

up pressure there, and thus cause blisters. A number of people have asked me what I have done about the blistering on *Morning Hustler's* bottom, so here is the story.

Morning Hustler is an S & S 34 built by Swarbricks of Perth in 1971. We bought her in 1975. In 1987 I was advised by a boat builder, for whose technical skills I have a very high regard, to seal her bottom with epoxy resin to prevent the development of osmosis blisters. She was then sixteen years old, with no signs at all of osmosis. On his recommendation I stripped her bottom back to the gel coat, and allowed her to dry out for five weeks. I then applied epoxy resin at the rate of one litre of resin per three square metres of underwater surface. This gives a coating 13/1,000 of an inch (0.33 mm) thick.

About two years later I noticed a few small blisters developing. Between September 1991 and April 1993 I treated about 400 small blisters. What had gone wrong?

The most frequently offered opinion was that I had not dried the hull properly. Water trapped under the gel coat was causing the blisters. I did not believe that this explanation was logical. Water trapped under a waterproof coating, could not, by itself, cause blisters. I was not prepared to carry out any further treatment until I was satisfied that I knew what had gone wrong the first time.

After a lot of thought, and bearing in mind what I have written in the second paragraph, my conclusion was that *Morning Hustler's* original gel coat was quite permeable. It allowed water and dissolved salts to pass relatively freely either way through it. Thus there was no build up of pressure and no blisters. I applied an epoxy resin coating which was not thick enough to be waterproof. In other words, I had applied a semipermeable membrane to the bottom of the boat. Water could pass inwards to regions of higher salt concentrations, but not return outwards. Therefore, pressure built up under the resin, and blisters started to form. My subsequent reading, particularly of Tony Staton-Bevan's *Osmosis and the Care and Repair of Fibreglass Yachts*, indicated that 24/1,000s of an inch (0.6 mm) of epoxy resin was required to waterproof a hull. I had applied half that amount, which was what was recom-

mended for treating a sound gel coat.

Over the whole of this period I was searching for reliable information on the cause and treatment of the problem. Early in 1993 articles and letters in *Practical Boat Owner* were devoted to osmosis. One writer was Professor Geoffrey Pritchard, Head of the School of Applied Chemistry at Kingston University in Surrey. He had been studying the behaviour of fibreglass materials for eighteen years "in environments much more severe than the Solent". In later communications he largely confirmed my theory. I say "largely", because he was not prepared to be dogmatic at a distance of 18,000 kilometres.

I was now reasonably satisfied that I knew the problem. It was then a matter of selecting from a number of methods to cure it. To cut a long story short, I chose the International Gelshield system. I was influenced in this choice by the statement of the General Manager of International Paint Limited in England that, "We have treated in excess of 25,000 yachts with Gelshield with little or no recurrence of blistering." The system comes with a guarantee, but it can be applied only by an approved operator. There are two in Adelaide, and I commissioned Port River Marine Services to do the work.

Morning Hustler's bottom was grit blasted to remove the existing gel coat and expose the fibreglass. She was then left to dry out until readings on a moisture metre indicated that she was close to bone dry. This took about six weeks. Several coatings of the Gelshield epoxy system and antifouling were then applied over a period of several days, and the job was done. International Paint Limited guarantee their system for three years on old boats and for five years on new. I will be disappointed if it does not remain effective for much longer than that!

While this work was proceeding, *Morning Hustler's* keel was removed. After 22 years and more than 50,000 miles offshore since we bought her, with many hard bumps on the bottom, we thought it wise to inspect the keel bolts and refasten the keel. At least one keel bolt had a very small leak. It was reassuring to have found the keel bolts in perfect condition, and in fact still shiny. There are a few years left in her yet! 

Malcolm Kinnaird AO

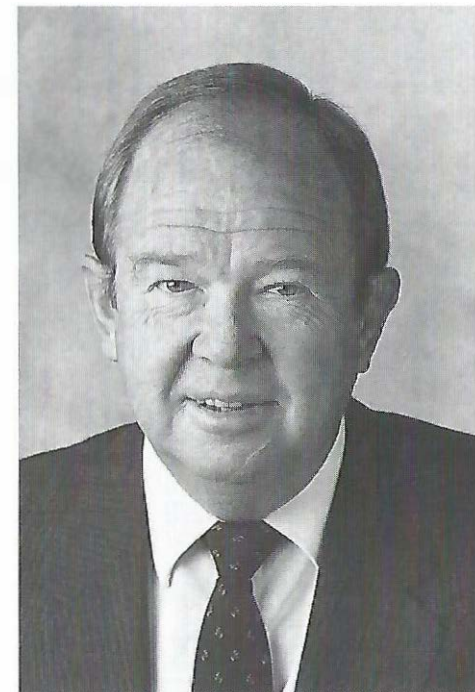
Bryce Kinnear

Malcolm Kinnaird, founder of the Cruising Yacht Club of South Australia, stepped down in July 1993, having served ten years as President and a further ten years as Commodore. He started sailing as a schoolboy on Lake Bonney at Barmera, and returned to the sport after graduating as an engineer from Adelaide University in 1958. His wife Diane was a daughter of a prominent member of Royal South Australian Yacht Squadron, Len Wigan. (Len's other daughter Judith married David Judell.)

In 1964 Malcolm and Diane joined the Squadron, and bought and restored a 21-foot yacht *Maid Marion*. She was succeeded by *Bandit*, a Swanson 36 commissioned by Mark Tostevin for the 1969/70 Sydney-Hobart race. After two or three years of racing and cruising *Bandit* was sold. Malcolm embarked on building an aluminium Sparkman and Stephens sloop, *Chaos*, but business pressures led to her sale before completion.

Malcolm was Chairman of the Outer Harbor Committee of the Squadron when his firm Kinhill became involved with the development of what was to be called North Haven. He tried unsuccessfully to interest the Squadron in moving there, and in 1972 chaired the first meeting of what was to be incorporated the following year as the Cruising Yacht Club of South Australia.

On 24 July 1974 State Premier Don Dunstan agreed to a suggestion by Malcolm and me to donate in perpetuity the Premier's Cup. This has become one of the most important events on the South Australian yachting calendar. That summer Malcolm, Diane and their children showed a growing interest in sailing out of Goolwa, where they bought a house and kept a Laser and a Hobiecat. Malcolm and his firm gave — and I mean gave — me tremendous assistance in preparation of plans and drawings for the site and associated works for the Goolwa Regatta Yacht Club, in which I was actively involved. He became fascinated by



cruising round Loveday Bay, Clayton, Rat Island, the Lower Murray and the Coorong. He commissioned his friend Alan Payne, the Sydney naval architect, to design a suitable shallow draft "adventure boat". The result was a hard-chine centre-board two masted vessel of about four metres, capable of carrying a large amount of camping gear and baggage. This was later sold to the Outward Bound organisation at Clayton, which was so pleased that several similar vessels were built.

Meanwhile, Malcolm and his band of Foundation Members of the CYC kept the concept alive, even though finishing the North Haven Harbor was slow. They enabled the first Board to negotiate and plan the North Haven Trust, which ultimately enabled the Club to secure its freehold land and water property.

The unique constitution of the CYC was the brain child of Dick Fidock, former Commodore of RSAYS and present President of CYCSA.



Catriona

This was passed in 1976. CYCSA has a membership of 1,051 and net assets of nearly \$10 million. The antagonisms with a few Squadron members of the early days are long passed. Successive officers and members of both clubs have worked diligently together to achieve excellent understanding and relationships. Each has benefited from the other, especially in racing and cruising activities.

Particularly during the Goolwa period a plan developed in Malcolm's mind to design and build a 46 foot (14 metre) ocean going yacht to be called *Catriona*. He persuaded a gifted young Sydney boat builder named Alan Smith to come to Adelaide. Alan first built a half-size model of *Catriona* called *Farrago*. This was used extensively by the Kinnaird family in Adelaide, Sydney and Melbourne waters. Work on *Catriona* began in 1977, with close cooperation

between Malcolm, Alan Payne and Alan Smith. Her specifications were that she should be able to go anywhere, and the materials used in her construction have reflected this. She was launched in 1984.

Malcolm was asked to take an interest in the construction of the South Australian sail training ship *One and All*, but he declined because he had reservations about the project as originally conceived. But when the vessel had been launched and only partly fitted out, funding stopped. The State Government stepped in. Malcolm agreed to chair a new Board on the condition that he should act as receiver. There followed an intense program of modifications to ensure that the vessel was safe and proper for the intended purpose. The original committee had accepted money from the public to secure berths for a round-the-world voyage as part of the

First Fleet re-enactment of 1988. The new Board had no alternative but to undertake this to honour its inherited obligations. *One and All* successfully completed the voyage, which included some high adventure, drama and unexpected extra cost. In addition, on 19 January 1988 Malcolm was appointed chairman of the board of the *Young Endeavour*, the brigantine which was the bicentennial gift of Great Britain to Australia. This ship is the focus of the youth training scheme of the Royal Australian Navy. It has given thousands of young Australians the opportunity to experience life at sea.

In the Australia Day honours of 1991 Malcolm Kinnaird was made an Officer of the General Division of the Order of Australia for services to engineering and the community.

SQ

It Makes You Think

Ian Moncrieff
Chairman, Safety Panel

John Quinn completely enthralled a capacity audience at his talk following the March Quarterly Meeting. I was impressed by the safety points which emerged from his amazing and unforgettable experience. There are Squadron members who venture out to sea overnight to Port Vincent, Kangaroo Island and beyond, who have not submitted their vessels to an appropriate AYE safety check. They should seriously contemplate John's comments, and assess their own equipment and capabilities.

He first showed us the thermal undergarment and the Musto vest which he wore for warmth. He declared that if it wasn't for the closed-cell pads in the vest, he wouldn't have survived the five hour swim. Foremost in his remarks was that he got his seaboots off easily, as they were loose fitting. If he had carried a personal strobe or some other waterproof light source, he might have been picked up much sooner. When *Mem* was knocked down all four men on deck went over the side. The others scrambled back aboard, but John's harness failed. When they searched for him they came within 200 metres, but could not see him in the dark.

For sailing at night in hard conditions John Quinn recommends —

1. Wear a life jacket or buoyancy vest which is suitable for working in.

The life jackets approved by Standards Australia do not lend themselves to comfortable working wear. John showed us an excellent combined safety harness and inflatable lifejacket of German manufacture. This is approved under a Danish standard. It cost about A\$500, and no doubt attracted 21% sales tax.

2. Sea boots should be loose fitting.
3. Keep a floating Dolphin torch in a handy locker so that it can immediately be thrown overboard. Have other waterproof torches on deck for general use.
4. The bottom washboard in the hatch should be as tall as is practicable.
5. The danbuoy and life ring units must be free to be readily cast overboard.
6. Crew should not sit on the rail. They become tired, dehydrated, hypoglycaemic and disorientated.

Members contemplating reviewing their safety equipment should obtain a Squadron/CYC check sheet from the Office. Category 3 applies to sailing in Gulf waters. All members listed in the Safety Panel are authorised to sign safety certificates on behalf of the Squadron. They are readily available to offer help and advice.

[Editor's note: Do not allow seasick crew to lean overboard to vomit, regardless of whether or not they have safety harness on. It's not easy to pull somebody back by the ankles. Make them use a potwatcher, and then empty that.] SQ

New By-Law OH24

Mooring Inspections: The Outer Harbor Committee shall specify requirements for chains, anchors, buoys, pendants, fenders, any other requirements, and their frequency of inspection. The Manager shall notify boat owners in writing of their obligations to inspect their chain moorings by a specified date; and to

report in a prescribed fashion that they have done so, and with what resulting actions. If no such report has been received within 45 days, the Squadron may inspect the moorings and take necessary action to render them safe, which shall be at the cost of the boat owner concerned. SQ