respectively – and the much larger PT.150, the prototype of which had been launched in Norway in 1968. Prior to this, Supramar had presented the outline for a PT.70 which basically was a stretched PT.50 seating up to 155 passengers in a short-distance, commuter lay out.

In 1972 Supramar received an order from Far East Hydrofoil in Hongkong for the first PTS.75. It was not to be built at any of the Supramar licensed yards previously used, however, nor locally by Pacific Island Shipbuilding with which Supramar signed a licence agreement also in 1972. The agreement was subsequently turned into a wholly-owned subsidiary company, Supramar Pacific Shipbuilding, which was to construct the Supramar range of hydrofoils for the South East Asia market. Instead, the prototype was to be

built in Portsmouth in the U.K. by Vosper Thornycroft, an established ship repair yard and builder of vessels for the Royal Navy and others. The PTS.75 was the first, and only as it would turn out, hydrofoil to be built by Vosper Thornycroft but it was not the first time the company was involved in the fast ferry sector as a few years earlier it had taken on designing and building the VT 1 hovercraft, a 270-seat (or mixed passenger/vehicle) semi-amphibious air cushion vehicle (ACV).

The PTS.75

The 85-ton PTS.75 Mk III, to give the final design its full designation, had a length overall of 30.4m and was powered by two MTU MB12 V652 SB70 supercharged diesels, able to give the loaded craft a cruising speed of 35–36 knots. As a standard, the design featured the Schertel–Supramar air stabilization system, indicated by the S in the designation, for improved seaworthiness and riding comfort. This was an advanced version of the stabilization system that had been tested in 1967 on a re-equipped Westermoen-built PT.50 delivered six years earlier.

The two lives of the PTS 75





Above : *The first PTS.75 built, yet to be named Rosa, on pre-delivery trials in England in 1974*
/ VOSPER THORNYCROFT photo

In a high-density variant, for short and medium distance routes and/or where the amount of passengers' luggage is limited, such as the Hongkong–Macau route for which it had been ordered, the PTS.75 would carry up to 164 passengers in three saloons; 47 in the belvedere saloon, 55 in the lower forward and 62 in the lower aft saloons. In its standard configuration seating were for 135 with only 19 of these being on the main deck, allowing for a spacious foyer with luggage space and three toilets and a bar to be fitted. Boarding was through side doors aft of the wheelhouse, which was not raised. A small weather deck was located aft of the belvedere saloon.

The vessel was launched in May 1974 on which an extensive trials programme was carried out in the Solent in southern England. It was shipped from Southampton to Hongkong in November and entered service with Far East Hydrofoil on the 36-nautical mile Hongkong–Macau route the following month having been named *Rosa*.

Almost simultaneously the operator introduced into service also the Rodriguez RHS 160 prototype. Being contemporaries, it is interesting to study the similarities and

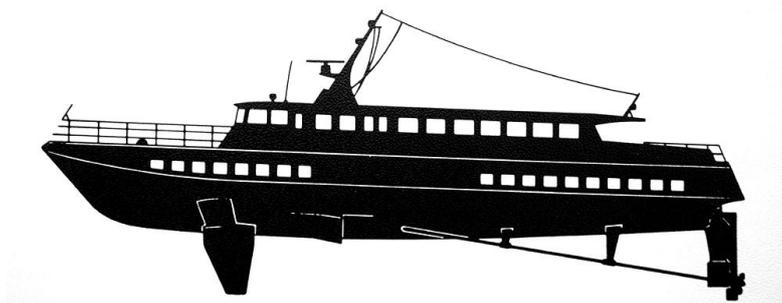
differences in these two designs. For instance, it is safe to say that the Italians' reputation within excellent design did also include hydrofoils. After the cooperation between Supramar and Rodriguez came to an end in the late 1960s, little had been done to the exterior appearance of Supramar's hydrofoils, including the PTS.75.

One more and then no more

A second PTS.75 Mk III was completed in February 1977. Likewise ordered by FEH, this was indeed built by Supramar Pacific Shipbuilding. The vessel took over the name previously carried by a PT.50, *Patane*, which had been sold in 1975 to an operator in Sydney, Australia. A third PTS.75 was planned but never built.

Shortly after the introduction of the first PTS.75 and the RHS 160, in April 1975 Far East Hydrofoil took delivery of two Boeing Jetfoil 929-100 hydrofoils. This move into the fully submerged hydrofoil field was to prove the beginning of the end as far as the company's surface-piercing hydrofoils were concerned. Thus, having decided to

PAGE 12 : *The second and last PTS.75 was built locally in Hongkong by Supramar Pacific Shipbuilding and entered service in 1977*
/ SUPRAMAR AG photo



Right : Both PTS.75s spent more of their lives out of than in the water. Having been acquired by a company based in the People's Republic of China, *Patane* was renamed *Nan Sha No. 1* in 1992



streamline and go all-Jetfoil, by 1982 the traditional hydrofoils had all been retired and laid up, in the case of *Rosa* and *Patane* after only seven and five years of service. They remained being so for the next four years until finally sold to a company in the People's Republic of China in 1986.

It would appear only the second PTS.75 built ever returned to service. Refurbished and renamed *Nan Sha No. 1* it was introduced between Kowloon and Nan Sha by Nan Sha Shipping in 1992. In this role it was not over-utilized

either and by 1995 it was no longer on the operator's roster of active craft, having been surpassed by the introduction of catamaran newbuildings built in Australia..

Very few details on the two PTS.75s have been revealed over time. What appears to be fairly recent documentation, however, shows *Nan Sha No. 1* sitting ashore, externally intact, in a shipyard in China or possibly Indonesia.

No details of the other PTS.75 have been confirmed. **cff**

RHS 160	PTS 75
Length over all	
31 m	30.4 m
Width over foils	
12.6 m	11.6 m
Draught, hullborne	
3.7 m	4.0 m
Draught, foilborne	
1.35 m	1.96 m
Displacement fully loaded	
85 t	83.5 t
Cruising speed	
35 knots	36.5 knots
Maximum speed	
39 knots	38.5 knots
Passengers, standard config.	
160	135
Number built	
9	2
Years delivered	
1974–82	1974 + 1977
Status	
No longer in service	



Above : RHS 160s *Algol* and *Alioth* laid up in Messina in October 2010. *Algol* was last operated by Diesel Power Solution Lines across the Straits of Messina, having been acquired by that company from Siremar in 2007 / TOMASELLO LETTERIO photo

Below : Ustica Lines' pair of RHS 160s *Linosa* and *Calarossa* in brighter days when both were still on the active roster, sitting in the company's maintenance yard in Trapani during off season / NICK PATRICK photo



Below : The sad remains of *Santorini Dolphin II*, once the proud *Condor 5*, nearing completion of being broken up at Perama, Greece in November 2004
/ HARRIS ALEXANDRIS photo

Bottom : The dark clouds resting over the Straits of Messina certainly add to the feeling of a not very honourable burial for *Donatello*
/ TOMASELLO LETTERIO photo

... and end up

