

# **The Development of the Spacesailer 80**

**by**

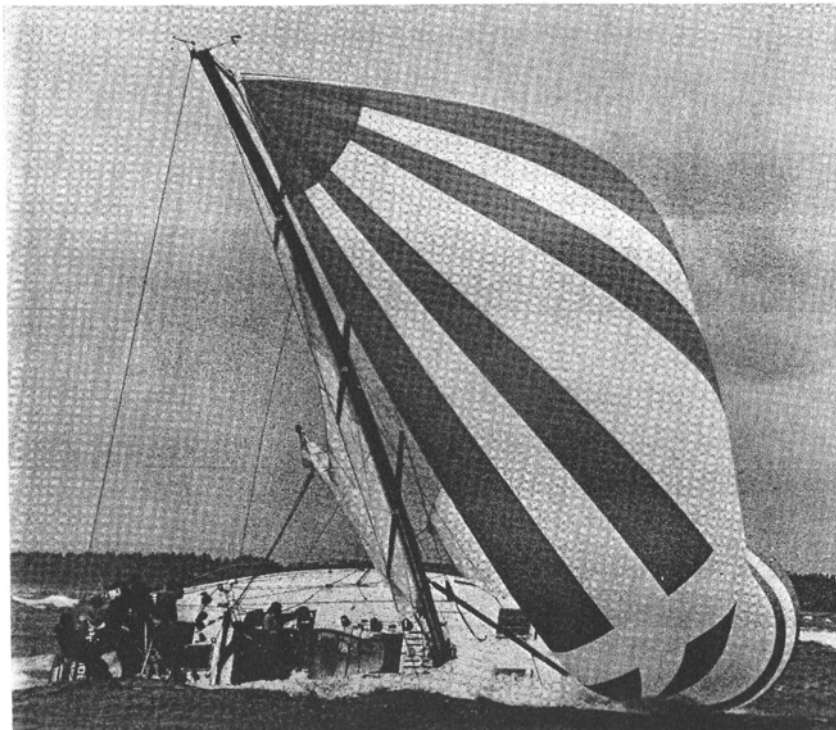
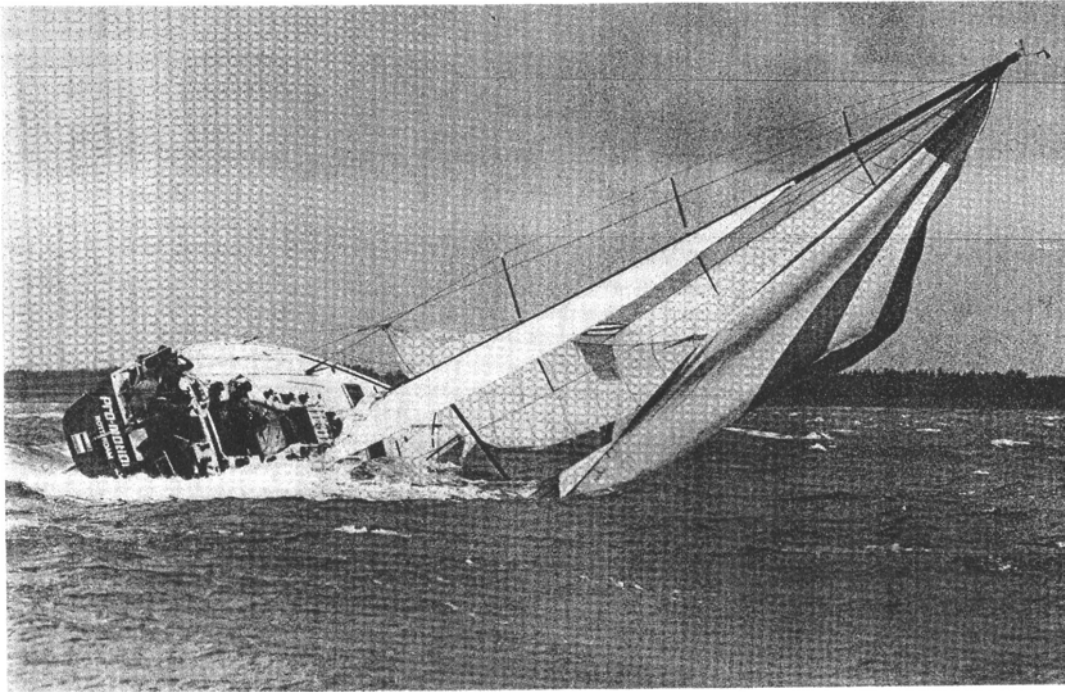
**Andy White**

## **1. Setting the scene - WA Sailing in the 1970s**

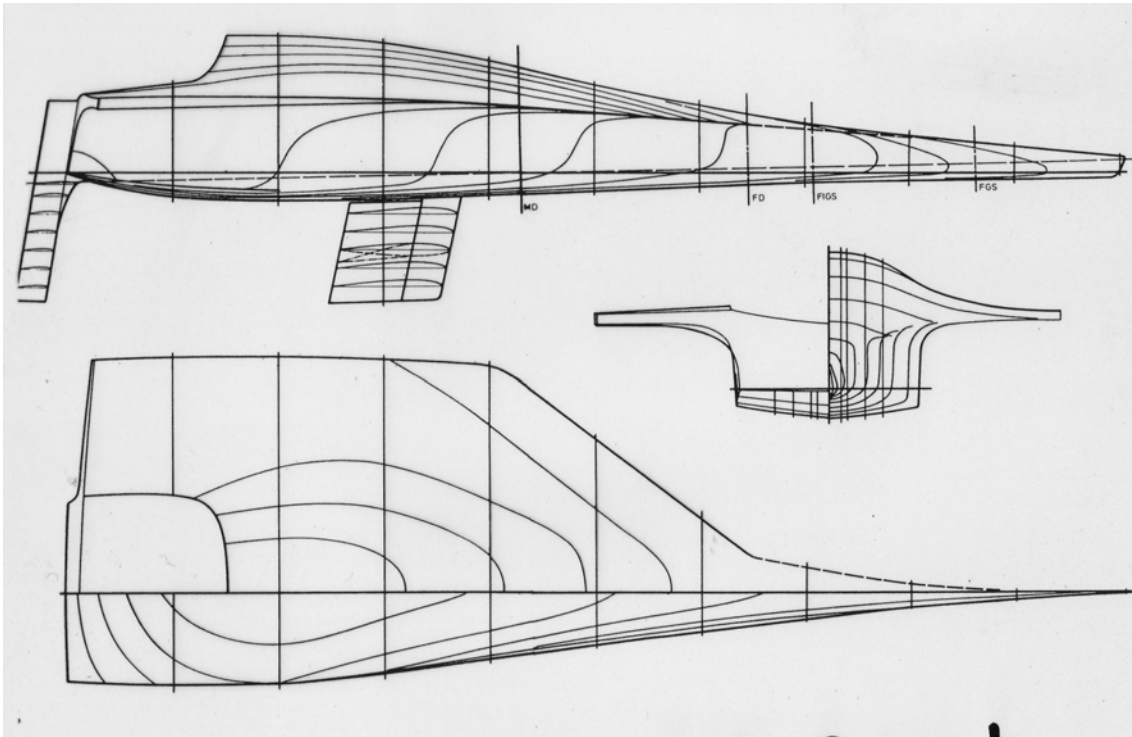
The 1970s saw vigorous development of GRP boatbuilding in WA - off the beach cats, trailer sailers, light and heavy displacement keelboats.

Many keelboat designs in Australia were strongly influenced by the International Offshore Rule (IOR) which was introduced in 1970. These were often characterised by masthead rigs (small mainsails and large overlapping headsails) set on heavy displacement hulls. There were some good designs (e.g. S&S 34) and some awful ones that exhibited bad handling characteristics, especially down wind in strong breezes because they tended to "deathroll" and broach.

## Marchaj: Seaworthiness - The Forgotten Factor



The constraints of the IOR also lead to development of freaks as designers sought to exploit loopholes in the Rule, sometimes sacrificing seaworthiness for speed and handicap advantages. This led to some weird designs in Australia and overseas:



While there were some sound designs in WA built under the influence of the IOR (e.g. Farr boats, S&S, UFO, and local designs such as the Swarbrick 22 and 27), the influence of the Rule did impede development of sensible racing yachts that combined good all round performance with structural integrity, good looks, and the provision of on deck and cockpit layouts that facilitated racing, especially round the buoys.

## 2. S80 idea conceived at EFYC 1977

It was against this background that John Ducat and I, both members of East Fremantle Yacht Club, decided to explore the feasibility of developing a relatively cheap, medium sized light displacement yacht with lively performance that was free of design constraints imposed by rating rules. We wanted a boat about 8 metres long which would be fast and seaworthy enough for river and ocean racing that would also require dinghy racing skills to get the best out of it. Ideally, it would have a generous sail area set on a simple fractional rig (no runners), a big and comfortable cockpit, ample side decks for hiking, a transom hung rudder and fixed keel with sufficient weight for righting after a knockdown. It would also have a cabin containing a small galley, food storage and icebox, and comfortable sitting and sleeping accommodation for 4 people. Above all, it would be a boat that would sail well in all conditions and be able to plane downwind in a fresh breeze, without the death roll characteristic of IOR type hulls.

Given the right design, we felt we could promote it to become a one design keelboat that would satisfy the performance wants of like-minded ex-dinghy sailors in WA.

We had examined the possibility of buying J24s but we decided they were too limited for our purposes. Although they had become an established one design class they were at that stage too costly to buy, very limited in their cabin accommodation, a bit too slow down

wind in a fresh breeze, and the cockpit and deck arrangement were totally unsuited to our requirements. However the J24 did have strict and well thought out class rules and specifications. I will return to this later on.

Other sailors at EFYC were also keen on the idea of developing a new keelboat design, so John and I decided to push it along. I recall this was about early 1977.

### **3. Influence of sailing backgrounds (AW & JD)**

John and I came from similar sailing backgrounds.

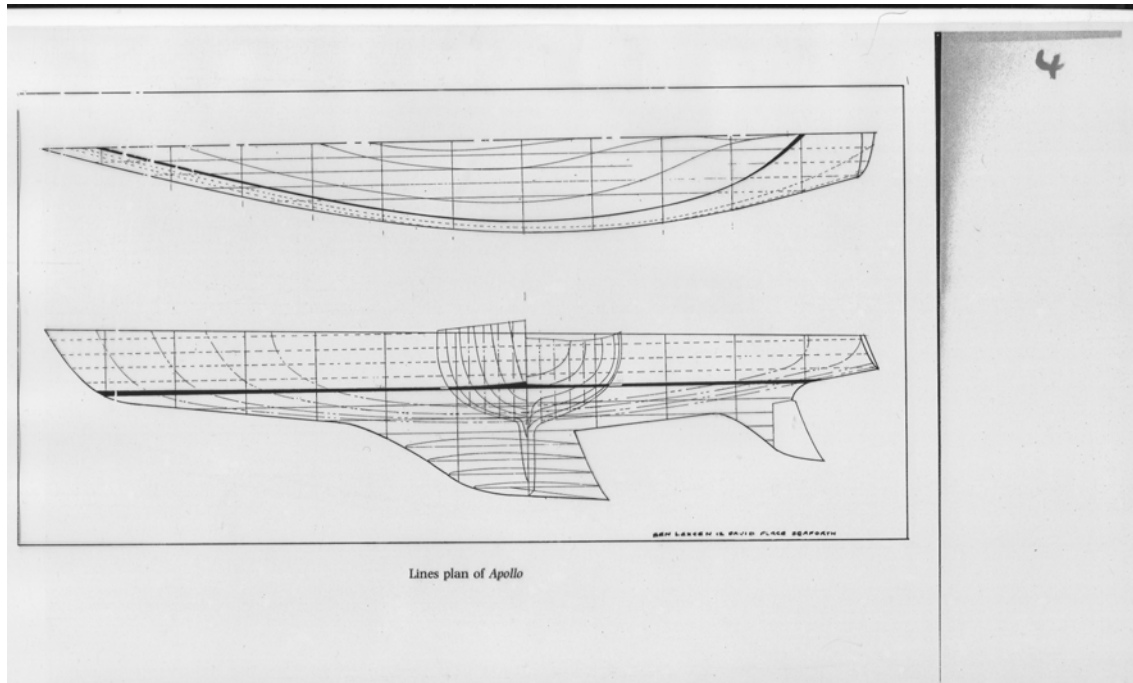
I had raced centreboard designs and keelboats and wanted to continue to get as much fun and excitement out of sailing as I could, and fun usually meant speed. I enjoyed the subtleties of racing in light air as much as the challenge of sailing in heavy air. In 1968, I experienced the excitement of skippering an 18 foot skiff called Globite from Sydney Flying Squadron, after crewing in Sharpies and FDs and Twelve Metre yachts. Globite was a pretty average 18 footer, one of the early 3-handers, but it was a lot of fun to sail, especially for a novice 18 footer skipper who had not come up through 18-footer ranks.



When I returned to WA to live I built and raced a Contender and various large and small keelboats. Like other 40 year olds with a growing family, I thought a medium sized keelboat would be useful for holidays at Rotto as well as serious river and ocean racing.

Apart from racing dinghies, I guess there were two other influences on the sort of keel boat I wanted. The first came from crewing on Yachting World Keelboat in Sydney, especially the fact that it had a lively planing performance. The other one came from sailing in the Newport - Bermuda race on the 58 foot Apollo in 1970. Apollo was designed for Alan Bond by Bob Miller (later Ben Lexcen) because Alan wanted to have the fastest keelboat in WA. It

had clean, powerful lines that were clearly influenced by Bob's dinghy racing background. Apollo was fast and exciting to sail (even though it was masthead rigged!).



John Ducat introduced Skates to WA in 1957 and was the first to use twin leaning planks, beating boats from the eastern states that raced in the nationals in WA with only a single leaning plank. He also sailed on various keelboats and was crewing on an MB 24 when I met him. He was a good sailor with a sound appreciation of yacht design, was as keen as I to get a boat with a good all round performance, and we shared similar ideas about what we wanted in a keelboat.

#### **4. Approach to designers**

John Ducat checked out designs at San Diego and Santa Cruz in 1976 when he went to the USA on business. He looked at the Ultra Light Displacement Boats (ULDBs) being designed and built by Bill Lee in Santa Cruz, California. Bill was the designer/builder of the famous Merlin that won the Transpac. Unfortunately, John didn't find a design that met our requirements. I did not know of any existing designs that would fit the bill, so we decided to ask two Australian designers to do sketch plans for us. John approached Joe Adams and I approached Kim Swarbrick.

##### **- Joe Adams**

John had lengthy discussions with Joe Adams and he sailed on Joe's Adams 10 Metre from Pittwater to Sydney Harbour - the Adams 10. Although the Adams 10 was too big and costly for us, it was the sort of boat we were looking for and was a real break with the type of boats that had been designed primarily to maximize performance under rating rules. It was



also designed for one design racing. Joe provided us with concept drawings for an 8 metre yacht of the type we wanted (this later became the Adams 8).

#### **- Kim Swarbrick**

Kim Swarbrick also agreed to provide us with concept drawings. Kim's initial drawings looked more promising than the ones from Joe Adams, so we asked him to develop them. At this stage the Swarbrick company became interested in building the boat. We felt this was an opportunity too good to miss, especially as we were able to make substantial input to the design to get the boat we wanted at a cost we could afford - the Spacesailer 80 was the result. However, Joe Adams threatened to sue John Ducat if we went ahead with Kim's design - Joe said we had stolen his concept but backed off when John reminded him that he had originally written to him stating that we would be consulting more than one designer. As it turned out the Adams 8 (there is one at Freshie) is quite different from the S80 and has not achieved the same level of success nationwide.

I had first met Kim, Tom, Harley and Terry Swarbrick (Kim's father) in 1958 when Rolly Tasker and I went to Walpole to race in a small boat regatta organised by the Walpole Yacht Club, which was located at Coalmine Beach. Boats in the regatta included Heavyweight Sharpies from Walpole, Kitty Catamarans from Albany, one or two FDs, and Syd Corser's 14 Foot Dinghy, Darkie. Between races, Kim came for a sail on Rolly's FD, Falcon.



The Walpole regatta was a wonderful event, made all the more memorable by the hospitality extended to us by the Swarbricks and the local community and the excellent sailing venue.

I kept in touch with the Swarbricks when they left Walpole and set up as boat builders in a small factory in Carrington St, Nedlands. It was there that Kim started to design yachts for the company - I think his first production design was the SS24, followed by the SS22 which was originally designed as a quarter tonner, followed by the SS27, a half tonner which Kim ocean raced successfully.

I purchased several of their boats (SS 18, 20 and 22) in the 1970s when fibreglass production yacht sales were peaking in WA. By the time the S80 was conceived, I had established a good rapport with the Swarbricks and this made the development of the S80 all the more productive and enjoyable. At that stage their factory had moved from Carrington St, Nedlands to larger premises in King Edward Rd., Osborne Park.

## **5. The S80 moves from design to building**

The S80 concept as a production yacht was completely new for the Swarbricks - until then they had been producing boats that were in one way or another influenced by the IOR and also current fashions in yacht design, and all of their boats had masthead rigs. Our vision of the S80, and fortunately Kim's as well, was a complete break with Swarbrick's current thinking.

Kim drew the lines and sail plan and we gave him feedback throughout the design process. We felt this was essential because John and I had definite ideas about what we did and did not want, but we recognised that Kim's design skills and sailing experience were essential to achieving the outcome we wanted. There was healthy discussion about details as the design progressed. For example,

- At first, Kim favoured a hull with a fairly high freeboard with a cabin that extended forward and high enough to provide sufficient space for a toilet and quite generous cabin accommodation. We didn't. We wanted lower freeboard and felt that room to sit on a throne in comfort and isolation was very much a secondary consideration, even though one was needed for ocean racing and cruising. We wanted adequate not generous accommodation. So the freeboard was reduced.

- Kim wanted a forward sloping transom which was fashionable at that time to give a yacht a speedier look (i.e. a sloping stem complemented by a sloping stern); we wanted a vertical rudder hung on a vertical transom which is more efficient than a sloping rudder - previously Kim had favoured sloping rudders on his S18, S20 and S22 designs. Kim gave us what we wanted. He also managed to strike a compromise to give the boat a semi-fashionable looking transom, by including planing boards extending aft of the transom to give the impression of a slightly sloping stern when viewed side on. As it turned out the planing boards are useful for climbing on board.

- John wanted an upright stem to gain maximum waterline length, dinghy style - he was a bit ahead of his time on that one, especially in keelboat design. Fashion ruled and we got a sloping stem. Today, the upright stem has become the fashion.

- At first, Kim drew fairly rounded midship and aft sections for the hull but agreed to flatten them for better planing performance in heavy air, probably sacrificing slightly lower wetter surface area and light weather performance in the process, a typical trade off in design.

- We all agreed the boat needed plenty of sail area, set on a simple, flexible, fractional single spreader rig, with no running backstays. We felt that this was desirable for good all round performance and ease of handling. While we recognised the large sail area could pose problems for relatively unskilled sailors, they were not the group we thought the S80 would appeal to.

- We also agreed the cockpit had to be big and comfortable, in contrast to many keelboats boats of the time, so that it would provide adequate crew space for racing and cruising. The idea for the contoured seats came from the MB24. And we were happy to have a pop-top cabin and adopt a modified version of the cabin layout of the S22, which had proven to be quite functional for cruising and racing. We also wanted a deck that would be easy to work on and liked Kim's deck layout, which had ample uncluttered space.

- Kim had kept up with developments in foils, and we were happy with the keel and rudder shapes he designed, and the keel weight, which gave the boat enough reserve stability to overcome a knock down. Coincidentally, about the same time as the S80 was designed, Julian Merfield asked Kim to check out his concept design for the M27. Julian insisted the M27 should have a cast iron keel which was clearly too light to give the boat adequate self-righting capability and as a result it was disqualified from some offshore racing. This was later rectified with a new keel design, but the M27 is still lightly ballasted

When the design work on the S80 was completed, Brian Pearce was hired to build the plugs for the fibreglass moulds at the Swarbrick factory in Osborne Park. Swarbricks built the hull and deck moulds (initially the bunks and galleys were built of plywood, later moulded from fibreglass). The first boat to come out of the moulds in 1977 was shipped to Sydney for the Sail Afloat boat show at Rose Bay. It used the North sails made for John Ducat (the mainsail was partly modelled on the Etchells main). John's boat, Online, named after his company Online Computing, was next. This was followed by mine named Percy (after my father). John and I fitted out our own hulls. Percy was launched at RPYC in 1977. Both boats sailed out of EFYC.





## **6. Development of class rules**

Before the S80 Association was formed, John, Kim and I agreed we would have to draft a tight set of rules if we wanted the class to grow and remain faithful to the design. When we wrote the rules we used the J24 rules as a model. We incorporated a "spirit of the rules" clause that was intended to prevent owners from exploiting any loopholes in the rules to gain racing advantages that, if successful, would force others to follow suit in order to be competitive.

The spirit of the rules clause was successfully invoked soon after the class began to race when Jim Whitton (Nite Flight) moved the keel on his boat aft about 200mm or so to reduce weather helm on the wind, and later when he fitted an aluminium pipe sub-frame inside his boat to stiffen it against rigging loads - both good ideas to increase boat speed, but clearly against the "spirit of the rules", so the initiatives were outlawed. Jim accepted the rulings in good grace and realised he had been outsmarted when we had drafted the rules. He moved the keel back to its original position and removed the internal framing.

## **7. The class takes off**

Once production began at Swarbricks the orders rolled in. At East Fremantle Yacht Club the class got off to a great start, with 9 boats racing by the early 1980s. These included

Online (John Ducat) - later renamed Pearler (Lindsay Jones)  
Percy (Andy White)  
Good Doogs (Noel Fogarty)  
Blakarri (Gary Griffiths)  
Nite Flight (Jim Whitton)  
Ciao (Peter Lombardo)  
Misty Blue (Jim Lovett)  
Mishka (Jan Bowden)  
Shanoose (Dave van Werdt)

Owners at RFBYC, Claremont YC, South of Perth YC and RPYC matched the early momentum and by the time of the inaugural State championships were held at FSC there was a sizeable fleet.

## **8. Ocean racing**

Whilst the S80 quickly proved it was an able river racer, it was in the ocean that a few of us really had a great time, especially in the shorter races (Mandurah and return, Yanchep, Cape Vlaming and to a lesser extent Bunbury and return).

In the 1970s, before the Fastnest Race disaster of 1979 there were quite a lot of small offshore races held under reasonably relaxed safety rules (i.e. Category 4 FPA, for racing inside the islands). Category 4 FPA required flares, anchor and adequate rope, pulpit, a fire

extinguisher and life jackets. Thus there was no need to buy very costly safety gear. However in the longer races (e.g. Mandurah and return) the safety requirements were more stringent and costly but in no way comparable to those of today. As a result, we were able to ocean race our S80s without incurring big overheads.

It soon became obvious we were on to a winner and that Kim Swarbrick had designed a boat that would give the bigger and more costly IOR boats a hard time at sea.

I gained first and fastest time in the Mandurah Race held in November 1978. Nite Flight finished a close second. On the return leg from Mandurah, in a freshening south westerly the 3 leading S80s (Percy, Nite Flite and Ned Kelly) planed downwind to the West End of Rotto at 10 knots or more and left the heavier boats in Division 2 well behind. After this and a couple of other races where our down wind performance left bigger boats standing, we all incurred much heavier handicaps which virtually ruled us out of the ocean racing stakes.

During the 1979 Mandurah race, held on the 26 November, the downwind scenario was repeated and it was on the same night that we rounded West End that the French ketch Anitra, racing in the Parmelia Race from Plymouth to Fremantle, was wrecked on the south side of Rottnest near the main Rottnest lighthouse - it had us all tossed because the visibility that night was good and the weather mild.

I guess some of you recall the Fastnet Race disaster of Monday August 13, 1979, when 15 competitors lost their lives and only 85 out of the 303 yachts in the 605 mile-long race made it back to the finish line off Plymouth.

We too suffered a disaster though on a smaller scale. This occurred in 1980 in the Cape Vlaming race sponsored by EFYC. I was skippering the S80 Mishka, owned by Jan Bowden, in a howling south westerly as we raced along the south side of Rottnest towards West End. There were big seas running and solid spray was thrown up to the spreaders as we pounded through the waves on a tight reach - I wondered what we would do if we lost our rig because the reefs were fairly close to leeward and they were covered in foam from the breaking waves. We gave West End a wide berth as we rounded it and had a wild ride down the north side of the island. After we had rounded West End, Jim D'Arcy skippering his Spirit 28, Howzat, shaved the southwest corner of West End and his boat was struck by a large wave. Jim's wife, Betty, was swept overboard through the lifelines. Jim tried to save her and was also swept overboard. Howzat's life ring and Danbuoy, which were lashed on board, could not be quickly released and tossed overboard - though I doubt they would have been of much use at that stage. Jim's two crew sailed Howzat in and out of the breakers a couple of times at great danger to themselves to try and rescue Betty and Jim, but they were lost. Jim's body was later recovered but Betty's was not. The tragedy was the worst the Club had experienced and was a salutary reminder that ocean racing should not be taken lightly. Jim D'Arcy was an experienced yachtsman, but I guess he may have taken one risk too many.

I think this was about the last time I raced an S80 in the ocean, although this was not due to the ocean racing tragedy.

I sold Percy in about 1980 and used the proceeds to pay off the mortgage on my house. I had really enjoyed the process of starting up the class and the experience of racing and cruising Percy, but felt it was time to move on to another project - the building of the Clearwater which was a very quick little trailer sailer that was also a break with current thinking - but that's another story!

## **9. Looking back - appraisal of the S80**

I think Kim Swarbrick designed an excellent all round boat - the S80 is still going strong after some 25 years. The early boats are still competitive and remain structurally sound. I guess the increased cost of boatbuilding is partly responsible for the fact that no new S80s are being built in WA. Indeed, the building of small and medium-sized keelboats in WA is no longer the thriving industry it was in the 1970s and 1980s.

Perhaps when the boat was designed we over estimated the skills needed to sail well it because sailors without dinghy racing backgrounds have been very competitive.

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W.A. State Champion 5.80 Class  
1981/82 "Blackarri" (Gary Griffiths)



For example, Gary Griffiths who began his racing career with me on Percy had had no prior sailing experience. He quickly became a top sailor, winning the 1981/82 S80 State Championship soon after becoming skipper of Blackarri.

In addition to the S80 being a good design, it is important to recognise that together with the M27, it pioneered a different type of GRP light displacement keelboat class in W.A. Until then, the small/medium sized GRP keelboat scene had been dominated by imported

designs, which were heavily rating-orientated or influenced by the IOR. Understandably, the S80 had at least one design fault - the positioning of the keel which is set too far forward of where it should be to give the boat a well balanced helm on the wind in fresh breezes. I think it is probably too late to change the keel position - on the other hand, the weather helm is not a problem for experienced sailors to adjust to. I know Kim has changed the keel from fin to bulb at the request of sailors in the East. I wonder if this in the best long-term interests of the class. I guess only you who sail the boats today are best able to judge. I hope the interest in the class continues and that one day we will see some new S80s built to keep the class alive.

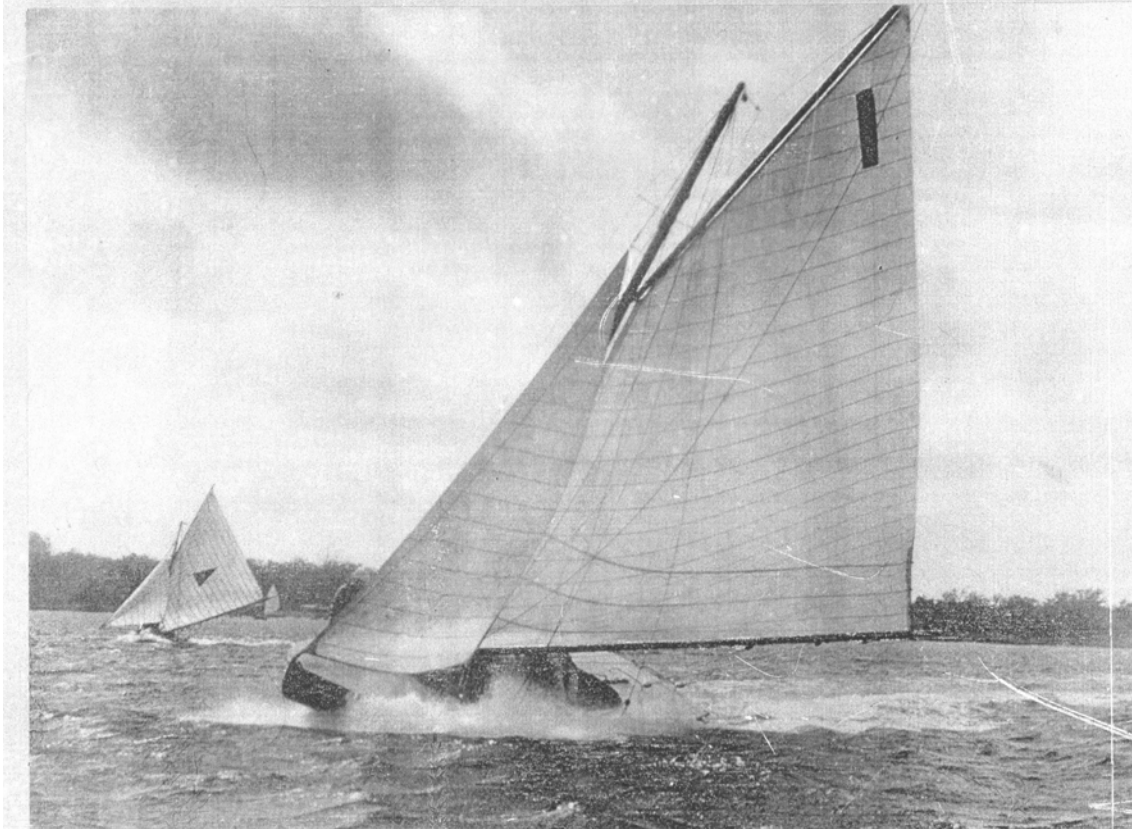
## **10. Looking forward**

The S80 was a local experiment in design some 25 years ago, but we were really only following trends set overseas that seemed sensible to us at the time. Today we see the same impatience with rating rules through the rapid development of light displacement yachts, especially sports boats that appeal to those who want a dinghy type performance and some self-righting capability from bulb keels.

It is interesting to see how the wheel turns full circle, because in WA our forbears raced light weight 32 foot long Raters on the Swan River, popularly known as skimming dishes, that were modeled after North American bilge board scows – they were in their own way earlier versions of today's sports boats (but were not self-righting), and were influenced by the Seawanhaka rating rule. Whilst that placed some restrictions on their development, the result did not preclude boats that were fast and exciting to sail.



Rater 'White Wings' 1907



In years to come I believe we will see the introduction of more small, fast, light displacement keel yachts, though with the demand for greater speed may come a limit in their use as racing yachts with some cruising potential as well. They will probably not match the range of use that has been demonstrated so well by the S80.

**Talk delivered to S80 association 2003**