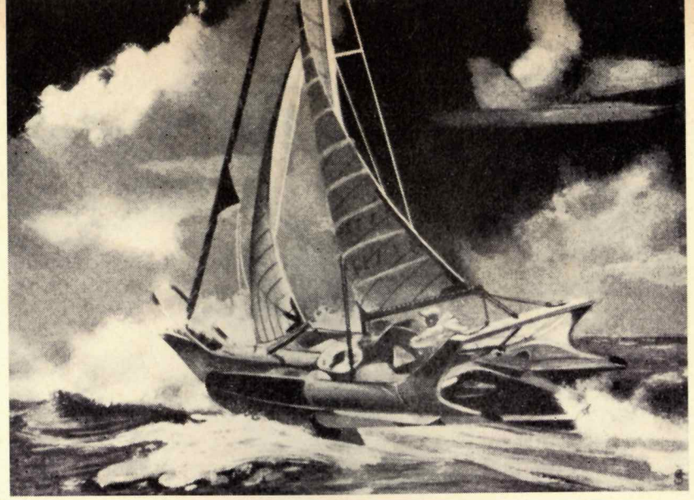
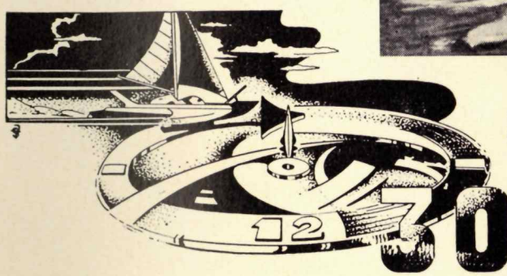


J. S. TAYLOR,

the Australian designer and innovator, tells us about one of the great feats of little-ship sailing in a 20 ft. Trimaran of his own design. (He did the illustrations for his story, too)



a day's run of 306 MILES

FIRST OF JULY, SMOOTH SEAS,
EIGHT TO TEN KN. SE. WIND,
SLIGHT FLAT SWELL. (*MAUI'S* logbook of 1959)

THE log is like a pair of crutches to the unreliable human memory; in turn it is a miserable poor tool to express the subjective impressions of the mind.

The jotted down record just could not tell about the impossibly-clear winter day, so typical in this part of the year south of the Coral Sea. The SE. trade, after having grown tired, is in one of its rare gentle moods and helps to make the most perfect sailing day the cruising man could wish for. The redesigned and rebuilt *Maui* knifes to windward in a style she never possessed before.

Tiller lashed, she keeps an unerring course on her own, relieving her skipper from activity. Both the tired mind and body have found the long-seeked relaxation by fixing a hypnotised gaze on the slender and razor-sharp bows following the swell rhythmically.

Her movement keeps throwing the fine blue pearls of transparent water high up on to the topsides, cascading over the strange Maori carving on the stem. Burnt black by the artist of a lost craft, in the acid smoke of glowing driftwood, the surface has a rich ebony colour.

The dagger-like cutwater cruelly slashes into the froth surface and the narrow transom starts to pull a shallow trough in the wake. There is a bit more weight in the wind and *Maui* has come to life.

The environment is uncannily quiet, just the burbling brook behind the transom breaks the fantastic silence. The wake is faint, but stands out on the mirror-like surface, and one can trace it right to the horizon. It is our last bridge to the firm ground left days ago.

There to the west spreads the oldest continent of the world, feeding the youngest civilisation. People living on this vast land belong to a tribe that pays devoted homage to the twin pagan gods of regular way of life and technical civilisation. Successfully conditioned to the new brave world, they have elected the pay envelope a chief priest at the shrine of "welfare living".

The members of the sect believe to have everything, and to have everything better than it was before. By punching a button they can enjoy more seabreezy seabreeze than the real one, and their vitamin tablets pack more kick than any natural product. They can travel faster and farther than anybody before and they can enjoy a more adventurous life than Cortez the Conquistador. . . . All done in an air-conditioned room, sitting in a comfortable easy chair, sipping the ice-cold artificial orange juice and gazing into the bluish light of the idiot box.

The achievements are admired by many, but the escapist is not a rare specimen. Even split personalities, unable to choose between two worlds, used to make valiant efforts to save their souls from the final reorientation process. Time to time a new hobo of the seas starts to retrace the long-vanished wake of people who preferred the real thing to any improved and fortified artificial product.

We are on our way to the Reef. The great Barrier Reef is one of the world's natural marvels and, even to-day a fair portion of it is uncharted. Most reliable charts are based on data supplied by Captain Cook.

We had no famous tourist resorts in mind, exploration of the outer Reef and the treacherous passages were in the plan. Not a very sane plan, not even with the right boat, but the sane way of life was the very item we have left behind to sink into the more and more turbulent wake of *Maui* a few days ago.

The last observed position placed us more than 150 miles offshore and we have kept the course for so long just because it was the comfortable self-steering one.

About six the wind increased and at eight *Maui* was pressed hard under her light-weather gear. Time has come for a more purposeful activity and *Maui* settled in her new course 320 degrees magnetic, keeping the apparent wind slightly abaft the beam and presenting the queer sensation of reaching fast in following seas.

In spite of the freeing wind, she just could carry her peakhead genoa and in a short time she was pressed just as hard as before on the wind. All the restraint felt before was gone and she was moving with the consistency of a motorboat, keeping the needle of the speedo between 13 and 14 knots.

In the prevailing conditions there was nothing thrilling about her speed. She has given the impression of a low-flying raft without the usual wild movements and flying spray associated with fast boats. The slight seas were short yet, and she was overtaking them in quick succession but already feeling a small but helpful lift from the swell.

Maui was the fifth improved version of the first trimaran cruiser designed for offshore work. Her 20-ft. overall length, coupled with the 22-in. beam of the main hull make any attempt to turn her into a comfortable cruising craft futile. She is a trial horse, an over-sized experimental working model that could be sailed with a crew of one on long offshore trips.

The present version carries more sail than ever and, it is frankly admitted, she was rigged especially to hunt new offshore performance records. She has broken already, one by one, all recorded highest performances of her predecessors but she never came close to the 217-mile daily run of *Maui*-1 which had a modified sea-sled bottom. That run was made in very favourable wave-riding conditions and *Maui*-1 was the most magnificent surfer I have sailed.

We were not trying to prove the ability of a trimaran cruiser in offshore conditions. This result has been boiled down a long time ago. If the daily run recorded is between 150 and 200 miles without really trying then the boat is very fast, even by trimaran standards. Trying to break the old record would prove the higher potential speed of the new version, but amounted to a stunt, which, if successful, had hardly any chance to get repeated.

She can spread 374 sq. ft. of sail area, in place of her usual 250, which served her well even in lightish conditions. 374 sq. ft. in an efficient rig combined with less than half a ton displacement is a mighty combination if quick reduction of the over-sized area could be assured.

The design is unique for a trimaran. She has very short planing floats pushed well in front of the centre of buoyancy. By design, they develop an unsuitable shape for fast going if *Maui* heels to anything like capsizing angle. She goes fastest when about half of her maximum stability is called on to carry her sails. If pressed harder than that the increased resistance is not matched by the increased pressure on the sails and she slows down. The over-canvassed *Maui* rings the alarm by not responding to gusts in the usual manner.

She would not tempt the racing-minded skipper to carry more sail than suitable for the conditions.

The rig plan shown uses the experience gained by the previous variations. A trimaran like *Maui* is capsizable, in spite of the opinions of some designers. Being sailed, as a rule singlehanded, she needed a rig that contributed to both safety and easy handling.

The staysail is boomed and self-tending. The genoa furls on a forestay spar, the drum of which would be operated by the pull of the mainsheet in case of emergency. The shrouds are terminated in a spring-tensioned gadget that first eases both main and genoa sheet, and later lets them go if the pull in the shroud nears danger level. After being released the genoa furls automatically, using the very same pressure of wind that would have caused the damage.

An additional safety factor is the fact that the boat is entirely self-bailing. It has been demonstrated that after being totally submerged she drains the last drop of water in not more than six seconds. A Polynesian boat has a very small cubic content and a very big hatch opening in comparison. The non-selfbailing Polynesian could ship more water through her hatch than could be handled in time.

The present variation is not an all-out planing craft as were her predecessors. After lengthening (the first version was 18 ft. LOA.) the mainhull has acquired very fine, sea-kindly lines and the underwater part incorporates the latest ideas of trying to create a low-resistance hull by boundary layer control. Her deep hull draws only 14 in., but seems to be quite satisfactory to go to windward without boards. On this trip we carried a second secret weapon—a very narrow, high-aspect-ratio board based on the same idea as the hull.

Anyway, back to passage-making . . .

Some seas are building up slowly with occasional white horses. *Maui* is not surfing yet, but takes positive advantage of the longer seas. She keeps climbing up on the back of the wave, hesitates on the crest for a second and starts a fast downhill ride with the speedo steadily rising and with hardly any pressure on the sheets.

Maui enjoys the most perfect conditions and carries a rig to suit. There is a lot of time on hand and the skipper turns to the usual occupation of the lone sailors, cooking the goodies.

The first few hours reading gives better than 13 knots average. *Maui* has done better than that for short distances before, but the wind was exceptionally steady and slowly increasing, thus giving the hope for a good 24-hour run. I started to press her to the limit.

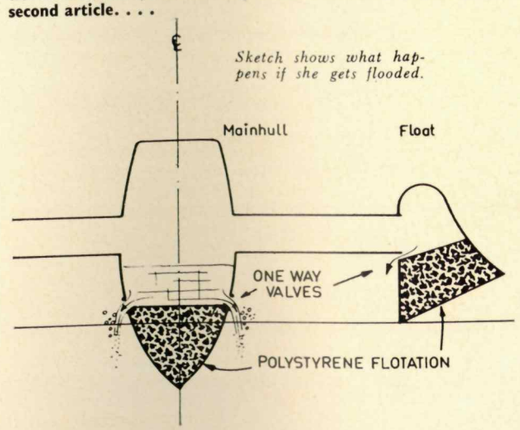
Twenty fathoms of quarter-inch chain and the heavy plough anchor with the light ground tackle were moved into a locker under the windward seat in the cockpit. After flooding the ten-gallon ballast tank, we have carried considerable weight far aft of the centre of buoyancy and as far out to windward as possible. Keeping to the line of hard work associated with record-breaking attempts, the skipper's weight was deposited into the windward safety net and in a short time she picked up nearly four knots extra speed in the ever-increasing wind.

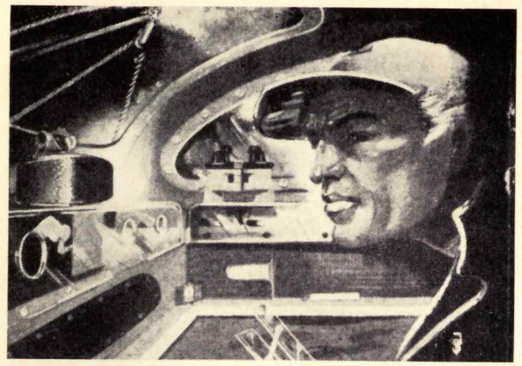
The hourly log reading and the occasional speedo reading are nearly identical. The help by the developing long

(*Continued on page 50*)

R, 1963

The very advanced trimaran thought out by sailor-designer J. S. Taylor for his astonishing day's run. Technical points are mentioned in the text, but the design will be described fully in a later, second article. . . .





The bulkhead compass above the chart table indicated that Maui was keeping a true course . . .

306 Mile Day's Run

(*Continued from page* 23)

waves seems to cancel out the effect of lulls. As time passes, she feels slightly over-canvassed in spite of the efforts to keep her in the right trim. While tobogganing down on the face of the wave she starts to trim by the bow. The change of attitude is hardly noticeable but detrimental enough to be recorded by the needle of the speedo. In the stronger gusts her speed drops to 12 knots.

One deep reef in the main while the rest of the rig is left untouched is like spurring a horse and *Maui* settles down to serious surfing. The seas are well-developed and she takes them slightly on the quarter. The wind starts to be gusty and strong, so keeping her at top performance makes the handling of the furling gear an annoying necessity.

The pleasant and fast sailing develops into a wild ride, exhilarating but hard on the stamina at the same time.

A quick check on the speed chart shows promising progress and I really start to feel the long-awaited chance coming. I prepare for a long watch that might extend the night through.

After furling the genoa she can be left unattended, still making about nine knots. We are now in the world of comfortable cruising and the break is used to bring records up to date, to do the chartwork, and to prepare cold and hot meals for immediate and later use.

After both satisfying the earthly needs and listening to the weather report, I felt the need to prepare for a good tough night by stretching out on the top of the bunk. The deep polystyrene flotation dampens the noise level considerably, but even so the din is incredible below decks. The gentle rush along the hull is like a thundering waterfall inside, and the fluctuating strength of the wind could be judged, after practice, quite accurately. The light fibreglass and ply construction, coupled with the thin stainless steel rigging, passes very well for an over-sized violin.

The small bulkhead compass above the chart table shows that *Maui* is keeping the course well and, after checking for other ships in the offing, I decide to snatch a short nap.

The single-handed sailor must sleep like a hare. Even in deep slumber I feel the ever-changing rate of acceleration as *Maui* climbs the back of the wave, or goes tearing down the face. The familiar clatter invades the subconscious, which filters the noises, and if there is no sign of danger the body is allowed to continue to rest.

I keep listening to the din, ever-increasing sounds distorted by the first deep sleep. I can see *Maui* as from a high vantage point surfing on the faces of endless seas and making the noise of a fire engine. Suddenly I am awake, to find that the noise is not less in reality than it was in the dream. The wind has kicked up to the usual trade strength and fair-sized seas were running.

She was making better than 16 knots under working canvas. In the late afternoon the south-easter finds 25 knots-plus with all signs of increasing. The moonless night has fallen and *Maui* is having a hard time in the tumbling seas.

The usual routine of sailing her by speedo in the dark fails this time. Around midnight the wind is above 30 knots and gusting strongly. While cruising it would be time for the spitfire or running before under bare poles, but *Maui* is flogged along. The mainsheet is released by the safety gadget a couple of times in each half an hour, and *Maui* does not respond with acceleration.

It is chilling to listen to the approach of a huge, breaking sea and to be able to see nothing. The boat lurches and goes into an alarming trim, feeling the effect of the increasing slope; then, as an anticlimax, the foamy fingers of the sea that collapsed in a thunder seem to fade out before coming really close to the transom. You have to sail by feel, there is nothing the eye could get a hold on but the eerie light of the luminous crests.

After years of intimate friendship with the sea the lack of light is no more a handicap and I can see her antics as if it were broad daylight. *Maui* is in a nasty seaway, but these are the conditions for which the ancient Polynesians designed their boats.

What is happening is impossible in any conventional boats' standard, and lunacy by any standard book of seamanship. The fast offshore Polynesian is a totally different boat and requires a seamanship about which no book has yet been written.

It would seem prudent not to provoke fate and slow down.

In turn, one cannot go slow with a Polynesian in the present conditions. She would make more than 10 knots under bare poles; streaming warps has never worked; and trying to hang to a sea anchor is as good as an attempt at suicide.

The waves exploding at the transom in a following sea are feared by most skippers, but the Polynesian is not concerned with what happens in the wake—it is the past, without significance. The danger is right ahead, or up to windward. *Maui* is faster than the wave, she is a perfectly-controllable powered surfboard, and the collapsing breaker is pushing away that which it is trying to reach.

Now it is impossible to see anything not illuminated by the fluorescent crests, and *Maui* is doing her inimitable roller-coasting, shooting boldly into the black void before us. The glowing spray is thrown as high as the crosstree, enveloping the boat in an unearthly light.

After midnight we get severe rainsqualls, which are common to the area. They last only a few seconds, but have the kick of a steam-hammer and scarcely a breath of wind between them. During the hard blows *Maui* acts drunkenly and is pressed very hard in spite of the immediately reduced canvas. Daytime it is frequently possible to dodge the vicious squalls, just by depending on the high speed of the boat, but nothing can be seen in the dark and reefing and shaking out the reefs were the order.

The buffeting has put an enormous strain on the rigging and taking it easy was the obvious thing to do, but the last check indicated that we still can make a "best-ever" daily run, if we keep going.

At 0300 we are under drastically reduced canvas. With her 50-sq. ft. spitfire she is docile and more comfortable than any conventional craft of her size would be in the very rough conditions—but even so the movement is little short of terrific.

She is topping eight knots and frequently surfing. It is time to put on some dry gear and to get a hot meal and a hot drink. It turns bitterly cold and, at this comparatively slow speed, the phenomenal sea conditions are quite apparent. In the erratic light thrown through the big perspex dome above the chart table I can see no spray, but big chunks of solid water flying by.

We should have plenty of searoom before us, and it does not seem likely that we will see our target, Saumarez Reef, before 1000 hours, but you think of the galloping miles in the darkness, and doubts are inevitable . . .

You sense the tremendous area of the Great Barrier Reef with its jagged coral faces rushing up. You go yellow and decide to check on the accurate position.

An hour later *Maui* is sailing comfortably in easing conditions. She carries her genoa and nothing else. Reefing this odd rig to bare poles takes no more than a few seconds without the necessity to leave the cockpit.

At daybreak the wind has steadied to 15 to 20 knots, but the lumpy seas make sailing anything but comfortable.

Sighting the low-lying reef is not easy and from daybreak we keep a sharp watch. Saumarez Reef first appears in the form of a steaming kettle. An enormous swell is breaking above it, and the seas to windward are dirty. We are sailing through this patch of water wetter than any time during the night until the reef is on the beam and we set course, a fast-reaching one, in the direction of Frederick Reefs, our first projected stop. Frederick Reef is on our starboard beam at 0930.

Our chart shows that we have covered more than 350 miles from the start of this episode. In the 24 hours the distance was 306 miles by the chart and 342 miles by the log!

The discrepancy could be accounted for by either the south-setting current, which runs pretty fast at times or the erratic course sailed during the night and not recorded on the chart—or a combination of both.

You think *you* would have enjoyed the trip?

If you do, then you have an approach to sailing different than that of the average cruising man. This is the point I would like to make for the benefit of those who think that to go cruising on the open sea and still make record passages, all they need to have is a new-fangled Polynesian cruiser. Although the 306 miles day's run does not come even close to some performances predicted or hoped for by optimistic designers, this effort has never been beaten by any other Polynesian cruiser during the years. The explanation is given in the story—and it is quite obvious that such a daily run is *not* the cruising performance of *Maui*.

For a start, she is far from any cruising proportion and she was built for offshore performance without compromising. She was especially fitted out for breaking records and she was sailed irrespective of safety considerations hard—very hard—all the time. Sailing a trimaran offshore with ballast shifted to windward and flogging her in rough sea conditions to squeeze the last drop of performance is the way the designer could get a lot of information. In turn, none of those things should be expected from the skipper of a cruising craft.

Nevertheless, the story seems to indicate that the well-designed Polynesian offshore boat has something the ballasted conventional craft never had—and this applies to both cruising and offshore racing.

[*In a subsequent article* Maui's *revolutionary centreboard will be described.—Ed.*] ∎∎

Many of the ideas for the revolutionary Maui were tried on this little experimental trimaran. However, ideas go on—and Taylor's experimenting is very far from being at an end.

BOTTLE POST

Algoa Bay Haven . . .

Eastern Cape Yacht Racing Association, P.O. Box 2077, Port Elizabeth.

Dear Sir,

I read with interest the editorial and letters in your past few issues concerning more inspired sailing waters for small-boat enthusiasts and a possible site for a small-boat harbour near Miller's Point, Cape Town. We in Port Elizabeth suffer more than most from lack of adequate sailing waters, our only venue being the narrow Zwartkops River, which has silted up considerably in recent years.

Representatives from all forms of boating, sailing and fishing have got together and formed an action committee to investigate and promote the development of a small-boat harbour at Humewood/Summerstrand. A site between the Bird and Pollock Rocks is regarded as suitable.

The Port Elizabeth harbour is out of the question for reasons of security and the fact that one's tenure would never be secure. Our Lipton Cup fleet died for lack of facilities and withdrawal of concessions.

We envisage a harbour of some ten acres providing anchorage for keelers, charter motor craft with slipway facilities for small boats, but not for commercial fishing interests. A harbour on the Italian Riviera style with restaurants and clubs would provide Port Elizabeth with a fantastic tourist attraction, especially for international deep sea fishing contests.

Before submitting the scheme and models to the Government and Provincial Council this committee intends investigating all aspects of the technical problems which would be encountered and particularly whether the site chosen is the best, considering the strong winds of Port Elizabeth.

We feel that there must be many of your readers in South Africa who have had practical experience in designing and constructing small harbours here and overseas and who would be prepared to offer advice and correspond with the committee.

Readers who think they can assist us technically are kindly requested to write to me for more details. Photographs of overseas yacht harbours will also be useful.

T. A. Senn.

An article on small boat haven and facilities will be published in a later issue.—Ed.

Trimaran Cruising . . .

P.O. Box 8, Mbabane, Swaziland.

Dear Sir,

We are thinking of having a trimaran built during the next 12 months and I have written to Pivercraft in this connection.

It would be appreciated if you could put us in touch with authorities able to advise on round-the-world cruising —at leisure—where expert advice could be obtained in connection with the fitting out of the craft, navigational instruments, stores, etc.

You might perhaps be able to advise on what you consider suitable books covering the sailing of craft, conditions in the various oceans and the best place from which to purchase the charts required.

I know this is asking a great deal of you but if we are to be able to live on a craft and spend some years cruising, at least, with your assistance and that of any authorities, such as John Teale and the various outfitters and suppliers, plus anyone who has done a fair amount of world cruising and who might be prepared to advise us, we should at least get off to a good start.

P. O'Shea. ∎∎

We suggest, for the start, you drop a line to John Goodwin, Applegarth, Main Road, Hout Bay. He has a lot of practical experience on trimarans. Also write to Mercer, Bach & Hickson, Dock Road, Cape Town for charts and Select Booksellers, P.O. Box 1904, *Cape Town for a variety of suitable books.*—Ed.