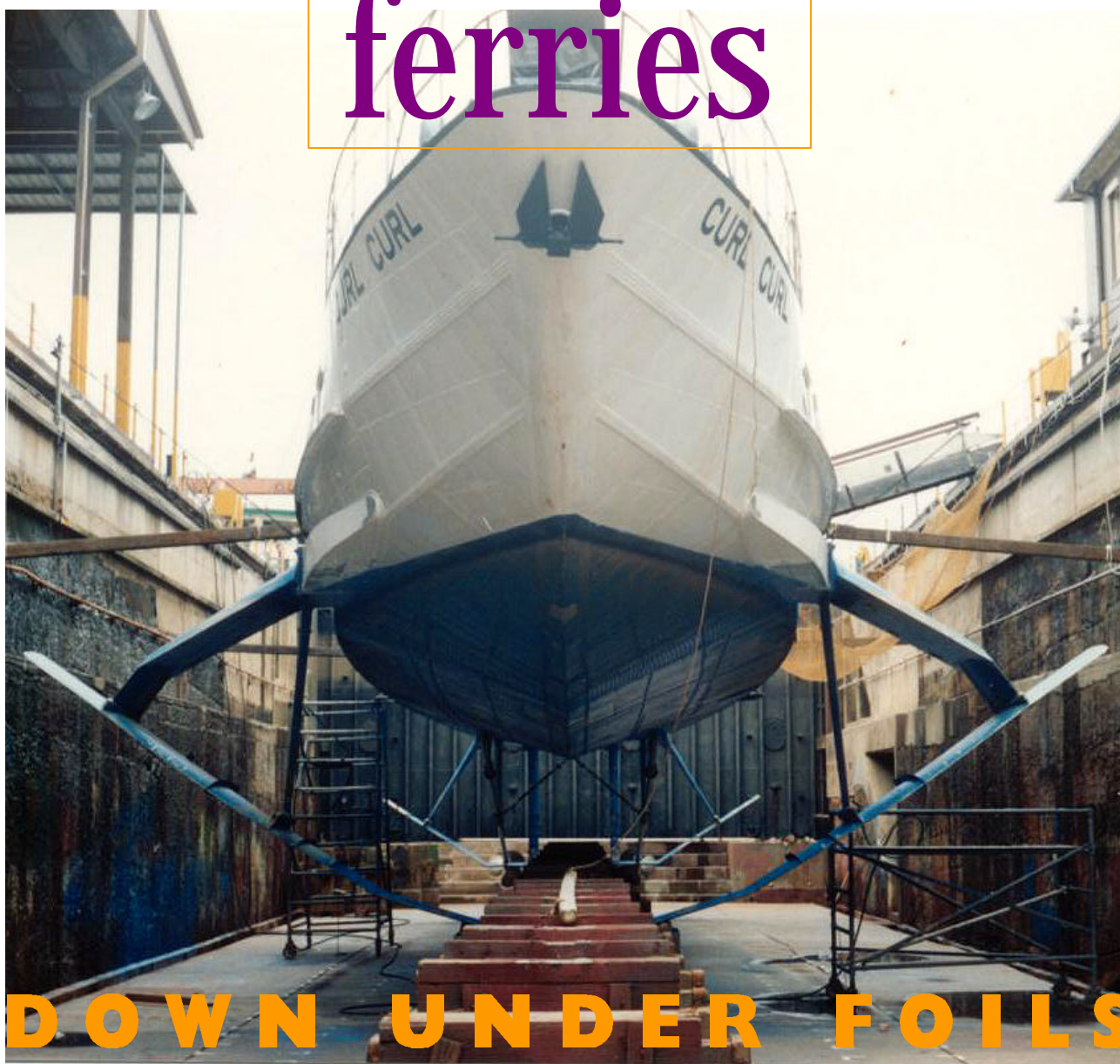


JUNE 2002 ■ SPECIAL

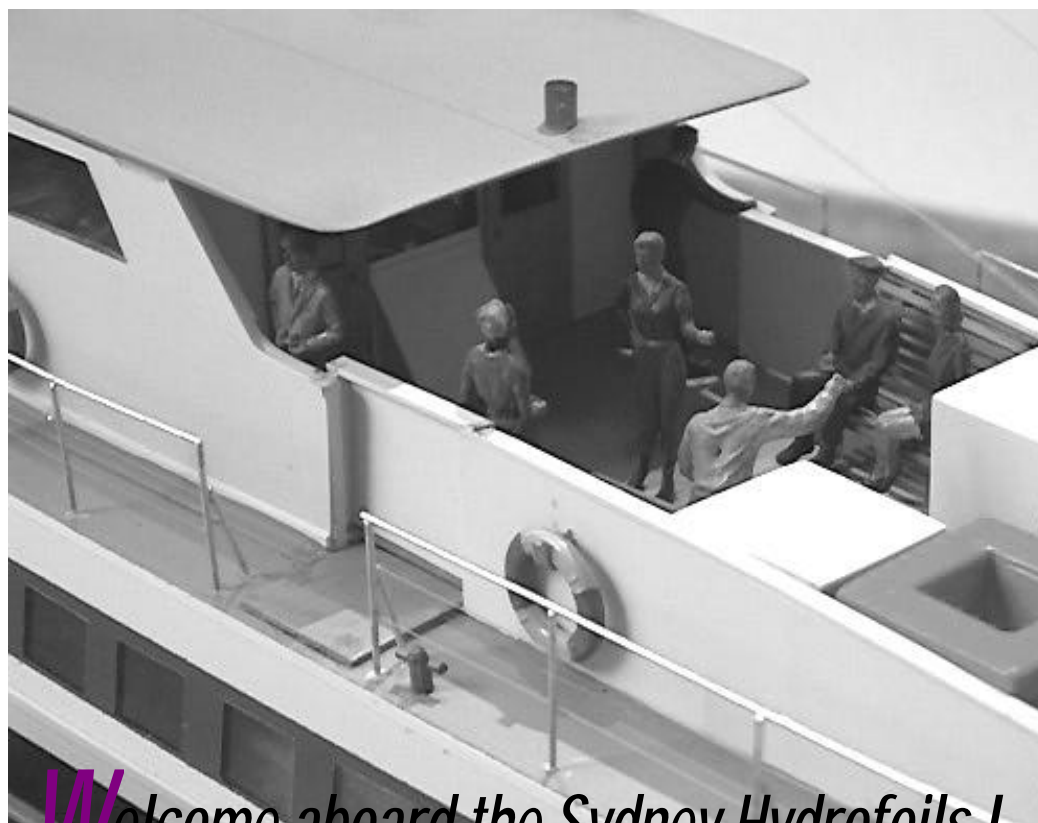
classic fast ferries



DOWN UNDER FOILS

INCLUDES NEW 7-PAGE **SCALE**
BOX ARTICLE

THE ONLY PERIODICAL ABOUT THE HEYDAY OF PASSENGER HYDROFOILS, HOVERCRAFT & CATAMARANS - PLUS RELEVANT NEWS
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PHOTO ON COVER: MARTIN GRIMM



Welcome aboard the Sydney Hydrofoils!

The first part of this SPECIAL edition of *classic fast ferries* is a reprint of an article by Martin Grimm which appeared in the August 2000 *cff* (No. 5/2000). Also a 'Special', it was published to coincide with the 2000 Olympics in Sydney, Australia, commemorating the long since defunct hydrofoil service on Sydney harbour which, introduced in January 1965, lasted for almost 27 years.

As, regrettably, that issue is no longer available we've found it appropriate to do a rerun, both for the sake of new readers and the author (as well as the good story in itself!).

The original text was left untouched, whereas the article layout has been completely revised, including more and larger or improved photos.

In addition, the present 'Sydney Special' holds a completely new article about hydrofoil modeling

written by Ian Wrenford, a member of the Australian Plastic Modellers Association.

He took a set of plans, numerous photographs, some good advice from friends and strangers, sheets of styrene and various artist's materials, etc. and turned it into an excellent 1:72 scale static model of the former Sydney PT.50 hydrofoil *Fairlight*. And in less than three months too.

Now, there's our two good motives for doing another *cff Special*. We are sure you can think of more . . .

Also read...

the story about another hydrofoil on Sydney Harbour – *Manu Wai* – in the December 2001 *classic fast ferries*. A private venture, this was not related to the State Transit hydrofoil operation and is not included here.

cover:

A hydrofoil out of the water always makes an impressive sight, especially when viewed from down under.

Curl Curl was the sole RHS 140 in the Sydney fleet (MARTIN GRIMM)

OPPOSITE : Passengers enjoying the scenery from the open air deck on PT.50 *Fairlight* (IAN WRENFORD)
BELOW : Rodriguez RHS 160F *Sydney* was the last hydrofoil to be introduced on the 7-mile Sydney Circular Quay to Manly run.
It operated here for only six years, 1985-1991 (STEPHEN JONES)

Seven Miles from Sydney...



This page: Hitachi PT.20 *Manly* as delivered passes the easily recognizable Harbour Bridge, also nick-named 'The Coat Hanger' (*HITACHI*)

Opposite: Sydney's first Rodriguez PT.50, *Fairlight*, during pre-delivery trials in the Straits of Messina in 1966 (*RODRIQUEZ*)

BY MARTIN GRIMM

And a Thousand

For those who have the opportunity to visit Sydney during the 2000 Olympics, they will certainly need to take the time out to visit Sydney Harbour and its landmarks such as the Harbour Bridge (also known locally as the 'coat hanger') and the Opera House. A ride to Manly on the harbour ferries should also not be missed.

But our visitors will have missed out on the glory days of hydrofoil operations on Sydney harbour.

In fact, part of that history ended very nearby to the site of the Olympic games...

The Early Years

The tale all started with the arrival of the Supramar A.G. designed PT.20 *Manly* in Sydney late in the evening of Wednesday 30th December 1964 on board the Japanese freighter *Kanto*

Maru. She was unloaded the following day at Glebe Island freight terminal.

Manly had been built at the Hitachi Kanagawa shipyard, Japan. A Supramar licensee, Hitachi had been building hydrofoils to their designs since 1961 and *Manly* was the eighth of the PT.20 type completed by the yard. The Port Jackson and Manly Steam Ship Company Limited (PJ&MSC) had purchased her at a cost reported to be around 140,000 Australian Pounds. *Manly* was the first hydrofoil introduced in Australia.

On New Year's Day in 1965 *Manly* was already running foilborne outside the heads of Sydney harbour on the first of a series of trials. In the following days further demonstrations were made for the local maritime authority. The president of the Maritime Services Board, Captain J. H.





Miles from Care

Simpson, said that Sydney had to “keep up with the times” and as such he wanted to witness the vessel’s capabilities before deciding whether any operating restrictions would be necessary.

Due to initial concerns about the manoeuvrability of the hydrofoil in the crowded waters of Sydney harbour during weekends, *Manly* was initially restricted to hullborne operations in the main harbour area during the weekends. This restriction was lifted within three months.

A public demonstration run with VIPs on board followed and on the morning of Thursday January 7th the hydrofoil commenced its scheduled commuter service between the northern Sydney coastal suburb of Manly and Circular Quay at the heart of the city. With a speed of 34 knots, *Manly* could complete the seven nautical mile journey from Manly to Circular Quay in 17 minutes. She had seating for 72 passengers. Tickets for the first scheduled trip were already on sale the previous day and the lucky first passenger on the service was Mr. Alfred Garnett, a Sydney resident.

There was an early hiccup in the service when, only on the morning after it commenced its scheduled service, its bow foil nudged the wharf at its depot in Neutral Bay on Sydney harbour while the hydrofoil was going astern. But the damage was minor with the foil ram being torn from its mounting. The embarrassed new owners hurriedly unpacked the necessary spare parts from the crates of spares, which had arrived with the hydrofoil, and it was back in operation a couple of days later.

While the passenger wharves at Manly and Circular Quay had already been fitted with overhanging fenders to suit the PT.20, the berthing facilities were subsequently also improved at the depot so that a repeat incident could be avoided.

Small New Kid On The Block

The hydrofoil was of course a ‘new kid on the block’ as up to that point PJ&MSC had operated a number of traditional ferries on the Manly to Circular Quay route. These ferries were already around 40 years old and

The title, *Seven Miles from Sydney And a Thousand Miles from Care*, was adopted from old Port Jackson & Manly Steamship Company advertising at a time when *Manly* was still a get-away-from-it-all part of greater Sydney. Just seven miles from the heart of the city was this resort-like place where you could relax and forget about everyday life.



while they were quite grand in their time, had been left in a run down state by the mid 1960s and were starting to become unreliable. Patronage on the Manly to Circular Quay ferry service had also fallen in the face of improved road links. None the less, the ferries retained their share of devoted commuters, even after the introduction of the hydrofoil service.

One sceptical newspaper columnist was quick to point out that even if the hydrofoils could complete twice as many trips during the morning peak period than the conventional ferries, it would still take fourteen

PT.20 or seven PT.50 size hydrofoils to match the carrying capacity of the four much larger conventional ferries which could carry

some 4000 commuters to the city during the two hour morning peak period. This was of course a fair observation.

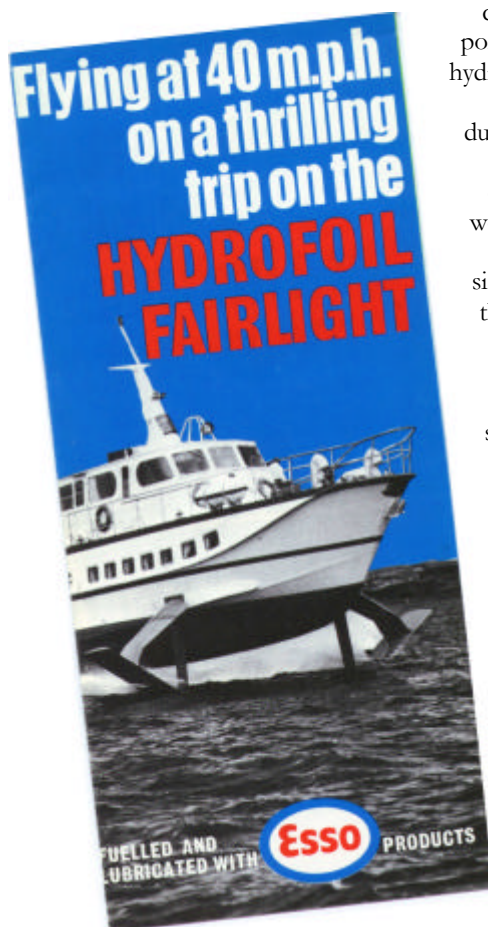
Many commuters indicated they could not afford the additional expense of the hydrofoil fare and would continue to use the conventional ferries. But

despite the additional fare of 3/ (three Shillings; Australian currency prior to 1966 was expressed

Above: The brand new PT.50 *Fairlight* (left) being raced against the still fairly new PT.20 *Manly* – and a less new traditional Sydney–Manly ferry. Note different approach in the paint schemes on the hydrofoils

Left: Leaflet promoting the new *Fairlight* (PJ&MSC / ESSO, both)

Opposite: *Manly* foils past a densely built-up area on the Sydney waterfront in 1969 (PETER CLARK)



as Pounds/Shillings/Pence), *Manly* was an attractive alternative for some businessmen who arrived at their destination around 15 to 20 minutes earlier than with the traditional alternative which took about half an hour or more to complete the trip.

Manly was intended as much as anything to trial the suitability of operating hydrofoils on the Sydney harbour run. But even when she was introduced the managing director of PJ&MSC, Mr. John C Needham, indicated that more and larger hydrofoils would be imported if *Manly* proved to be a success. At the time Mr. Needham indicated 150 passenger hydrofoils were already in operation overseas while designs with a passenger capacity of 300 were on the drawing boards. In the following years, the hydrofoil service did indeed expand while the conventional ferry service slipped into a long period of decline.

The initial schedule for *Manly* was for weekday departures from Circular Quay to Manly at 7:15, 8:10 and 9:00 in the morning and 17:05 and 17:55 in the afternoon. The return trips departing Manly at 7:50, 8:30, 17:30 and 18:20.

Also during the weekdays tourist excursions through the heads would depart from Manly at 9:45, 10:30, 11:15, 12:00 and 12:45 and from Circular Quay at 14:15, 15:00, 15:45 and 16:30, sea conditions permitting. While no services would operate on Saturday, 11 excursions were scheduled for Sundays.

The Sydney Foils At A Glance, 1965-1991

Manly	Hitachi PT.20, 1965
Fairlight	Rodriquez PT.50, 1966
Dee Why	Rodriquez PT.50, 1970
Curl Curl	Rodriquez RHS 140, 1973
Palm Beach	Rodriquez PT.50, 1975 (1969)
Long Reef	Rodriquez PT.50, 1978 (1967)
Manly	Rodriquez RHS 160F, 1984
Sydney	Rodriquez RHS 160F, 1985



As delivered, *Manly* had a two tone green paint scheme with a white superstructure. The craft was configured with 44 seats in the forward saloon, 8 in the mid saloon behind the helm position, and 20 in the aft saloon. The deeply padded aircraft style seats finished in a reddish brown synthetic cloth and individual adjustable air vents brought a new standard of comfort to the ferry run. The craft also featured a number of panoramic windows, with less pillars than those of a standard PT.20.

None the less, the craft was still small and the headroom was limited with a clear height of only about 1.68 metres in some places.

One Size Up

While *Manly* continued in service, a larger PT.50 – or PT.50/S as this variant was known – was ordered from Cantiere Navale Leopoldo Rodriquez (Leopoldo Rodriquez Shipyard) of Messina, Italy at a cost of A\$500,000.

This hydrofoil, named *Fairlight*, arrived in Sydney as deck cargo on board the freighter *Kloosterkerk* on the evening of 8th November 1966 and entered scheduled service four days later.

Fairlight had almost double the passenger capacity of *Manly* with seating for 140 passengers. Like her smaller sister, *Fairlight* was named after one of the northern suburbs of Sydney

and that was a tradition that continued for the hydrofoils as was the case with many of the ferries before them.

In February 1967, the company decided to test the demand for a hydrofoil service on Port Phillip Bay in Victoria. *Manly* made the coastal voyage south to Melbourne where she was operated on this trial service. This proved not to be particularly successful and after three months *Manly* returned to Sydney again.

As originally delivered, *Manly* was fitted with a rear foil featuring a single centreline rudder and a propeller mounted forward of the foil. The manoeuvrability with the single rudder was not really satisfactory and the propeller was frequently damaged by debris.

In 1970 the rear foil was replaced with one fitted with twin rudders and a revised shaft bearing arrangement which allowed the propeller to be mounted aft of the foil.

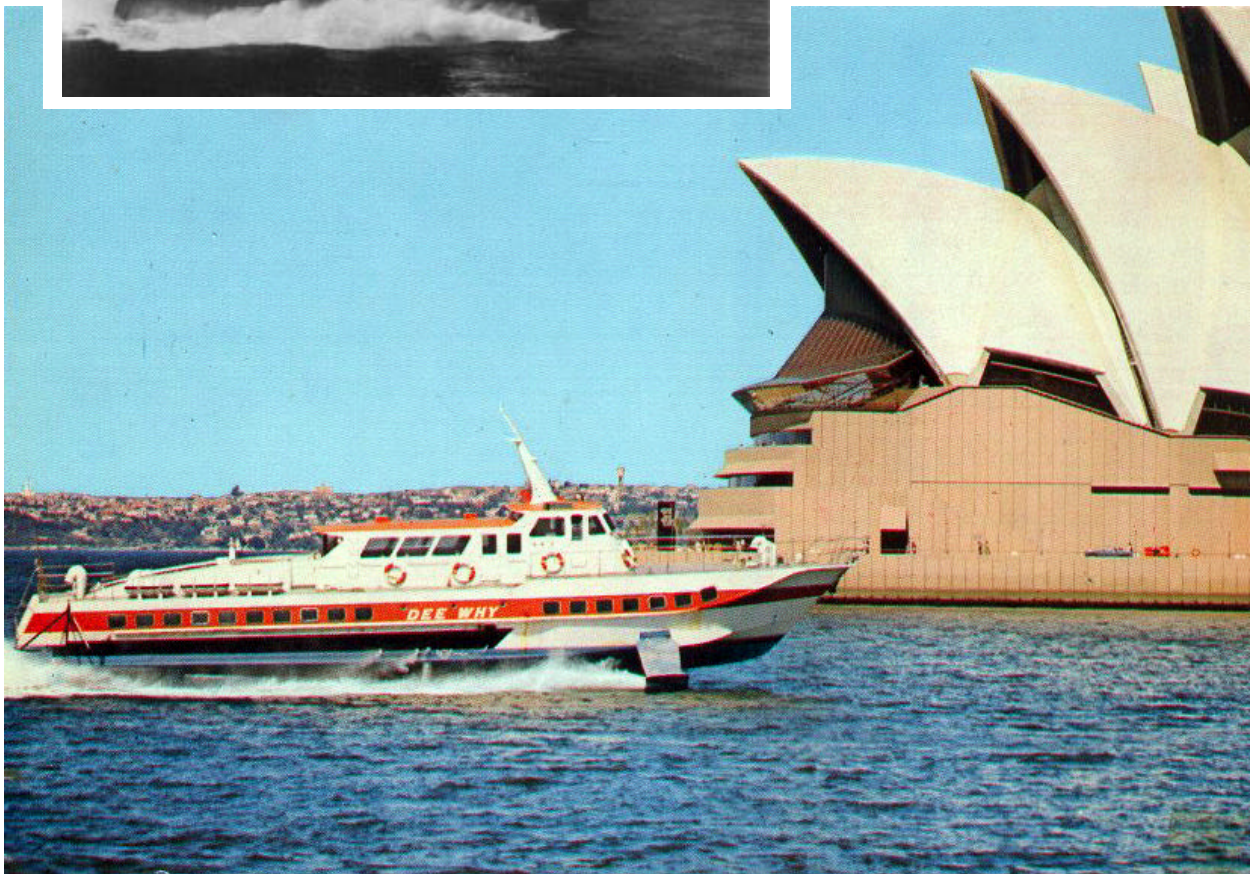
More Craft & Take Overs

The fleet continued to expand with the introduction of a further PT.50 built by Rodriguez, *Dee Why*, commissioned in May 1970.

By April 1973, *Curl Curl*, the first and only Rodriguez RHS 140 obtained by PJ&MSC, was introduced on the service.

Given that the route was so short and operated in relatively sheltered water, the crew for the hydrofoils was limited to one Master, one Engineer and one Deckhand.

With four hydrofoils now available, the company opened a new commuter run from the Quay up to Gladesville on the inner reaches of Sydney harbour in 1973. *Manly* was used for this service.



Opposite: (B&W photo) *Dee Why* on builder's trials off Messina in 1970 (RODRIQUEZ) and, of course, passing the Sydney Opera House. This was the last PT.50 to be built by Rodriguez, the superstructure foreshadowing the lines of the RHS 140, the first of which appeared the following year (POSTCARD)

Below: The sole RHS 140 in the Sydney fleet, *Curl Curl*, entered service in 1972 (MARTIN GRIMM)



Unfortunately, due to the unacceptable levels of wash and noise the hydrofoil generated when running up the Parramatta River and also because of the need for a backup vessel in the event of breakdowns of the other hydrofoils, the service was discontinued after 6 months.

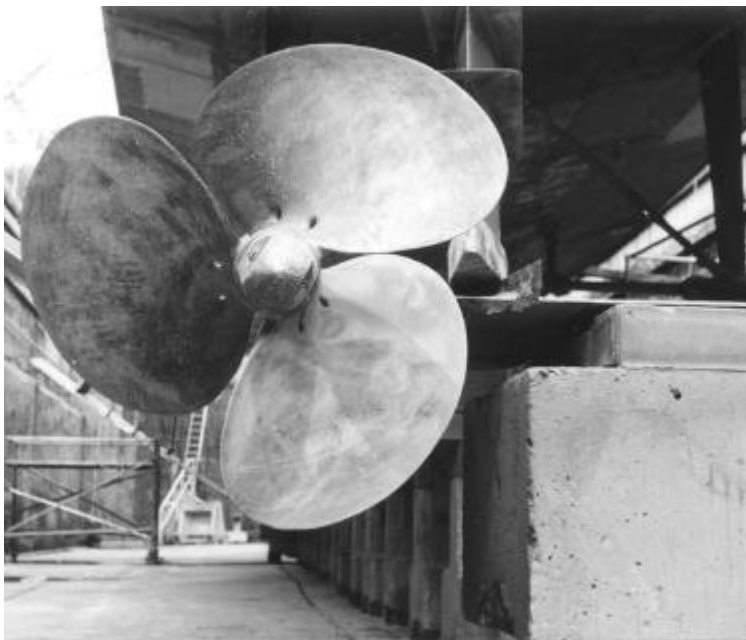
From then on the hydrofoils concentrated on the run to Manly, with the PT.20 serving as a reserve craft for the other larger hydrofoils in the fleet.

In the intervening years, the PJ&MSC had been struggling financially and it was eventually taken over by Brambles Ltd in 1972, which purchased the company for A\$2.1 million. Brambles had already established itself in the transportation business. While continuing to operate both the hydrofoils and traditional ferries, Brambles had sold the hydrofoils to a finance company and then leased them back again as a tax minimisation measure.

While the senior management of Brambles indicated at the time that the ferry service would be improved this proved not to be the case. By December 1974, following public demand, the State Government of New South Wales took over the Manly ferry service and so bought out the leases on the hydrofoils.

In May 1975 the Public Transport Commission of New South Wales purchased a further PT.50 for A\$700,000. A second hand hydrofoil this time, this had originally been delivered by Rodriguez to Far East Hydrofoil Co. in 1969 as *Patane* and employed on the Hong Kong–Macau route.

Modifications were carried out to configure the vessel similarly to those already in service and she was re-named *Palm Beach* and commissioned in August 1975.



Above: Propeller on RHS 140 *Curl Curl* (MARTIN GRIMM)

Below: PT.50 *Long Reef* and RHS 140 *Curl Curl* at the UTA Balmain Dockyard, Sydney (ANDREW GOWANLOCK)

A further three years passed before another hydrofoil was introduced. Again a second hand PT.50 was obtained, but this time from Italy where it had operated as *Freccia di Mergellina*, having been built by Rodriquez in 1967.

This craft was intended as a replacement for *Manly* and would allow the fleet to standardise on a capacity of 140 passenger. The purchase price had been more than A\$1 million. The PT.50 arrived in Sydney from Naples in April 1978 as deck cargo, and after having its foils and engines overhauled finally entered service in September 1978 as *Long Reef*.

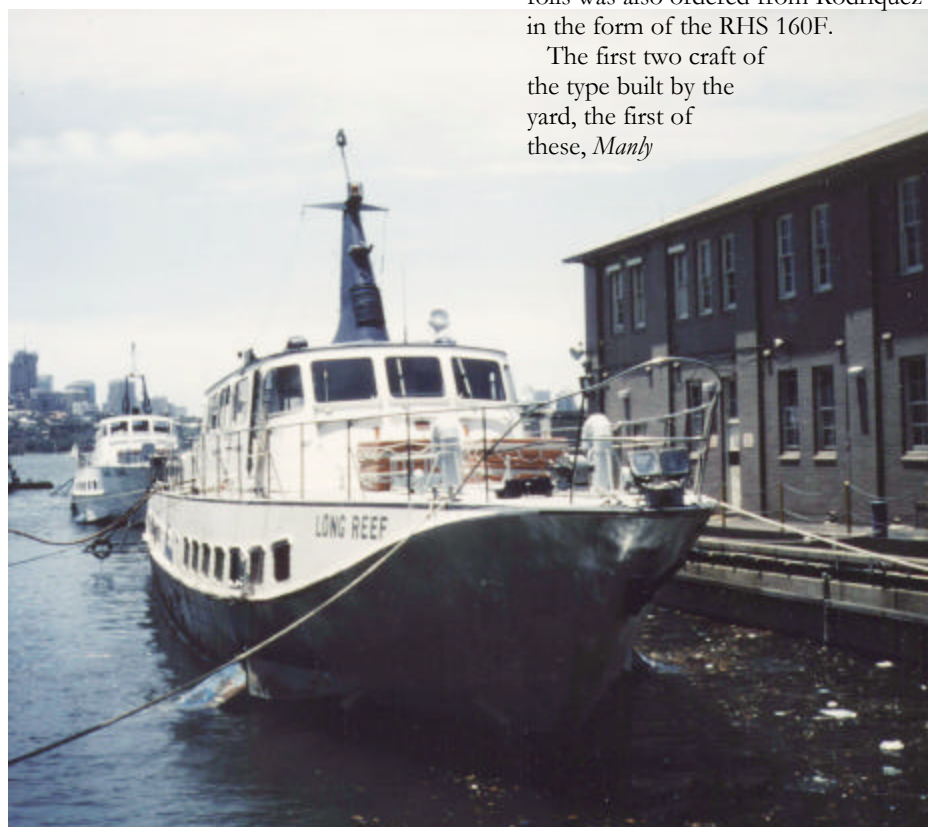
The same year the Urban Transit Authority of New South Wales was established to continue to run the state government trains, busses and ferries.

Two More – And Then No More

The 1980s finally saw a period of significant investment to modernise the conventional ferry fleet for the Manly run. Four modern double ended ferries seating some 1100 passengers were built in shipyards within the state and introduced between 1982 and 1988.

A new generation of larger hydro-foils was also ordered from Rodriquez in the form of the RHS 160F.

The first two craft of the type built by the yard, the first of these, *Manly*





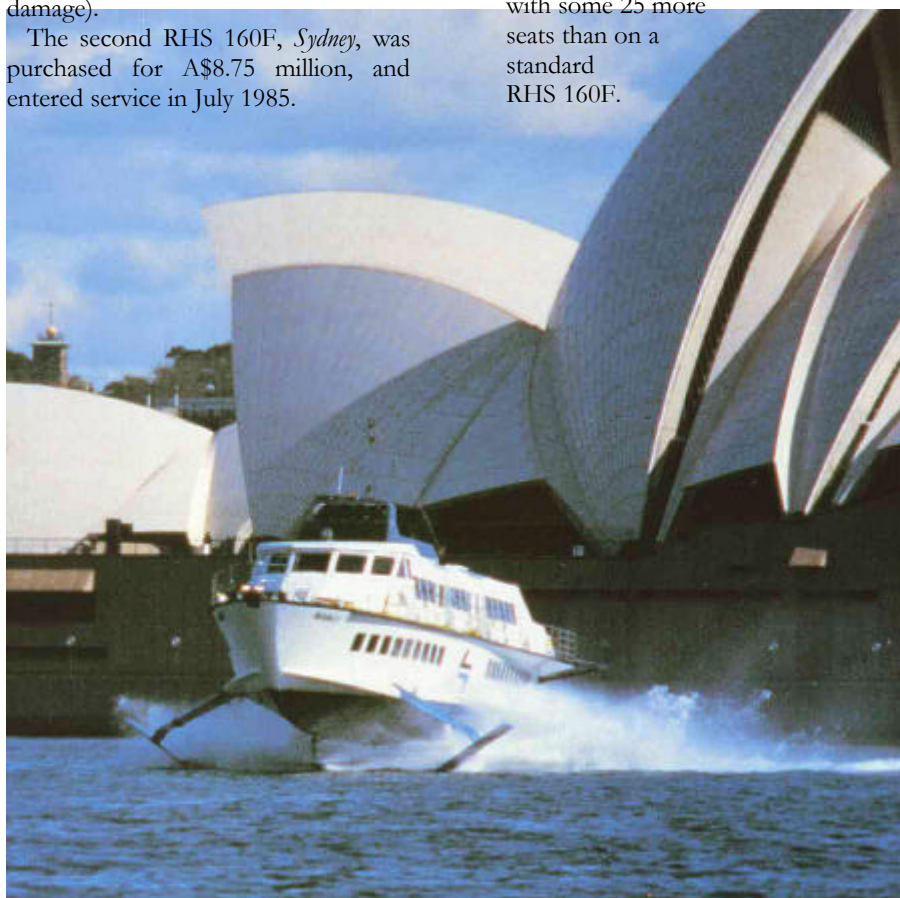
(the PT.20 carrying this name had been sold off in 1979), which had been purchased for A\$8 million, arrived in 1984 and commenced service in September 1984.

Unfortunately, she was damaged when backed into a sea wall in late 1986 and was withdrawn for repairs until mid-1988 (the extended duration for the repairs not necessarily being a direct reflection of the severity of the damage).

The second RHS 160F, *Sydney*, was purchased for A\$8.75 million, and entered service in July 1985.

At the time, it was intended that a third RHS 160F would be built under license by Carrington Slipways in Newcastle north of Sydney. This contract never eventuated.

Both Australian units were non-standard RHS 160Fs in that they did not feature the raised wheelhouse of their subsequent sisters, and being employed on a relatively short commuter run they were equipped with some 25 more seats than on a standard RHS 160F.



Above: PT.50 *Long Reef* during major refit at the Balmain workshop in December 1988. One of two acquired from other operators between 1975-78, the hydrofoil would return to Italy four years later (MARTIN GRIMM)

Left: The non-standard 235-seat RHS 160F *Manly* arrived in Sydney in 1984 (MTU)

One of the RHS 160Fs being prepared for shipment to the land down under in Messina (LORENZO BONASERA)



Thus, the passenger capacity of the Sydney RHS 160Fs was 235, which was three and a quarter times that of the first hydrofoil on the service, PT.20 *Manly*. The cruising speed of the RHS 160Fs was around 35 knots.

For a period of time the schedule for the Manly run was such that at peak periods a hydrofoil departed from Circular Quay or Manly every 10 minutes. A typical run saw the vessels back out from the Quay, turn through 180 degrees before accelerating to become foilborne as they passed the Opera House, proceed at foilborne cruising power for around nine minutes before coming off the foils just before a straight in hullborne run to berth at Manly. The hydrofoil would then wait at idle for 6 minutes before backing out for a return trip to the Quay.

NQEA Australia Pty Ltd in Cairns was eventually adopted and three of these JetCat catamarans were built.

The first of these, *Blue Fin*, was introduced into service on 16th July 1990 at a cost of around A\$5 million and was followed by *Sir David Martin* and finally *Sea Eagle* in March 1991.

These catamarans seated 250 passengers, around 6% more than the largest hydrofoils operated.

The Urban Transit Authority considered its options for what could be done with the hydrofoils,

Hydrofoil Phase-Out

By the late 1980s, the strain imposed on the hydrofoils by regularly applying full power to become foilborne, running for seven miles then returning to idle power again at the other end was starting to show.

The Urban Transit Authority (which was soon to be renamed the State Transit Authority) therefore considered options for a class of vessel which could replace the hydrofoils.

A design by International Catamarans of Sydney to be built by

particularly the reasonably new RHS 160Fs. This included operating hydrofoil services linking Sydney with Wollongong some 70 km coastal voyage to the south and possibly also a service to Newcastle in the north.

While these proposals would have let the hydrofoils 'stretch their legs' on a longer run, they never eventuated.

For a time, depending on maintenance schedules, the JetCats and hydrofoils operated side by side.

from the *Scrap Book*

All photos:
Andrew Gowanlock



PT.50s *Fairlight*, *Palm Beach* and *Dee Why* being laid up in Sydney following withdrawal from service. Unfortunately not awaiting better days . . .



Palm Beach shortly before being scrapped at Homebush Bay



Dee Why looking like a beached whale at Homebush Bay in 1988 just waiting for . . .

. . . the contractor to commence the scrapping with his ruthless yellow caterpillar





Back In The Old Country

However, towards the end of 1991 the hydrofoils were finally withdrawn from the Manly run. The four hydrofoils that had remained in service to that point were then laid up pending their sale.

The older PT.50 hydrofoils *Fairlight*, *Dee Why* and *Palm Beach* had already been withdrawn from service from late 1985 to early 1986 and they were later sold and cut up for scrap at Homebush Bay on the Parramatta River in 1988.

That wasteland area has now been rejuvenated and is the site for Stadium Australia, the centre of the Sydney Olympic games this September.

The four remaining hydrofoils, *Sydney*, *Manly*, *Curl Curl* and *Long Reef*, were offered for sale by the NSW state government in 1990 and were eventually purchased in October 1991 by Rodriguez's operating company Aliscafi SNAV for A\$3.35 million.

On 6th February 1992 they departed Sydney for their native country, Italy, on board the merchant ship *Regine* for refurbishment before they were introduced on various routes in Italy and Egypt.

RHS 160F *Sydney* was renamed *Fast Blu* and entered service in June 1992 in the country's north-west between mainland Italy and the islands of Elba and Corsica (France) with Moby Fast,

Top: NQEA JetCat catamaran *Blue Fin* is one of three introduced in 1990-91 by State Transit Sydney Ferries as replacement for the hydrofoils (MARTIN GRIMM)

Right: A journey in reverse. . . PT.50 *Long Reef*, RHS 140 *Curl Curl* and RHS 160F *Manly* on the deck of *Regine* in Sydney in February 1992, about to be shipped back to the Old Country (ANDREW GOWANLOCK)



a joint venture between Aliscafi SNAV and Navarma Lines, which already operated conventional ferries in the area. This seasonal service ended in September and was resumed in June 1993. However, the following year, and also in 1995, *Fast Blu* was instead leased to Ustica Lines, a new operator which had entered the scene only in 1993, and operated on considerably longer routes linking Naples and Kelibia, Tunisia with Sicily and the island of Ustica.

The other RHS160F, *Manly*, was renamed *Sinai* and as such was, first, briefly operated by SNAV out of Naples before being transferred to Aliscafi Egypt, an associate operating company of the former, towards the end of 1992 and put into service in the Red Sea between Sharm El Sheik at the base of the Sinai peninsula and Hurgada. This was a rather short-lived operation, and the hydrofoil was back with SNAV in Italy the following year.

PT.50 *Long Reef* remained with SNAV but reportedly saw little or no service (being built in 1967 it was at this point already twenty-five years old), whereas RHS 140 *Curl Curl* was eventually purchased by Ustica Lines in 1995 and, renamed *Spargi*, is now to be found on this operator's Trapani-Egadi Islands route, off north-west Sicily.

Good Old *Manly*

But what became of the original PT.20 *Manly*? After being withdrawn from the service on Sydney harbour, she was purchased by Hydrofoil Seaflight Services Pty Ltd in 1979 for service off the North Queensland coast to ferry tourists between Rosslyn Bay and Great Keppel Island. She had been renamed *Enterprise* by the company.

Eventually in the 1980s the hydrofoil was also withdrawn from that service and since then has been owned by a number of individuals, each with different plans for her.

After the first private owner, an employee of HSS, had removed the foils, shafting and engine at Rosslyn Bay, the hull lay idle for a number of years.

Enterprise was then obtained by a new owner and transported to the Victorian town of Mildura in 1991



where she was intended to be converted to a floating seafood restaurant. When those plans fell through, the hydrofoil was again for sale in the mid 1990s. She once more found a new owner and was again on the move by road to Sydney and later to a property North of Sydney. There the hydrofoil is slowly being transformed to a private cruise boat, minus its foils and original drive train. ■

WHAT HAPPENED TO RELIABILITY AND COST-EFFECTIVE ?

After the reign of the hydrofoils, the JetCats have not had a trouble free life either. *Blue Fin* required an engine replacement at an early stage in her trials and also attracted adverse comment on the waves that she generated.

The fuel costs were also greater than for the largest of the hydrofoils and the JetCats also didn't demonstrate a reliability better than the hydrofoils. Little under a decade since the first JetCat was introduced, plan were under way to replace these craft by newer but slower vessels.

Above: Stripped of its foils, fenders and just about everything that made it a hydrofoil, the former PT.20 *Enterprise* (ex-*Manly*) is sitting on dry land in Mildura, Victoria in April 1992 (MARTIN GRIMM)

Below: Eight years later, in May 2000, the vessel has been moved to a new location north of Sydney. Note the modified stem, additional keel and shortened fairing (ANDREW GOWANLOCK)





Three of the ex-Sydney hydrofoils (Nos. 2+4+5 from left), plus a few other nice items, back in Italy in 1992 (TIM TIMOLEON)

the old country



RHS 160F *Fast Blu* (ex-Sydney) was the first of the quartet from Oz to re-enter service in Italy. In this view the vessel is idling in Messina a few years back (LORENZO BONASERA)

The other RHS 160F was renamed *Sinai* (ex-Manly) and as such initially operated in Egypt. Here it is seen arriving at Napoli's Mergellina marina in July 2001 (MATS FINNISON)



A hydrofoil is borne

SCALE
BOX



Ryan

wrenford

All Photos in Article by the Author

Many Sydney residents would be familiar with the sight of the 'Manly Hydrofoils' which operated from 1965 through to 1991 – the modelling of one of which, PT50/S *Fairlight*, is the subject of this article.

Background

The first hydrofoil would appear to date back to 1908 with models and experiments by Alexander Graham Bell (and others) which resulted in the HD4 launched in 1918. More serious efforts were evident in the 1950s with the commercialisation of the concept clearly moving into vogue in the 1960s and 70s. Their role is largely filled these days by the high speed and high capacity catamarans, wave piercers and the like.

But, whilst less common these days, they continue operation around the world, including Canada, Russia, The Netherlands and around the Mediterranean as well as in other, usually enclosed, waters. Additionally, various Navies have operated hydrofoil patrol boats – offering a stable platform for missiles and other exploding devices as well as offering a significant turn of speed. The hydrofoil concept has been extended to speedboats, sailing boats, windsurfers and waterskiing – none of which appears to have really caught on.

The Rodriguez PT50 hydrofoils were constructed largely of welded aluminium for both strength and weight reasons. The foils themselves were specifically steel for strength.

Engines were mid-mounted for weight distribution reasons. These had long drive shafts reaching back to propellers mounted near the base of the foils, initially in front, then shifted behind when they kept getting damaged by harbour debris.

There was seating for approximately 120 passengers below deck – around 2/3 of these behind the engines, and 1/3 in a separate cabin in the bow. A further 20 odd passengers could be accommodated in the upstairs (main deck) saloon and on the 'back verandah'. Limitations on both passenger numbers and their distribution were necessary – the process of getting foilborne was difficult and whilst the hydrofoils were not necessarily underpowered there were defined boundaries. The similarities between aircraft and hydrofoil operations are of note and I make further mention of this below.

Many of the books which cover the hydrofoils suggest that the inner harbour Circular Quay to Manly run was never really optimal for hydrofoil operation. The demands on the mechanicals in becoming foilborne, the short 9 minute time on foils, the short 6 minute turn-around time at each end all combined to require high levels of preventative (and non-preventative!) maintenance. A perhaps not dissimilar position to the wear and tear and maintenance issues faced by short-haul airlines – except that hydrofoils have a 1 metre cruising altitude.

An additional issue was the passenger capacity which at around 140 was significantly less than the 1000 or so carried by the large ferries of the day.



The hydrofoils were only ever going to service a niche market – those who could afford the higher fare, and with no inclination to savour the usually relaxing trip on the ferry. There is perhaps an analogy here to a Concorde vs 747 decision on the London to New York trip – cost vs time vs capacity.

Model Research

The hydrofoil is a modelling subject that I guess has always been of latent interest. They were operating on the harbour in my youth (it's a relative term), and I recall having a ride just once in the early 70s. In fact, I still have the souvenir postcard from that trip which is the colour scheme I selected for modelling purposes. This has been supplemented over time with photocopies from various library books of the Manly hydrofoils in action.

The shift from 'just an idea' to workbench took a significant step forward with my usual source of knowledge – the internet. I started doing some research on the Manly hydrofoils, wanting to establish the manufacturer, some history and the ultimate goal – a set of plans. As I always find with the internet – one thing leads to another and you end up following a trail which either flourishes or peters out. In this case it was the former.

There is an organisation called The International Hydrofoil Society, the members of which appear to be a collection of engineers, old sea dogs, radio control ship modellers, and a couple of dangerous individuals (usually Americans for some reason) with a speedboat, a welder and a death wish! The site has copious information on the history of the hydrofoil, historical photos, modelling photos and notes (usually radio control) and details on current operations.

I entered into the foray by leaving a message on their message board – which bore almost immediate fruit. Predictably, there are a few Aussies amongst the membership and it was one of those, Martin Grimm, who kindly emailed me scans of a number of sets of plans.

Another source of information on the internet is the *Classic Fast Ferries* magazine which deals certainly with hydrofoils, but also catamarans, hovercraft and the like. The e-zine is free and can be downloaded in PDF format – around 3-4MB each. Past issues, certain of which are available, have featured some specific articles on the Manly hydrofoils and their ultimate demise.

The Model

With a set of plans in hand, I then had to make a decision on scale. Not being a seasoned ship modeller, I haven't actually arrived at a preferred ship scale and was leaning in this case towards either 1:72 or 1:144 in keeping with the similarly sized PT & Torpedo boats. I produced plans in both scales and through a process I'm still not entirely sure of ended up deciding on 1:72. This was going to be a big project.

The logical construction sequence was determined to be the basic hull, to which the superstructure would be then added, followed by the foils, deck details and fittings.

I commenced construction of the hull using the 'skeleton' technique. This consists of a single central (vertical) spine, with 4 cross section 'ribs' roughly equidistantly placed along this spine. The skeleton was then skinned with thin sheet styrene of around 1mm. These were cut to size and laid down in 3 planes on each side, to complete the hull – and a single plane for the deck itself. The plane into which the hull windows were to go was fitted with a full length clear styrene sheet rather than white styrene – the intent being to mask off the windows later when painting.

It would be obvious from the above, that there has been no interior detail installed below deck. The prospect of scratchbuilding 120 odd individual seats with armrests was not the sort of thing I was going to get a kick out of for starters. The interior detail would only complicate the construction, and besides, none of it would be visible from the outside in 1:72 scale anyway. To make absolutely sure it wasn't visible, I painted all the internal parts of the skeleton black prior to fitting the skin. Note that in later steps of construction, I did in fact end up opening up sections of the deck under the superstructure and did include some basic internals at that point.

The resultant hull was cleaned up with Milliput and sandpaper. Mounting holes were drilled out for exhausts, fenders, anchors and the other do-dads. And the various buffer or reinforcing strips along the length of the hull added using strip plastic.

Sandwiched

The superstructure required a level of planning. Its basic shape is a simple box, however there are curved windows at the front, a curved roof and of course the large picture windows. I elected to construct port and starboard walls as a 'sandwich'. The inner surface being 1mm styrene with the windows and positions cut out. The outer surface being 0.5mm clear styrene laid over the complete inner surface. This technique provided some structural rigidity as well as a bit of depth.



The front of the wheelhouse is curved and I moulded this from clear butyrate using techniques that I have previously documented in various articles in the Australian Plastic Modellers Association's club magazine. The roof is sheet styrene – lightly bent and sanded to get the right curvature.

The upper deck interior is visible in 1:72 and needed to carry the light, airy feel visible in photos. There are some 24 seats inside for which I was able to modify the seats from two Italeri's civilian JU52 kits. One of these JU52s I had previously modified for another project – and I guess I'll now have to do the same with the remains of the second one!

These seats were painted two shades of blue per the reference photos I had been provided. Also fitted inside were the two stairwells down to the forward and aft cabins respectively. The interior I painted morbid grey and fitted various placards warning of the dangers of smoking, blocking stairwells, not standing up for adults, eating, drinking, sitting and standing and other misdemeanours.

A breath of fresh air

The 'rear verandah' is a relatively straightforward construction – with two curvaceous rails running down almost to the stern, and an assortment of safety equipment, lockers and a few seats. I constructed this as a unit, which was then recessed into the deck to provide the necessary effect.

Railings are in real life stainless steel and fairly substantial – probably trying to protect the public from themselves I guess. I firstly marked up and pre-drilled holes for all the posts and support stanchions. Multiple posts were then cut to size from Plastruct 0.1mm rod and fitted into position with a dab of superglue. Working in sections, I then fitted the top rail – again using a dab of superglue. Middle and lower rail were made from superfine stretched sprue. The bowsprit was made from bent fusewire. All the railings were then handpainted with silver paint to imitate the stainless steel.

Ventilators were scratchbuilt by bending thick sprue – then cutting/drilling to size. I had about a 50% failure rate with these. It is difficult getting a 180 degree bend in stretched sprue without it 'bunching up' on itself.

The usual aerials, navigation lights, foghorns and the like are fitted. Navigation lights were made using clear sprue, filed and sanded to the required shape – then painted red or green using the Tamiya range of translucent paints. Aerials are from fine stretched sprue. Foghorns are from the tapered bit at the end (or is that the beginning?) of stretched sprue. Rear stairs were constructed from 90 degree right angle strips for the individual steps, with railings added from bent fuse wire.

Overly cautious?

The life-size *Fairlight* had 6 liferaft containers (I'm sure they have a technical name!) mounted just outboard of the railing. For my model these were scratchbuilt using thick sprue with the ends rounded off, and details added from tape and cut to size plastic. Life Preservers are modified 'Billings Boats' accessories as is the anchor. The various bollards and fairleads were mostly modified items from other kits.



Is it Ella or is it Memorex? The wake pattern and spray are reproduced in every detail

The deck was also fitted with some 'floaties'. These are like square donuts roughly 1 metre across with ropes on the side. Presumably if the ship goes down these just float off and all the survivors grab hold of these until help arrives.

The hydrofoils seemed to have been fitted with extensive levels of safety equipment – everything except seatbelts and airbags it seems. I'm not entirely sure whether these safety levels were commensurate with the risk or were just there to satisfy some government authority. There is an article on the IHS website which discusses the effect of a hydrofoil hitting a floating log of wood at speed – very technical, but basically it stops.

Ordinary people – who needs 'em

After much deliberation, I decided that I'd put a few people on the 'back verandah' – enjoying the scenery – and a captain at the wheel (always a good idea). 1:72 people are easy to come by from other kits, most of them how-

ever are either wearing guns, helmets, breathing apparatus, jack boots or similar encumbrances. None of which seemed entirely appropriate on the deck of *Fairlight*. Cleaning up these 1:72 figures to make your average commuter is not an easy task, so I was hunting for alternatives.

Having browsed through an extensive range of 1:72 figures it is surprising just how few bear any resemblance to your normal everyday commuter. I ended up resorting to the model railway range (and the model railway prices!) to get some finely detailed, 1970s dressed figures in various poses (and a few poseurs as well). Most of these were 'identical quadruplets' which limited the range I could realistically use. I ended up putting about 6 of these on the deck – although I have none inside the cabin. Figures is not my forte (in fact I've never done a model figure in my life) but I think they'll pass muster.

Weathering was kept a little constrained. Limited to running a wash of oil paint along key joints and around the railing. And some use of pastels to 'dirty things up a bit' particularly the trafficable parts of the deck.

The Base

At an early stage I decided I would construct the model as a 'waterline' model. That is 'foilborne waterline' rather than 'broken down waterline'. The foils themselves are quite large and really disrupt the voluptuous Italian lines of the hull if not appropriately buried in the water. I wanted something that would convey *Fairlight* as most people would probably remember the hydrofoil operations.



From a construction sequencing perspective, I knew I would not be able to complete the base after the model was completed – it'd be too hard to access the area underneath the foilborne hull. Additionally, I had to convincingly 'bury' the foils in the water. This meant I had to be working with a largely pre-prepared base.

Both the front and rear foils have been constructed from cut to size styrene sheet. This required some careful marking out to begin with to get the correct fore-aft width.



The trailing edges were then carefully sanded down with wet & dry sandpaper – and the various pieces then cut to length. The fact that I was constructing a foilborne model meant that I didn't have to model the underwater flaps, nor most of the 'fences'. So it was largely a matter of gluing the component parts at the correct angle by lining up with the drawings. The aft foil was set into the base for later attachment to the model, whereas the bow foil was attached to the model for later attachment to the base. This approach assisted in getting the correct 'sit' of the model on the base.

It's only water

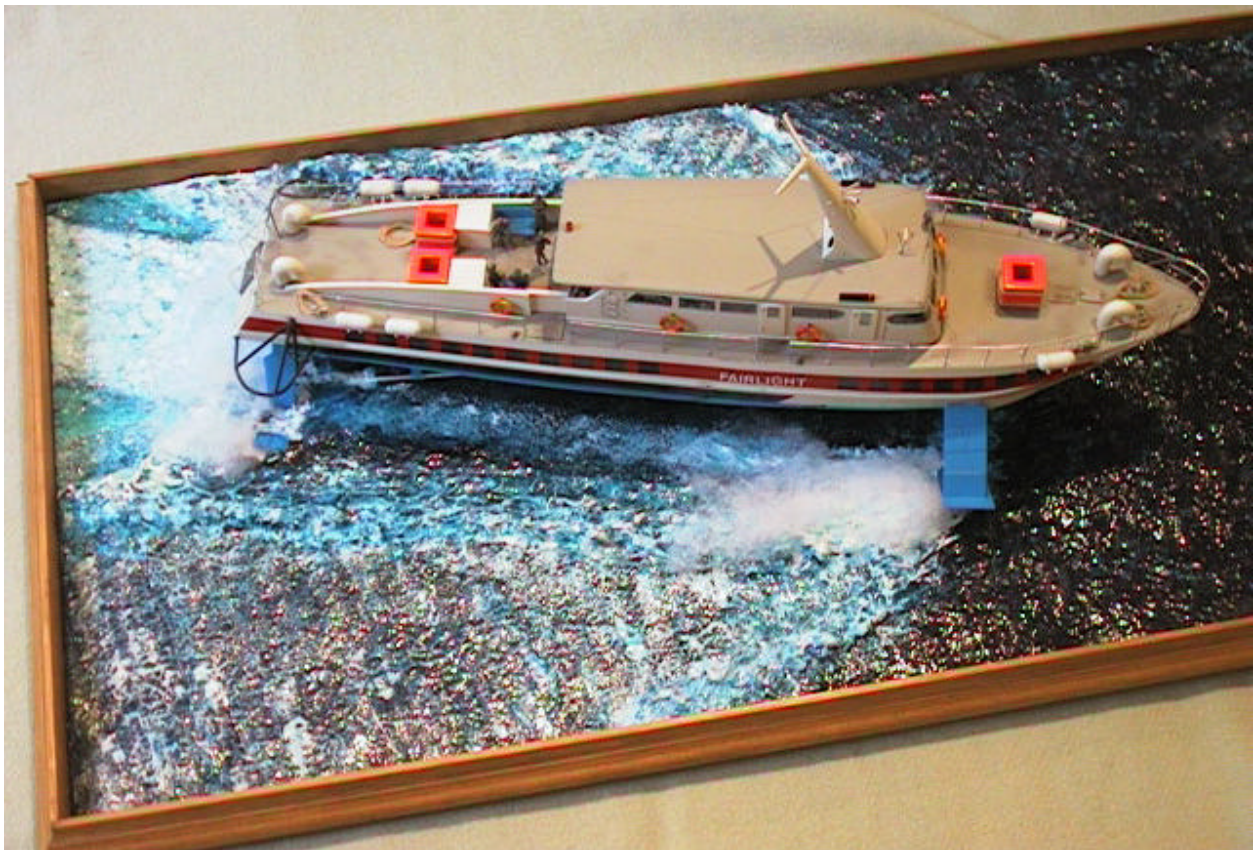
The 'water' obviously presented some challenges to get any reasonable representation of the 35 knot speed and the associated wake patterns and spray.

The modelling technique I used for the water was one I sourced from the internet (check out the archives from <http://smmlonline.com> for the full detail, I just give a shortened version below).

The base board is a piece of 10mm ply cut to a 600mm by 300mm rectangle. This is big enough to position the model in a representative bit of wake without the model being overwhelmed. I marked out the position of the model and the 'swathe' the foils cut out of the water for most of its length.

The remainder of the board was built up by about 5mm with white modelling clay. This was built up a little higher aft of the rear foil and also in a reverse V from the front foil (sort of a bow wave I guess).

Once dry, I then started further building up water patterns and wake patterns using Artists Acrylic Gel Medium. This (and all the other



Most of the hydrofoil pictures I had were photogenically front 3 quarter or side views taken from the water or harbour foreshores.

Again, via the trusty internet, I was able to source some aerial shots of *Dee Why* at speed, presumably taken from the Harbour Bridge if not a helicopter. The hydrofoil produces a complex wake pattern – the nature of which has no doubt produced a number of PhD theses! Obviously from the photos there is much evidence of froth and stirred up water, varying amounts of spray (actually very little when properly trimmed in smoothish water).

materials mentioned here) can be sourced from any reasonable artists supply store. The Gel Medium is normally used by artists wanting to 'texture' their paintings to create certain 3D effects. It looks a little like gluggy PVA glue, its texture is a little like toothpaste and it dries crystal clear. You apply it using either a flat brush, a spatula or anything you've got handy. You then work it, usually with smaller brushes, to achieve particular effects – such as a 'curling' wavelet.

Most of the base was the largely undisturbed water in front of the hydrofoil, for which I used

a loosely scrunched up plastic bag which I randomly dabbed all over the surface. This 'pulls up' the gel and leaves a noticeably mottled effect on the surface.

The water colour itself I've used by building up and blending three colours. These are good quality Artists Acrylics which you can buy in a small tube. Not cheap – but they last forever. Phthalocyanine Blue, Phthalocyanine Green and White. The extremes of usage here are from undisturbed water which is largely 3 parts Blue, 1 part Green; the prop wash which is probably 1 part Green, 3 parts white. Measurement and precision is not important.

The scrunched up plastic bag again comes in handy for blending and texturing – noting that the effect here turns out to be far more subtle than you get with the gel. Finishing off with some dry brushed white picks up some of the spray effect.

The final effect I applied (and I'm still not 100% on its effectiveness) was to apply behind the foils some 'fluff' – being much stretched out polyester cushion fillings (looks a bit like cotton wool only not nearly so clumpy).

Painting

From a colour scheme perspective, the Sydney PT.50s and sole RHS 140 at least carried a variety of schemes. Each of these hydrofoils appears to have had three or more 'major' makeovers in their lives, supplemented by numerous changes in details of colour or fittings.

The extent of this is such that despite having numerous photos of *Fairlight*, I'm pretty sure that no two are alike! The drawings presented are of *Fairlight* at some point in the 1970-73 period but I cannot be more precise than that.

The colour scheme was overall white, with light grey deck and roof. Hull underside is medium blue (almost a French Blue), with a bright red stripe down the side of the hull.

There is a thick black stripe mid-hull which runs from the engine exhausts through to the stern – presumably to cover exhaust marks?

Postscript

All in all, this has been a challenging but interesting project. I've picked up a few more techniques and knocked off one of those subjects I've always wanted to do.

The logical follow-on is I guess a Manly Ferry – something like the *South Steyne* – although I'm quite sure I won't do *that* in 1:72. ■

FAIRLY POPULAR FOILS

Australia seemingly harbours its fair share of model enthusiasts who will indulge in building the occasional Sydney– Manly hydrofoil.

Aside from Ian Wrenford, Martin Grimm, the author of the other article in this issue, is building a 1: 20 scale operating model of RHS 140 *Curl Curl* since some time.

Two other scratch-built models of former Sydney vessels are PT.20 *Manly* and PT.50 *Long Reef*, the latter of which built by Scott Rawling.

And of course Garry Fry, whos life-long dream of having and operating a full size hydrofoil of his own featured in the December 2001 *cfj*. Like Ian his preferred model is PT.50 *Fairlight* – of which he has built two (or should that be 1.5). These were described in our November 2001 issue.

Now, who's going to embark on recreating PT.50s *Dee Why* and *Palm Beach* – or one of the RHS 160Fs?

MARTIN GRIMM photo



SCOTT RAWLING photo





R. NEEDHAM photo

When *Palm Beach* arrived in Sydney from Hong Kong in 1975, the only six year old PT.50 was quickly dubbed 'The Hong Kong Con'. Unofficially, of course.

The hull proved to be in very poor condition, and also the hydrofoil wouldn't take off with passengers in the bow cabin. Reportedly, the solution was to fill the aft void spaces with - bricks.

In the action-filled shot above *Palm Beach* is crossing the Sydney Heads in big seas, something which does not seem to prevent passengers from gathering on quarterdeck to enjoy the thrill of the wind and sea spray (and the bumpy ride).

Incidentally, the occasionally upset Sydney waters has proved somewhat of a problem to the present day medium-speed SuperCat catamarans and thus the State Transit Authority. These vessels were supposed to replace the JetCat class catamarans, which will now be retained.

Which is a whole other story, not to be told here.

The Hong Kong Con