



# THE HARRISON BUTLER ASSOCIATION



*'Z' 4-tonner*

NEWSLETTER No:24

WINTER 1986



## OUR PRESIDENT'S LETTER

The Crag,  
St. Mawes.

October 1986.

Dear Members,

It always seems a very short interval between receiving one Newsletter and embarking on the next and here I am, at The Crag, starting again.

First, after Peter's shocked stop-press announcement in the Summer Newsletter, let me reassure you on the subject of my fractured femur. I made a lightning return to mobility and driving but cannot speed up the sticking together process ordained by Mother Nature so must gang warily for a while. Circumspection is the name of the game and sailing and mountain-goat gardening are out for the time being. My thanks to all those who sent words of sympathy, hope and good wishes. The speed and ease of recovery came as a surprise to me as well as to those who watched.

Forty of us assembled at the Jolly Sailor on September 20th. for the Laying-up Supper but we missed, among others, Peter and Ruth Mather, who were unable to come because of Ruth's illness. We all signed a card which was posted the next day and which, I learned, was greatly appreciated. I was relieved, when I rang on my return, to learn that Ruth's condition had improved and she certainly sounded better.

As had been intimated, the B.B.C. did some preliminary filming, to be followed next year by H.B. boats being filmed under sail and to that end I think we should organize a Meet as of yore, so that viewers may be shown as wide a variety as possible of T.H.B.'s designs and, not least, for our own enjoyment.

Pet and Biddy Russell came to the Supper and Pat and I met again after an interval of about 56 years! ARDGLASS has at last left the Russell family after 57 years, having been bought by Peter Moseley, so her home base is now Fowey where she will keep CHLOE company.

As I surmised, SABRINA was soon snapped up - by Ian Howlett, and it says much for my father that a professional designer of such repute should chose an H.B. boat for himself. Even his wife is beginning to enjoy sailing, aboard SABRINA, which she told me she never had done previously. Ian's involvement with the AMERICA'S Cup challenge necessitated his being in Australia at the time of the Laying-up Supper so we have yet to meet. Those who watch "Australia's Cup" at 6.30 p.m. on Saturdays (Channel 4) will have seen Ian's WHITE CRUSADER battling it out off Free-mantle.

COBBER and ZENOCRATE joined the indigenous H.B. boats at Bursledon. The little "Cobbers" get bigger each year and one wonders for how much longer they'll be able to fit into a Z4?

Change of ownership has made no difference to ZENOCRATE's propensity for winning the Round the Island Race in her class - for the third year running. Congratulations to John and Mike Atwell. CONSTAR came fourth, I believe, this year.

Geoff Taylor has gone charging off again to the Caribbean, in his "other boat". He had been working on WATERMAIDEN during our so-called summer and has nearly completed his programme.

I had a postcard recently from Steve Phillips and Marlene Rice from San Francisco. They were en route from British Columbia to Mexico and Steve has promised we shall hear more. He said of GALATEA: 'From Cape Flattery Wash we sailed 100 miles offshore, 880 miles in 6 days 16 hrs, 25-35 knot N.W. winds. She's a bit rolly, but fast and moves very easily. We arrived in good shape, happy and healthy and feeling very good about the boat.'

in

We decided to put/my father's Y.M. article on Hull Balance this time as it was something which perplexed him for many years; how to get a design just right.

We also thought you might perhaps be interested to see my one and only attempt

at yacht designing. Physiotherapy exams and then marriage intervened and took me far away from Hampton-in-Arden and all the paraphernalia of designing but I returned home for a fortnight and completed what I could, leaving my father to add the keel, the sail-plan and the accomodation plan. A Dane, Erling Fjordholm, planned to build her and when I last heard, way back, he was looking for suitable timber but as a result of his and our own housemoves we lost touch and I never heard what happened.

Frank Spooner wrote to me with news from the Melbourne area. He has retired and he and Morrie will have moved from Mentone to Cowes, Phillip Island, before the end of October. They will live within walking distance of where THUELLA is moored and will, of course, now have more time for sailing. He asks about the Thuella design, which was made during World War II specially for amateur building as my father surmised that small, easily-built boats would be what people would be able to afford when the conflict was over. He remembered post-Great War conditions and had made a (not very good, as he himself said) design during that war, which would be easy for amateurs to build. Thuella is a much better design than the earlier one.

Frank, as did Frank Hart in his letter (Summer Newsletter), wrote admiringly about John Hartley's Dream-of-Arden which is nearing completion. He commented on the high quality workmanship which John has put into her building and the photographs which I have demonstrate this. Frank is very happy with THUELLA.

In the summer I went to Falmouth where I'd been told that THUELLA (ex.REFORM) was lying. I found her and felt that she should have retained her original name but hyphenated to RE-FORM because something very odd has happened to her underwater at the stern. She certainly had ceased to be authentic H.B. even if she had started out as such. And, she has a doghouse! Her owners (whom I didn't, in fact, meet) weren't interested in her pedigree and regarded the doghouse as a feature which encouraged them to buy her.

Also, last summer, I had one slight maritime adventure: mildly maritime and a slight adventure. On returning from Truro on June 18th. to the King Harry Ferry on the Fal, although I was in plenty of time for the 17.30 ferry, I and two cars ahead of me were unable to embark as it was full. However, we were able to watch while tugs manoeuvred METHANE PROGRESS from the mooring she had occupied for several years. There was some hitch and the whole entourage drifted back up-river and allowed the ferry to cross and return. We then embarked and had a grandstand view of the proceedings which got going again. METHANE PROGRESS with two tugs at her bow and one going full speed ahead at her stern, acting as a brake, made very slow progress down the Fal.

When the river was clear the ferry started up and there was a grinding, scraping noise but no movement. Cars at the "stern" were reversed on to the slipway and we set off again - only we didn't: we were still aground. After a while one of the tugs came back and threw us a line and towed us off. Then, we had to return for the abandoned cars and finally made our belated way across the river. How dull it would be if we merely drove across a bridge!

DAVINKA is on the west coast of France where Boyd and Desirée are having an autumn cruise before laying-up and returning to England by car and ferry. ALEXA, on the other hand, has not been in commission this year as she's being worked upon while hauled out. Why don't we hear more about the perigrinations of the H.B.A. fleet?

Camilla Sternini went to Teneriffe in the summer to see how Alessandro was getting on. I rang her at the end of September and he was still in Teneriffe but intending to cross the Atlantic as soon as JARDINE was ready.

Summer in the South was remarkably cold and unwontedly windy: by contrast, October (first half) has been a season of mists (many) and mellow (very) fruitfulness (some rather wizened blackberries), with next to no wind and no rain but now (18th) things have changed: glass has dropped, rain has dropped, temperature has dropped, wind has risen.

A new phenomenon has occurred here: a small seaplane comes out of St. Just creek and flies around making circuits, landing and taking off again, over and

over again. It's very noisy and I remarked to someone that it reminded me of the Schneider Trophy races (one of which we had watched from aboard ARDGLASS). I've discovered that the seaplane is indeed a rebuilt replica of the British plane which won the race and which was the precursor of the Spitfire. It may be seen (and heard), in the Solent area next year if it passes all its tests.

There was a noticeable drop in the wine consumption at the last A.G.M. and several people asked for fruit juice so this year's form asks you to state your preference. If I don't have to spend so much on liquids I can make the solids more interesting. Remember to keep February 28th. free and join me at The Chestnuts.

Please send me a reminder if you are waiting for me to send you plans, answers to questions or any other matter which I may have forgotten. Sometimes I lose track.

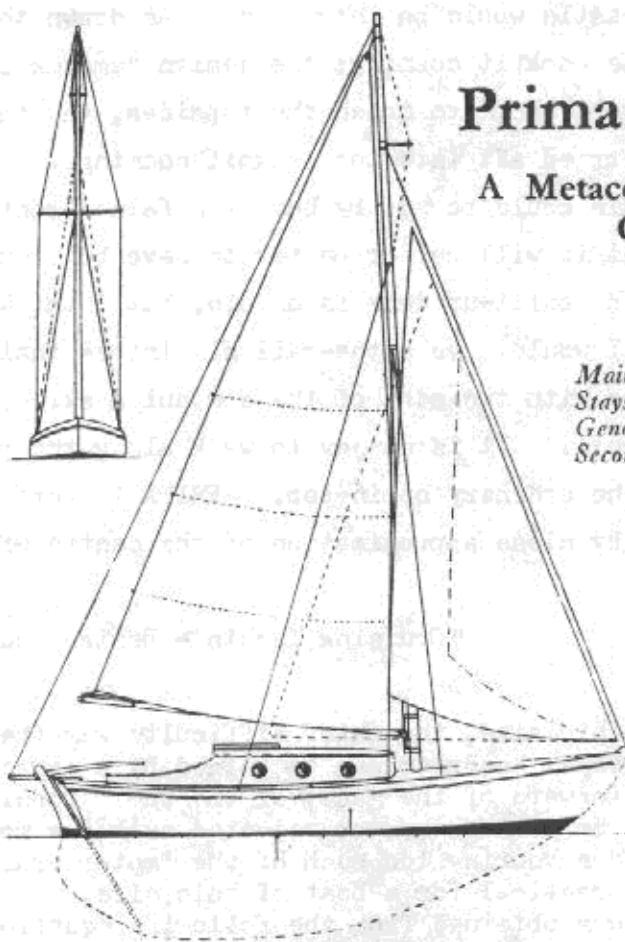
Will members who are looking for or who come across copies of T.H.B's book: "Cruising Yachts: Design and Performance" please let me know (again) so that a waiting list can be made. Copies of the book do come on the market occasionally and a few booksellers keep me informed. They usually cost £12 to £13, plus postage but occasionally, much more is asked.

Meanwhile, have a happy Christmas and look forward to good things in 1987.

That includes sailing!

And, my greetings,

Joan.



## Prima, 4.3 tons

A Metacentric Tabloid  
Cruiser

Mainsail ... 160 sq. ft.  
Staysail ..... 80 sq. ft.  
Genoa ..... 114 sq. ft.  
Second  
staysail 37 sq. ft.

LOA .....	22 ft.	Lead keel .....	18 cwt.
LWL .....	18 ft.	Inside ballast .....	About 6 cwt.
Beam .....	7.5 ft.	Turner's stability factor .....	20
Draught .....	4 ft.	Sail area .....	240 sq. ft.
Displacement .....		3 tons	

"PRIMA was designed by my daughter, Mrs. R. Jardine Brown, then Miss Ormonde Joan Butler, some seven years ago (1937). She was entirely responsible for the design and all the hull calculations including the metacentric analysis. Owing to her marriage I was obliged to design the lead keel, the sail plan and the cabin plan. The lead keel is too light and should be at least two hundredweight heavier.

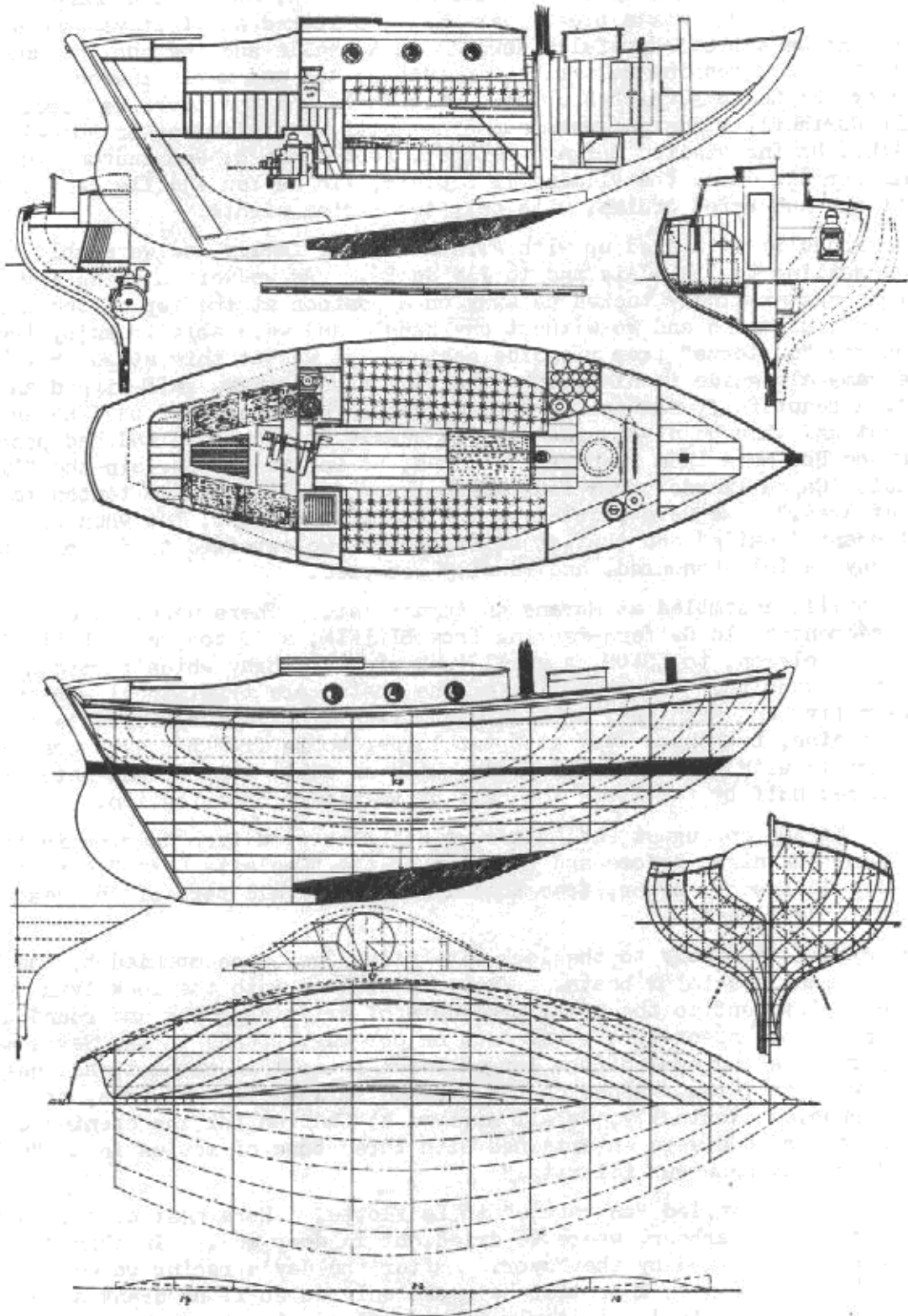
"The design appears to me to be an excellent one. She is of Scandinavian design, and if her sections were spaced out to make the water-line 20ft. and her stern altered to the Scandinavian type as in THUELLA, she would be an ideal small sea-going cruiser. The tumble-home of the topsides aft and the rounded transom are original characteristics which give her a personality all her own, but they will not be appreciated by the builder. She should be a fast, handy, seaworthy and comfortable ship to go anywhere in any reasonable weather. Her sail-plan is on the small side, suitable for single-handed cruising. The cabin plan explains itself; there is comfortable accommodation for two. Were I working out the accommodation today (1944) I should build up the topsides amidships as in AELLA and THUELLA. This would give a really roomy cabin and a grand deck, and the headroom in the forecastle would be increased. As drawn there will be a little difficulty with the cockpit coaming; the design demands that the sides of the cabin-top shall tumble-home to match the topsides, and this tumble-home must to some extent be carried aft into the cockpit coaming which will make uncomfortable sitting. This could be met by having a false front to cover the cockpit upper lockers, but it will be far better to have built-up topsides. It has been suggested that the built-up deck is unsafe, but I think that one can walk near the middle and I would have a toe-rail six inches inside the outer margin and another in line with the edge of the companion slide; generally the boom would act as a handrail. It is no joy to walk along the plank-ways of a small yacht fitted with the ordinary cabin-top. PRIMA is perfectly balanced both metacentrically and by close approximation of the centre of the heeled and upright curves of areas."

"Cruising Yachts - Design and Performance."

"As in most yachts of this size, the chief difficulty was the toilet. This can be overcome in three ways: headroom can be gained by a large forehatch; the cabin-top can be carried forward of the mast; or the whole topside can be built up motor boat fashion. The latter way was rejected as being most practical but looking very unsightly and savouring too much of the "motor cruiser. The method adopted seems to be most practical for a boat of this size.

"The stability factor was obtained from the following equation: Weight of ballast in tons x distance of centre of gravity of ballast below metacentre in feet, divided by sail area in square feet x height of centre of effort above the metacentre. 20 is a very good figure."

"Yachting Monthly", November 1939.



*Lines and accommodation plans of the single-handed cruiser.*

## A CRUISE WITH A BONUS

By

R.F.Boyd Campbell, R.C.C.

Our plan this year was to take DAVINKA well south, out of the Channel, for our summer cruise. 1985 was a bleak year and 1986 looked as if it was going to follow suit, so we set off hopefully towards La Rochelle and the sun on June 12th. After a windless crossing we arrived in L'Abervrach and were cleared the following morning by the Customs, picked up some more fuel, and the Livre de Bord. We then had fair Northerly winds and warm sunshine until we arrived at La Rochelle on July 11th., having visited Morgat, Benodet, Port Manec'h, and Sauzon, into the Morbihan for six days, the Vilaine le Croisic, Ile de Yeu and Ile de Ré, a very pleasant and unhurried cruise, with only two Marina nights.

In La Rochelle we linked up with Alison and her family and were able to take them day sailing to Ile d'Aix and to Ile de Ré. As we were staying for a week the Harbourmaster kindly tucked us away on a pontoon at the top of the harbour so that we could come and go without any hassle and were able to enjoy the fireworks on the "quatorze" from ringside seats. It was at this stage that Philippe Lavigne came alongside in his very attractive five-tonner, gaff-rigged and built in Etel, a beautifully maintained wooden boat. He recognised DAVINKA as a pedigree boat and when he discovered she was nearly 50 years old and had passed through the Raz more than twenty-five times, he invited us to join the "Flotilla en Pertuis 'Cagouillarde' pour tous les bateaux traditionnels de toutes tailles, styles et ages." We were puzzled by the Cagouillards bit, but when we found that it meant "snails" and that at no stage were we expected to do more than 10 miles a day we felt honoured, and readily accepted.

The Flotilla assembled at Marans on August 1st. There were, in all, 24 "Vieux Gréements"-Old Gaffers-ranging from BILIKIN, a 20 ton ketch built in 1911 on the Ile d'Oléron, to YUKON, a small junk-rigged dinghy which turned up at each port that we went to. The majority of the boats were traditional working boats, of between five and six tons, crewed by families from as far afield as Bordeaux and the Vilaine, but there were also two larger boats from Bordeaux crewed by boys and girls with social problems and, with an adult skipper and mate, they were financed half by the State and half by voluntary contribution.

We left Marans on August 2nd. after we had recovered from dancing in the Square until 2 a.m. the night before and partaken of the "Omelette Géant" served on the quay by the ladies of Marans, free to all comers and all part of the Festival de Sport Nautic de Marans.

We proceeded in convoy to the lock five miles away, accompanied by the Folkloric Singers and many spectator boats. Everyone crammed into the lock tying up to each other, very different to the usual procedure of drifting round and round until the lock opens. More spectators cheered us on our way. Once in the Sevre most of the smaller boats and some of the larger began to sail in earnest, and seemed unconcerned when they ran aground on the mud and sailed off backwards, or were towed off by friends. Eventually, we all arrived at Charron for the opening of the "Fête des Moules" and were entertained with three tons of moules in an "eclade gigantic" and "bornehumeur illimité."

The next day we sailed "en regate" to La Flotte. Here most of the boats were accommodated in the harbour, where we dried out in deep mud. In this delightful port we were entertained by the Mayor. After the day's racing we were told that if one wanted to register a protest he could only do so if he drank a bottle of Pineau with the Committee! An early start next morning to avoid being marooned on the mud all day, and a lovely sparkling sail to La Rochelle via the two buoys off the Chauvreau light. Here we were all gathered in the basin a flotte, and later entertained by the Yacht Club. The Mayor, previously a Minister of France, presented special prizes and, to our great surprise, we received a beautiful faience plate for being the only British boat.

A late start followed the early one, but we were expected to leave under sail to make a "spectacle", which the many coloured sails of the Gaffers, led by the President's boat, VAGABOND, tan sails and blue tops'l, certainly created.



"En regatte" again on a beautiful evening to Ile d'Aix and a homely reception in the village which, abandoned by the hordes of day trippers, was quite entrancingly lovely, complete with full moon. Another late start to Boyardville where there was no reception but time to visit and be visited. We lay alongside a 20ft.boat, gunter-rigged, which the owner had built himself; his crew were two very large dogs who always kept watch on the foredeck, slept ashore and were not allowed below; and his wife, a charming but rather sad girl who was paralysed from the waist down after a car accident, did most of the helming. Everywhere we went he piggy-backed her ashore, up and down vertical ladders, in and out of dinghies. We tried to entertain them but they were strict vegetarians; not even the dogs were allowed chocolate.

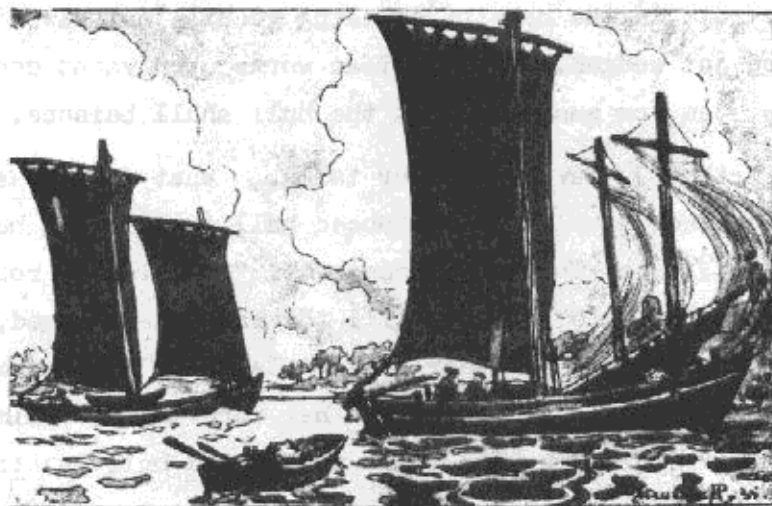
On August 7th. the whole flotilla entered the Charente river passing under the lifting bridge at Martrou and causing an immense tail-back on the M22. Again many boats did all this under sail, short-tacking until we got to the lock, where there was much cheering as we passed into the Port de Plaisance, and for us they broke into "God save the Queen". Here we were joined by the MUTIN and LA BELLE POULE from Brest, all taking part in the Festival Nautic de Rochefort.

The hospitality in this fascinating old port knew no bounds: hot croissants and buns were delivered for breakfast with the compliments of the Mayor, followed by a splendid Buffet lunch in the Corderie (Rope Walk), and in the evening the Prizegiving, with Admiral and the Mayor. This was a light-hearted affair even the dogs attended, and all received prizes. Even the President, with his sky-blue jackyard tops'l, was given a special Fair Play Cup because he had "la delicatesses d'arriver systematicment apres tout la monde."

After the Prizegiving there was much inter-boat visiting, and we were delighted to be asked by Ali, a "oiseau sauvage" from one of the special boats from Bordeaux, to come to supper. He had alighted on DAVINKA in the Brau lock on the first day, and had subsequently perched several times, helping with any jobs we were doing. The meal cooked by Ali was delicious and the boys looked after us beautifully, and carefully saw us back on board. Our last visitors left well after midnight.

The party broke up at Rochefort, some to go north to Douarnenez, others like ourselves to return home. DAVINKA made many friends, not least Bruno de Lucie who master-minded the "regattes touts à fait inorganisée", and she proudly carries a Cup for being first in her category and fourth overall; her crew can sport two smart Clan Campbell shirts, while at home there is a really beautiful half-model of JOLIE BRISE.

We will certainly join the flotilla next year and if any like-minded H.B.A. members would care to do the same, please let me know. I hope to have details by May 1987. How grateful we are to T.H.B. for involving us in this unforgettable ten days, a real bonus cruise.



SINAGOTS IN THE GULF OF MORBIHAN

BALANCED SHIPS

By

T. Harrison Butler, A.I.N.A.

STATICS

The correspondence about hull balance that has for some time been one of the interesting features of YACHTING MONTHLY has prompted me to sum up the principles that govern the subject, and to try to harmonize the opinions that have been so freely given. Although it is my duty to criticize the metacentric theory because it can be wrongly used, yet when combined with careful adjustment of the wedges of immersion and emersion it is at present all that we have to guide us. In spite of what the critics say, I still maintain that Dixon Kemp and Admiral Turner have shown us how to balance a hull.

The metacentric system (Admiral Turner), taken alone, fails because it can be foolishly manipulated. The wedge method (Dixon Kemp) takes no account of the underwater profile, which exerts a powerful influence upon balance. If the centres of the heeled and upright curves of areas coincide, which is the same thing as harmony of the wedges, and if the metacentric analysis is reasonably good, then the ship will balance. This opinion is supported by practical considerations. In addition to the known good behaviour of yachts that satisfy these postulates, there is much experience gained from model design and racing. If a model will not hold her course, especially when running before the wind, no matter how fast she may be she will not win races. Admiral Turner tells me that if the centres of upright and heeled curves of areas do not approximate to within the thickness of a pencil line the model will be unbalanced and may be a failure.

Over half a century ago Dixon Kemp emphasized the necessity for wedge balance, and it was appreciated long before his time. He himself did not push his ideas to their logical conclusion, and naval architects for the past fifty years or more have, at any rate in the case of cruising yachts, not given sufficient attention to the in and out wedges. In American works upon yacht designing I search in vain for any system for ensuring that the hull shall balance.

Before going further we may define our terms. What do we mean by "balance" and what does "imbalance" imply? A balanced hull is one that has a natural tendency to run straight, or as Turner expresses it, "to hold the road." In no strength of wind or any angle of heel, till the rail is immersed, does she show any strong tendency to luff up or bear away. Lee helm is uncommon and a dangerous fault. A balanced hull does not alter her fore and aft trim when inclined, and she runs sweetly before the wind. An unbalanced hull may trim by the head or stern when heeled, and in consequence her motions are uncomfortable, they conduce to fatigue and seasickness. A yacht which when hard pressed gripes up to

windward or runs off her helm to leeward is a dangerous craft, and accidents have been caused by these dangerous faults.

Many years ago, SATANITA, the fastest yacht for her length ever built, took charge at the start of a race on the Clyde, rammed VALKYRIE and sank her, with loss of life. METEOR, in the celebrated Warner squall, ran off her helm, entirely out of hand, and shipped a lot of water through her companions and skylights. I have no doubt that unbalanced North Sea trawlers have been lost in gales accompanied by heavy squalls from this cause. These, as a general rule, give no trouble, because they do not heel much and their imbalance does not manifest itself. But under extreme conditions such large forces would be generated that no helmsman could hold them. They would fly up into the wind, perhaps with terrible effect to the ship.

Finally, unbalanced yachts run badly and are apt to be pooped. Such craft have to heave-to, if they can. In YACHTING MONTHLY, Volume LXX, page 90, December, 1940, there is a drawing that might have been published to illustrate my point. A beamy, shovel-sterned 14 ton West Country smack running under a small jib. The legend reads: "We had to put two on the tiller, for the boat was heaving and tossing too much for one to hold her."

On the other hand, Mr. Crankshaw tells me that his NOREEN, an ex-12 metre racing yacht, ran down-Channel before half a gale under her inner staysail, and that a mere touch of the tiller was enough to steer her. She is a well balanced ship, as her analysis shows.

Let us take another example of how a well-balanced yacht runs, this time a very small one. The "Z" 4-tonners were built to my Zyklon design. It was published in YACHTING MONTHLY, Volume LXIII, page 256, July, 1937. I had a most enjoyable sail three years ago off Fowey in one of these craft, owned by Mr. Caswell, and I thank him for a most instructive experience. The yacht, which is only 19 feet on the load waterline, handled like a dinghy, and her balance was perfect. In the manner of an up-to-date model she sailed herself to windward, and it appeared that she would do so all day long. No human helmsman could have improved her performance. Off the wind, a touch with the finger on her tiller kept her on course. There was just enough wind to put her down to her rail at times. With her main alone she was light on the helm, and we then lowered her mainsail and put her to windward with staysail alone. The wind by this time had softened, and she took a little lee helm, but she could be put about in smooth water.

The running qualities of this yacht are superb. I have letters from two other owners. One tells me that he was out in the great 70-mile-an-hour gale of June, 1938. He had threshed his way as far as Eastbourne when a rapidly rising wind made further progress to windward impossible. The yacht by this time had two reefs down and no staysail. He put his helm up and began to run back eastward. The wind rapidly increased to a full gale, and on shore 70 miles an hour was regis-

tered. The "Z" 4-tonner for two hours kept up with a steam trawler. The letter goes on to say: "I have been a deep-sea sailor all my life, and except off Cape Horn I have never seen such wicked breaking seas; they were very steep, and not running true. I battened down everything, and, apart from a couple of seas that filled the cockpit, we did not part a rope or ship any further solid water. When we passed Dover the sea was breaking over the breakwater."

The yacht eventually brought up in Ramsgate Harbour, having averaged 7 knots from Beachy Head, two knots being due to tide.

There were in June, 1938, two gales of 70 miles an hour, one at the beginning and the other at the end of the month. Either in the same gale or in the other one, another owner of a "Z" (Professor Collingwood - ZENOCRATE) tried to make Dover from the shelter of Margate. He got within a mile of the Eastern Entrance when the rising gale beat him. Lowering the mainsail, he ran back under staysail and anchored off Deal. This was his first boat and her maiden cruise. He had never before done any sea sailing, and he was single-handed! He spoke in glowing terms of the behaviour of his ship, and appeared to have enjoyed the experience.

These two runs show what a very small balanced hull can do under the most severe conditions.

On the other hand, I read of the large Lowestoft trawler, QUARTETTE, griping so hard during her long ocean voyage that her crew were worn out at the helm.

I think that I have said enough to prove that hull balance is a desirable thing. I know that some prefer a yacht that pulls on her helm, but such must be few.

Before we go any further, let us make it quite clear that balance, in the sense in which we are using it, has in itself nothing to do with speed, with stability, or with the actual type of vessel.

Apart from the practice during the past eighty years or so in England, France and America, the creation of a balanced hull seems to be a natural quality of mankind. Going back to very early days, we find that the delightful models of ships found in the tomb of Tut-ankh-amen show a perfect harmony between fore and aft bodies; in fact, judging by the published photographs, they appear to be symmetrical.

Homer, in the Iliad, speaks of "well balanced ships;" Herodotus is surprised that the boats on the Euphrates are "round like a shield;" but he is obviously not a supporter of balance, for he says, "they neither make them broader at the stern, nor narrower at the prow."

Arab naval architecture strongly supports the harmonious hull. There is, or used to be, a beautiful model of a dhow in the Science Museum at South Kensington. She has a lovely underwater-body and her shape shows no sign of the double wedge tendency beloved of the builders of our large fishing craft.

All over the world it is the same. The Chinese junk, the Mediterranean vessels,

the Scandinavian, both ancient, as in the Viking ship, and modern, as in the Colin Archer creations, all are harmonious and symmetrical.

The older British ships had not the faults of the modern, for "Kappa" (Admiral Turner) has shown that VICTORY has a perfect metacentric analysis. But some later naval craft were so unbalanced that, even with sails set only on the foremast, they could not be kept out of the wind.

What are the causes of imbalance? Frankly, they are still to some extent mysterious; nor do we yet fully understand the forces that act upon a hull under sail. As Agur the son of Jakeh tells us in the Proverbs of Solomon: "There are three things that are too wonderful for me, yea four that I know not;" and one of them was "the way of a ship in the midst of the sea."

These difficulties and apparent inconsistencies are still with us. As an example, my late yacht, SANDOOK, has no vestige of balance in her lines. She has a sharp V-bow and a broad U-stern, a truly horrible combination, and yet she was a docile, well-behaved ship, and except with a really strong wind on her quarter, she was quite easy on the helm.

We can, however, with our present knowledge, assess the qualities that in most cases make for balance or imbalance. The fundamental doctrine is that the forebody shall match the after-body. One can have V-sections, U-sections or flat sections, but they must be of the same type at each end. If one likes the V-sections of the trawler's bow, by all means have them, but then the after end must be drastically modified and V-sections used here too. In a word, the ship must be a double-ender.

The same reasoning applies to the spoon bow and the skow. The Thames punt is an extreme skow, and she is perfectly balanced, and I have no doubt that those sailing punts that were seen at the end of the nineteenth century were docile craft. They had bilge boards and huge balance lugs. Perhaps one of our veteran readers will be able to give us some practical account of their behaviour.

It is fundamental to avoid the "double wedge." This distorted form is, I believe, the foundation of a good motor-boat design, but these boats run on an even keel and balance is unimportant. They have sharp V-sections forward and are perfectly flat aft. One has only to watch one of these craft in a seaway to realize the effect of this curious shape upon the action of the hull. They roll, twist, wriggle and turn. roll, twist, wriggle and turn, and so on, over and over again, till it makes one seasick to look at them. Motor craft, such as the Power boats, that plane, are in quite a different category, and are fine seaboats.

The double wedge is illustrated in Fig.1.

The symmetry of a design may be judged by taking the body-plan, drawing lines approximately tangential to the curves, bringing them to a focus, thus forming a fan. The foci ought to lie symmetrically on the body-plan. Fig.2 shows the

fan of a balanced hull; Fig.3 that of a Lowestoft drifter. This body-plan I have taken from a paper, by Admiral Turner, published in the Transactions of the Institute of Naval Architects, 1937.

FIG. I

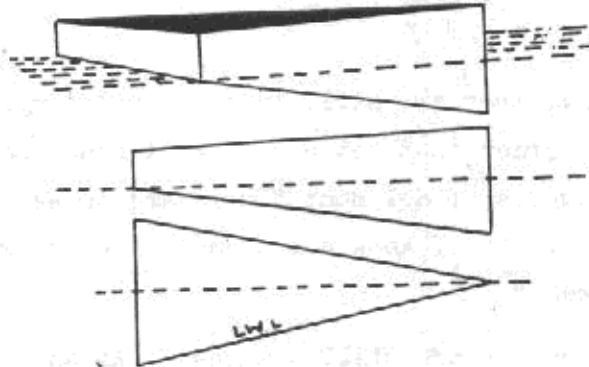


Fig. 1 shows the "double wedge," the worst feature in the design of a sailing craft, but the basis of the motor-boat. The top figure is a perspective drawing of the hull. The middle figure is the sheer plan or side elevation. The bottom figure is the full-breadth plan. It is obvious that if we heel this boat she immerses practically nothing at the bow, and much at the stern. In consequence she will depress her bow and raise her stern.

perfectly symmetrical, identical fore and aft. The same is almost true of the main diagonal.

Because of this symmetry it has been necessary to bring the rudder well forward, so that the pseudo-fin is more or less amidships. No curve of areas has been given, but probably the centres of the upright and heeled curves of areas are very close together, and the metacentric analysis will be good. I know that Mr. Jones does not favour the metacentric analysis, but his designs conform to the theory, as is indeed the case with all good hulls. The curves of the body-plan are symmetrical, being more or less concentric. They have fans whose centres are symmetrically disposed at infinity.

The reader will note that this word symmetry occurs constantly: it is the foundation of balance.

Most designs, my own included, have a load waterline that is fuller aft than forward. This is because not all the water displaced at the bow when the hull moves forward returns to the stern, so it has become customary to

An inspection of the load waterline will give further information. The after section of the curve ought not to be much fuller than the forward section. Anything approaching an extreme pear ought to be avoided.

Probably it would be even better to make both ends of the load waterline alike, as in that well-balanced design, GOLDEN FRIENDSHIP. This yacht, designed by J.F. d'E. Jones, of Birmingham, is not of the essentially pear form, as has been suggested. Measurement will show that the curve of the load waterline is perfectly symmetrical, identical fore and aft. The same is almost true of the main

FIG. II

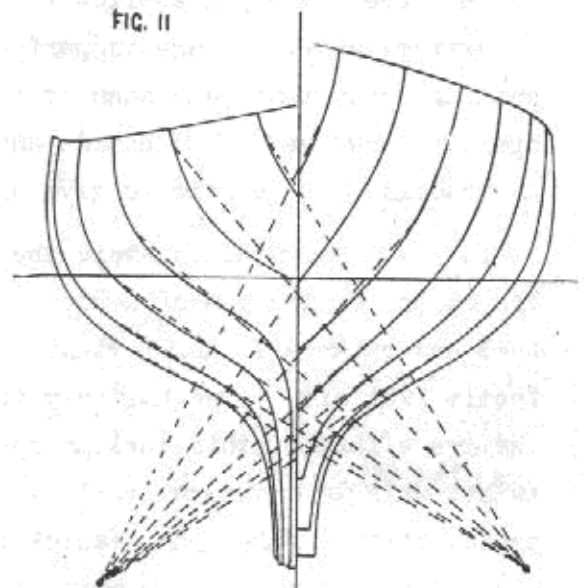


Fig. 2. The body-plan of Sinah, a canoe-sterned yacht with a perfect metacentric analysis, and coincidence of the centres of the curves of upright and heeled areas. She shows perfectly symmetrical fans. This yacht has been built and is now sailing in Swedish waters. She is perfectly balanced and a fine sea-boat.

make the curve of displacement fuller aft than forward. This follows the conceptions of Russel, developed by Colin Archer, that the curve of areas shall be a curve of versed sines forward and a cycloid aft. There is probably no advantage in this form, and it might be better to make the hull symmetrical.

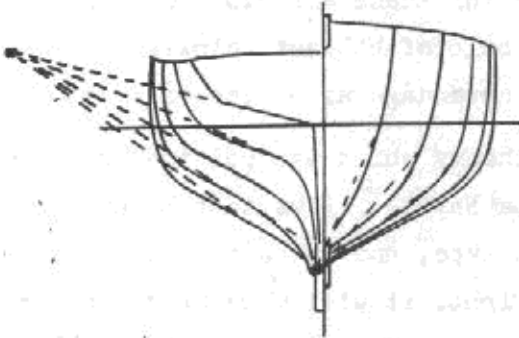


Fig. 3. The body-plan of a Lowestoft trawler. It is obvious that the design embodies the double wedge in an aggravated degree. The fans are asymmetrical, one being above the waterline to the left, and the other below the waterline, also to the left. This vessel if heeled to the rail would carry tremendous weather helm and would depress her bow.

In the conventional form the hull itself is out of balance metacentrically, and it is corrected by a reverse imbalance in the keel or fin.

Having designed a yacht with the characteristics that I have outlined in mind, that is with sections that form a symmetrical fan, and with a symmetrical load waterline and main diagonal, we must test it and find out whether it is actually balanced.

We must not allow any theory to influence the general type of the yacht. I myself think out the whole design before I put pen-

cil to paper, and am not influenced by designer's drawing-curves; in fact it is wise to make a small scale edition largely freehand. Then the drawing is made and finally the analysis.

First the curves of areas are corrected by filling out the bow and fining in the stern, or vice versa, as may be necessary. Then the metacentric analysis is made.

I said above that the result must be reasonably good, and I used the word intentionally. I think that were an analysis made by two equally competent men, the conclusions would not be exactly the same as regards the stern curve. It is very difficult to poise the after sections, especially when they have long tails, taken from a yacht with a lot of deadwood aft, and a very small difference in the thickness of the deadwood has an appreciable effect in the curve of moments. Then the "discrepancies" amidships are so small, and the areas here so large, that a measurement varying by the thickness of a pencil line will modify the moment curve. In a word, an exact analysis is difficult, nor, in my opinion, is it necessary. We naturally try to make the work accurate, but it does not matter much if the analysis shows that the after section of the curve of moments is a little larger than the forward curve. That is to say that if curve -c is slightly larger than curve -a, balance will not be affected. Theoretically, the yacht ought to carry lee helm, but it is very unlikely that she will act in this way. If the fault were in the reverse direction I should not pass it, for I should fear that weather helm would be present.

In the case of PAIDA, which was published in Y.M. for February, 1941, I pointed

out that an error of this kind was corrected by an alteration in the thickness of the deadwood. I cannot believe that a modification of this sort can have any effect upon the balance of the hull, but it has a considerable influence upon the analysis.

Metacentric analysis is perfectly satisfactory for a canoe hull, but the moment anything in the nature of a fin is added its thickness affects the analysis, unless the fin is central. A metal fin with a bulb of ballast below would have an even more pronounced effect, but can such an appendage alter the balance?

There is another anomaly in the metacentric theory which was pointed out to me a long time ago by Charles Chatwin, now in the Navy. If we take a perfectly balanced hull, preferably of the shallow draught type, and add a thin deal centre-board, then, if the metacentric theory is watertight, it will make no difference whatsoever whether we place the board in the bow or at the stern, or amidships. Perhaps this is true, but it seems wildly improbable. A test with a model would at once settle this question.

In a word, the metacentric method of analysis has definite limitations, but for practical purposes it is most useful. In pilotage a cross bearing taken from a small yacht is often not quite accurate, but it is close enough for all practical purposes.

A hull with a crossed shelf can be perfectly balanced metacentrically by attaching a block of wood to the deadwood aft, say a tapering half cylinder on each side. Or the same result can be achieved by making the deadwood aft very thick. I cannot think that a vessel with a crossed shelf and brutish actions at sea can be tamed by this method. It may be so: a trial with a model would settle the question at once.

I think that it is obvious that the metacentric analysis can be stultified by deliberate idiocies of this kind. The best thing is to abolish the deadwood aft and adopt the central fin if the nature and size of the yacht and other circumstances permit.

There is no doubt at all, if what models tell us can be transferred to the real thing, that the balanced shallow hull with a central fin runs far better than one with a long keel with plenty of "drag" aft and a long leading edge.

We now come to the question: is there any advantage in the metacentroid? Probably Turner is right, if we allow ourselves a reasonable tolerance as to what constitutes a metacentroid.

I think that, given an ordinary apparatus, with no expensive integrators, and using only a moderate amount of time, different designers would not place the metacentre in exactly the same spot. When we cube linear measurements it is difficult to obtain exactitude. If we admit this, then we cannot know whether a hull is exactly a metacentroid.



The whole metacentric analysis is inexact, but it is quite accurate enough to be indispensable.

What we want to know is : Is the shelf crossed? If so, away with the whole design and begin again from the beginning.

Then secondly : is curve -a not larger than curve -c. I use the minus signs because I am thinking of cruisers and not racing craft.

If these demands are satisfied and if the centres of upright and heeled centres of areas are close together, or better, coincide, then we have in my opinion done all that we can to balance our craft statically.

If the critics of these two systems combined have anything better to offer, let them produce it, and I for one will at once try it out.

It has been suggested that all that is necessary is to balance the wedges, but this is not enough, for, as I have said, the wedge method takes no account of the profile of the yacht, which is of vital importance.

Much has been written about the explanation of the system. I do not understand it, and probably I never shall, but I know that it works. Many of my recent balanced designs have been built, and as far as I know they all balance well.

I think that the conception of a hull with a crossed shelf as a cone which rolls along, the base going forward while the point remains stationary, gives me a slight inkling of what happens. I have not said that the cone rolls because this word has confused me in the past and will puzzle others. A hull rolls on its axis, but it can also roll along like a garden roller. If this useful implement were slightly conical much effort would be necessary to push it straight.

Finally, we must recollect that Turner does not contend that his system produces a balanced hull. All that he claims is that if a hull is balanced at any given angle of heel it will, if metacentrically balanced, also balance at all angles of heel.

So far I have dealt only with the static aspect of the question. Now I shall say something about the dynamic side. Turner is emphatic that there is no dynamic aspect, but I think that few will agree with him.

#### DYNAMICS

Admiral Turner thinks that the balance of a hull under sail begins and ends with statics, that the conditions affecting balance are the same whether the vessel is at anchor or under sail. He says that the forces generated by wave formation, by suction, and by eddy formations are so small in proportion to the mass of the ship that they cannot exert any influence. I have not the mathematical knowledge to oppose his views from the theoretical side, but I propose to bring forward some facts that render them improbable, and to mention one very important factor that

Turner does not discuss. This is speed.

For a long time it has been assumed that a hull fitted with sails is like a weathercock. It rotates round a mystic centre called the centre of lateral resistance, and the position it assumes depends upon the relation between this geometric centre and another equally vague point, the centre of effort of the sail plan. It is quite easy to discover these geometric centres, and when the yacht is at rest they are what they pretend to be, but the moment motion begins these centres alter their position, and the greater the speed of the vessel the less value they possess.

This can be easily demonstrated.

Take any ordinary cruising yacht which will carry weather helm, and when left alone will come up to windward. Hoist the jib or jib and staysail. What will she do? At first she will act as a pure weathercock; she will pay off to leeward. As she gathers way she will gradually come up to windward and settle upon a definite course, which varies according to the type of hull. Some of the smarter semi-balanced yachts will lie quite high up; others, like my SANDOOK, will sail on a reach. SANDOOK would do this continuously.

I am not quite certain what a metacentric yacht does under these circumstances. EDITH ROSE, on her trial trip, sailed herself to windward with main and staysail. The addition of her large jib did not alter her balance. Under her two headsails she did not pay off or come up, but stayed put.

An eminent designer tells me that one of his designs which has been built to many times, produces a hull which acts exactly like a motorboat; she just sails on whatever course she is started on. On the other hand, Robert Clark's design, MYSTERY, acted in a different fashion. With two headsails she came up to windward, put herself about, and hove-to.

It is obvious that when a yacht is underway forces are generated that are not present at rest, and that they increase with the speed of the ship. In other words, a condition originally static has become dynamic. We are dealing with the difficult problems of hydro-dynamics.

But even on the static side there are difficulties, paradoxes. Mr. Williamson allowed me to experiment with his MINION, built to my Cyclone II designs (see Cruising Hints, fourth edition, by Francis Cooke). I found that in a strong wind in Southampton Water this yacht would heave-to with her headsails alone, either the jib or the staysail being aback, or with the staysail alone with its clew brought to the mast.

Mr. McMullen, in 'Down Channel', on page 67, has a vivid drawing of his ORION hove-to under jib and foresail, and he describes how he hove her to in this way first on one tack and then on the other. The Americans heave their schooners to under foresail alone. POSTSCRIPT, a little 20 ft. cutter, made a voyage from

New York to Florida and back, and naturally met with some bad weather. She hove-to with her staysail alone.

Here we have vessels virtually at rest remaining hove-to with the centre of effort of the sail plan well forward of the centre of lateral resistance and yet not paying off. Probably they forereach fast enough to generate forces that neutralize the weathercock effect.

There are other facts that make it almost certain that dynamics are an important factor in hull balance. If the problem was purely statical, then a hull that is balanced at any given angle of heel ought to remain balanced if the speed increases. This is not often true.

My VINDILIS is a semi-balanced yacht. She will sail herself to windward unattended, but off the wind she carries weather helm. If heeled to her covering board say at 25 degrees heel, her sail plan can be so adjusted that she will sail to windward with no-one at the helm. Now let her bear away. Her angle of heel diminishes, and she ought not to carry any helm, but she begins to take weather helm, and the stronger the wind the more she pulls. Probably at an angle of 15 degrees her metacentric analysis is good, and she ought to balance whether on a wind or off the wind, but this is not the case. Why?

It is obvious that another force has been introduced, and this can only be generated by the increased speed off the wind. In my humble opinion the increase in weather helm is due to wave formation. In the February, 1941, number of YACHTING MONTHLY, page 275, Dr. Rusack tells us that his small yacht is a joy to sail and is easy on her helm.

This yacht was built by the late Mr. Norford Suffling, and was then the SEAGULL. Her design was published in YACHTING MONTHLY, Vol. XII, page 464. She was 20ft. LOA, 18ft. LWL., 7ft. beam, and draught 3.75ft. Her displacement is 3.2 tons. One would expect that a chubby short-ended yacht of this weight would be rather a brute, and would gripe badly, and the more so as she obviously has a crossed-shelf, and must go by the head when heeled. Her design was inspired by Mr. Hanson's WATER-BEEBLE. On one occasion I sailed her on the Yare in a very strong wind. Under full sail I tried to put her rail under but failed to do so. On a broad reach far from taking weather helm she balanced perfectly, and rather gave the idea that if she had a little more wind she would run off. This performance was so contrary to theory that I went ashore and got the well-known Broads designer, Mr. Woods, her builder, to sail her up and down while I watched her. When on a reach she produced a symmetrical wave formation. Seen from the windward side a huge crest piled up at her bow and stern, leaving a deep trough amidships, almost exposing her keel. She balanced exactly on these two wave summits and took no helm at all. The yacht is now called FLEETWING.

I subsequently spaced out the sections to a LWL of 19ft. and produced Cyclone.

A large number of Cyclones are afloat, and an owner in New Zealand tells me that he sits in the cabin of his and watches the tiller wagging astern while the yacht makes a good course to windward. Ultimately Cyclone became Zyklon, the fully fledged metacentric yacht.

I think that I have given good proof that the problem of balance is not wholly static, but that speed develops forces that have a profound influence upon behaviour. They are so powerful that, under favourable conditions, a yacht that is statically unbalanced may be dynamically balanced, and I think may occasionally render a yacht statically balanced dynamically unbalanced.

This remark is due to the fact that I know of one small yacht said to be perfectly balanced, both metacentrically and by wedges, which her owner tells me is a perfect little pig at sea.

The fact is that yacht designing is not yet an exact science.

The metacentric theory is all that we have to guide us; it takes us a very long way, but not all the way.

It is quite possible, indeed probable, that a yacht that is balanced theoretically, will generate symmetrical wave formations, both to windward and leeward, and that their influence, which I think must be great, will neutralize each other.

When we come to speak of suction and eddy formations, we are on unknown ground. We know that a fast driven motor vessel develops a strong suction aft which draws down the stern, and that to prevent this action motor craft are built with flat sterns. Sailing ships also tend under certain circumstances to draw down aft when driven hard. I know of one yacht, designed by a well-known naval architect, which almost always puts her counter under when running hard. It seems highly probable that suction of this type may be unequal when the hull is heeled and may tend to divert the yacht from a straight course.

These forces could easily be investigated by pressure gauges, in the same way that pressures on the sails have been examined. Pressure effects of this sort are more likely to develop under the run, and this is one reason why it is wise drastically to cut away the deadwood aft, so that water is not penned up in the run on the lee side.

Undue wave formation can be avoided by making the lines of the yacht as easy as possible. This means cutting down beam as far as we can, with a due regard to stability and accommodation, and making the midship section approximate to the wine-glass rather than the tea-cup. A long canoe-like hull with a central fin will tend to reduce suction and eddy formation, and, as I have said above, gives an ideal hull balance.

We know little about the effect of eddy-making upon hull balance, but A. Hawkins Clark, in his small book, 'Yacht Efficiency', states that in the case of

his yacht GALEKA, it accounted for 10 per cent of the total resistance. He quotes experiments by Mr. Baker in the tank at the National Physical Laboratory, which led him to conclude that to avoid serious eddy resistance the angle of the waterlines must not exceed 18 degrees. Clark points out that in most yachts the angle aft is 40 degrees or over, and he very properly states that easy buttock lines can never justify blunt waterlines.

All these statements are crystallized by my demand that has been fiercely criticized, in fact, almost ridiculed, in this journal, that the waterline must be such that it can be drawn with an ordinary spline held down by not more than five weights.

If eddy formation makes such a serious addition to total resistance, it is obvious that when the vessel is heeled it can be unequal to windward and leeward, and may tend to divert the vessel from the straight path of virtue. Therefore, let us cut it down as much as we can by keeping our waterlines as fine as we can, and abolishing appendages as far as possible.

I have received the following letter from my friend, Dr. T. Nelson, F.R.C.P.

"Alas, I have become a 'veteran reader.'

"In the October Y.M. you ask for experiences in sailing a Thames punt. As a boy of from 12 to 16 I had many opportunities of sailing one of Turk's beautiful designs, exactly as the model in the Science Museum. At that period I used to sail anything I could get hold of on the Thames - some modern dinghies for those days and some never meant to sail at all. I have no hesitation in saying that the punt was the sweetest sailing boat of them all. Indeed, I am sure I made a nuisance of myself to her owner in my importunate demands to sail her.

"She carried a very faint weather helm that I am sure she was intended to do; but she was, for a long straight boat very 'easy' on the helm. She also pointed higher to windward than any but the 'raters' of those days, and was appreciably faster than the popular sailing dinghies."

This experience proves that the perfectly balanced punt is a balanced vessel, and is an additional proof that a hull balanced theoretically is also balanced in actual practice. The punt being exactly alike bow and stern must have an ideal theoretical balance. Any tendency towards weather or lee helm would be due to the position of her lee-boards, for her twin centreboards are really lee-boards. The exact effect of the position of a centreboard upon a balanced hull needs practical investigation, and this could be carried out with models.

To sum up. To obtain a balanced hull we must :-

- (1) So design the hull that the centres of the heeled and upright curves of areas coincide.
- (2) Get the metacentric analysis reasonably accurate.

- (3) Make the whole design as symmetrical as we can by placing the keel appendage or fin as central as is convenient.
- (4) Get as much length into the design as possible, avoid eddy formation, and obtain a wave pattern that is symmetrical.
- (5) Let the mid-section approximate to the wine-glass rather than the tea-cup.

More than this we cannot do till our knowledge is greater and our experimental data more extensive.

It is quite obvious that the designer of a small cabin yacht is severely handicapped, for he needs beam for stability and the tea-cup for habitation. The dayboat is untrammelled, and there is much latitude in the design of larger yachts.

I am well aware that much of what I have written in this article has appeared before both in YACHTING MONTHLY and in other journals, but I have tried to present my ideas as they now stand in the light of further experience.

Y.M. October/November 1941.

#### C A T C H I N G   U P   W I T H   ' C O R A '

The following account of her first attempt to reach Las Palmas from Gibraltar towards the end of 1985 was not received until March 1986 and there was insufficient space for its inclusion in the Summer 1986 Newsletter. Unfortunately the pages covering the voyage out from England were not received.

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"We spent nine days in Gib, buying equipment and stores and generally preparing the boat. The main reason, however, for the long stay there was that we were waiting for the wind to change. We had been warned that the next 700 miles passage to Las Palmas could be difficult and since I had not gained the sailing experience I had hoped for we decided to take on a crew member for that passage. Despite the smallness of the boat we had no shortage of volunteers. We picked a jovial Englishman called Robert. On our last day in Gib we finally tracked down Bruce, Sandy and Keith. Unfortunately, we missed seeing Judy. Also, we bumped into David Mellonie of Small Craft Deliveries, Woodbridge, Suffolk who had just brought out a tug from England.

"We crossed the bay to Algeciras to join our French friends aboard VIKING and, having joined in a barbecue organized by several French yachts, a number of us left at 2.00 a.m., excited to be heading into the Atlantic. We had a great romp through the Gibraltar Straits, overtaking a couple of yachts a good deal larger than CORA. We covered nearly a hundred miles on the first day and Gareth was able to put his newly acquired skill in celestial navigation to use and managed to get a fairly good fix. During the next 2½ days the wind died completely, leaving us becalmed and with an overcast sky making it impossible to obtain any further sights. Not knowing how long this would continue we decided to head for Casablanca under power. On sighting land and a German ship at anchor we enquired as to our position on the V.H.F. We were told that we were off Kenitra and were given instructions on how to cross the bar. This we did and proceeded up a fast-flowing muddy river to Kenitra. There being no facilities for small boats whatsoever we tied up alongside the German ship we had spoken at sea, and received excellent hospitality from them in various ways. We spent several days in Kenitra waiting for the wind to change and in that time discovered much about Moroccan life, especially how to placate officialdom with gifts of wine. As we were to discover here and in other Moroccan towns there was a distinct division between Western-style culture and the traditional Muslim culture. Though the Muslim areas were by far the most

interesting, obtaining wine was difficult and expensive. At last, as the wind came round, we moved down the river to Mehdia at the mouth but discovered that it was impossible to leave through the surf. We tied up to a Hungarian ship for three days. Here the hospitality was magnificent. The crew seemed like one big family and we were treated as one of them. We were wined and dined and all the facilities of the ship were placed at our disposal.

Eventually, leaving the river, we made our way down the coast under engine. About 15 miles off Casablanca we ran into some fishing nets which got wrapped around the propeller. It didn't take long for a fishing boat to arrive on the scene and two of its crew dived down and cut most of the net away for which we had to pay. Shortly afterwards we spotted VIKING heading straight for the nets but managed to warn them of the danger ahead. The following morning we reached Casablanca and Robert dived into the filthy harbour to clear the remainder of the net. The official procedures here were even more difficult and time-consuming than in Kenitra but we did have time to enjoy the fascinating old back streets and markets of Casablanca. Despite wanting to stay on in Casablanca the wind became favourable and we still had time to reach Barbados for Christmas, and meet Denise who was to join us for a holiday.

We had a rare enjoyable sail for several hours with all sail set and our wind vane steering us comfortably towards the Canaries. This, however, did not last long and as the wind came round to the East it increased in force gradually, and we reduced sail. As the seas became larger we were eventually forced to run down wind, further out into the Atlantic. The wind continued to change direction until we were heading back the way we had come, with a Force 8 gale driving us at speed with only the staysail set. As the wind increased we reefed the staysail down to only a few square feet but we still ran fast before the wind which by now was a severe gale. After two days the wind veered into the west and increased even further in strength, forcing us to hand our tiny scrap of sail. Gareth became worried that, with this strength of wind and despite being a good distance from the Moroccan coast, it would not take long for us to be driven on to it. With no suitable ports of refuge we were in a dangerous situation. Securing everything down we decided to lie a-hull as the wind increased further to Force 12 (hurricane force). The sea was terrifying to behold, with the mountainous waves and breaking crests making life below very uncomfortable. The noise was particularly frightening, such as the screaming of the wind through the rigging and the express train-like noises of approaching breaking waves. All three of us lay in our bunks just waiting for the next wave to smash into the side of the hull and tumble over the coach-roof and dinghy.

For three days I had not been able to do any cooking at all, or even boil a kettle, so we were surviving on biscuits, tangerines and water. We all went through stages of feeling queasy but none of us was actually sick. We radioed to all ships for a weather forecast but were answered only by a larger 80 ton Swedish yacht a few miles away. As conditions worsened they offered to stand by in case we needed help. This we gratefully accepted and Gareth fixed a white flare so that they could locate our position. During this time the huge waves smashed our self-steering gear, broke our tiller (fortunately we had two spares), and somehow carried away the log-line. By the Swedish yacht, ANITA, reached us the storm had moderated but they stayed within sight, allowing us all to get some badly needed sleep. At 3.00 a.m. they called us on the V.H.F. to say that they had sighted land and that it was time to move. After 31 hours of lying a-hull we realised that we had no option but to head back to Gibraltar with a Force 8 on the beam. After motoring all day we reached the Straits and made for Tangiers with a following wind and sea. Robert and I managed to do some fishing and in the space of 10 minutes caught three nice tuna of about 5 lbs. each. In the Straits the seas were steep and the cockpit filled several times, fortunately emptying quickly through the drains. During the last few days I had become so frightened and tired that I hallucinated on several occasions. Entering Tangiers after 5½ unpleasant days at sea was an unbelievable relief to all of us.

'We spent 3 days in Tangiers which, though we felt tired, was enjoyable. However we were eventually pleased to get away from the hassles which are part of everyday life in Morocco. Even our attempt to reach Gibraltar was curtailed by easterly gales which forced us into Tarifa after a cold, wet and uncomfortable 8 hours. We have been lying in Tarifa harbour, a mere 15 miles from Gib for 4 days, being lashed by a severe gale which has already chafed through several of our lines. There are no facilities here for yachts and we have had to pay a local woman to wash our clothes which are wet and dirty. At the moment all we are looking forward to is sailing to Gib where we can sort the boat out and have a hot shower.

'By the time we have carried out repairs it will leave too little time to cross the Atlantic and explore the Caribbean this season so we are a bit unsure of our future plans. In the meantime we are joining the ex.Woodbridgians in Gibraltar and plan to earn some money there. Christmas in Gib is a poor substitute for Barbados but at least we have each other and CORA."

Christine and Gareth Davies.

Conscious of the somewhat disconsolate ending to this account of a courageous effort, in which her self-draining cockpit played a conspicuous part, I am pleased to report that, after effecting repairs in Gibraltar and making improvements chiefly concerned with restricting the ingress of water from above deck, followed by a short period exploring the Algarves, CORA and her intrepid crew reached Grand Canary and may, even now, be on passage to Barbados competing in the Yachting World Atlantic Race for Cruising Yachts, by way of interest! - Ed.

NEXT ADDRESS: ARC Race, Yacht CORA, Christine and Gareth Davies, Barbados Port Authority, University Row, Bridgetown, Barbados.

#### AMENDMENTS TO 1986 LIST OF MEMBERS

##### Omission

Mike and Jane Wrightson, 29 Pitch and Pay Park, Sneyd Park, Bristol BS9 1NL	MAT ALI	Khamseen	Bristol Channel
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##### Change of address

Frank Spooner: 5 Talofa Avenue, Cowes, Victoria, 3922, Australia.

##### Telephone numbers

John & Mike Atwell: Bursledon (042 121) 3336.

Peter Gregson: Frogmore (054 853) 217/687.

#### THANKS AND A P.L.W.A.

Once again I am about to rush off to the printers. If only I could discipline myself to work gently over a longer period instead of cramming several months ruminating into just a few weeks of intensive activity. This time I did manage to get the main feature typed up well in advance but that was accidental!

Ruth's health remains stable although, unfortunately, the treatment of her last illness has left her with asthmatic side effects. We were both extremely touched, and honoured, to receive that wonderful card from the Laying-up Supper, signed by so many, and depicting the Royal Cruising Club Centenary Meet on the Beaulieu River in 1980. Thanks to you all - it will be treasured always.

Now, how about some subscriptions please: we can't run the Newsletter on fresh air!  
Good Sailing, Peter.





