

Tomahawk Owners Association Bulletin

November 2002

Editorial

Michael Juer
Warpath

Well it seems that Xmas is upon us and most of us have either taken our boats out or are planning it. Warpath is still in the water but only just though I hope to steal another sail yet. The weather does not look very cooperative!

Just at the end of September in Cherbourg I distinctly recall sitting in warm sunshine in the cockpit thinking to myself how little maintenance I had this year.

Quite why the boat has fallen into such a state of disrepair in the last 4 weeks I don't know but the maintenance list seems huge now I have written it out! I am sure this is not an experience that only I have had.

Well I have completed my first season as a TOA member without attending a rally. Shame on me! However I have met with a quite a few Tomahawk owners over the season holding impromptu rallies of our own. Happy Xmas in particular to Red Warrior and Moccasin.

The Round the Island Race again featured large in my year. Although our time was respectable we were more than 15 minutes late over the start line, (skippers blushes excused). Not long later I saw Crystal (Bill Garrod) retiring with rudder damage and I think that Bumble B of Gosport was the first Tomahawk over the line – well done.

This bulletin sees my wife put pen to paper, (or rather finger to keyboard) with an article on a weekend sailing that heralded in the October gales. The gales seem to have been with us ever since! We also have various contributions from other members for which I thank them. It would be nice to see more articles from wives/partners – a view on this sailing lark from the other side so to speak!

We have a new section in this Bulletin – extracts from the Marine Accident Investigation Board, Safety Digest courtesy of Ian Fairgrieve, *Moonmaiden*. Ian is a

director of a dredging company and has amongst other things, responsibility for Health & Safety - thank you Ian. Some valuable lessons here and we will publish some more in the next bulletin.

You will see later in this Bulletin we have a Web site now. I will be putting bulletins on the web site in due course, (including hopefully back numbers) and you will be able to download them if you wish to. The site has a number of great features including discussion threads, a forum for member's etc. The site will be as good as the

contribution we make – please visit it regularly – it should be your home page! I include here a list of the articles / letters we have published, on Tomahawk maintenance/

problems/modifications etc.

Rudder problems Bulletins 1,3 and 6 – involving rudders parting from stocks and tangs corroding
Replacing Forehatch Bulletin 2
Problems with Stemhead fittings Bulletin 6

Mold for Main hatch garage – Bulletin 6.

Engine replacement Bulletin 7

I also know members who have had **osmosis and epoxy treatments**, and **wobbly keels**.

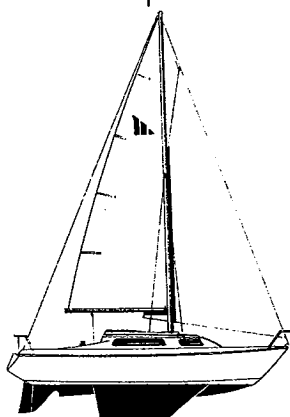
It is planned also to put this on the web site as it will undoubtedly prove to be of value to all of us at some time. If you have some particular piece of work you recently completed where you developed something or learnt something that could be of use to other owners then let us know and we can build a valuable resource for the future.

Finally why not make your yearly membership payment by standing order – form enclosed

The Secretary Scribbles.

The good news is that we now have a new working web site

www.tomahawk25.co.uk



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This has kindly been produced by our member Mark Lilley, here we have the ideal of communicating our news, buying and selling odds and ends, listing suppliers who from members experience have been found satisfactory, and when the time arrives offering Tomahawks for sale. There are many ways we can make this facility a very real advantage to members even Internationally.

May I ask you please to make full use of our web-page, we should all do our best to keep it up to date and by doing so it will be of more use to us.

We have had some very good Rallies during the Season, if you have not joined one yet, when you do I am sure you will enjoy the experience, if your area is slow to hold one, do please contact me I will give all the help I can to help you to increase the enjoyment of owning the best yacht of 26ft, well nearly!

During the year our membership has held steady in the mid forties, which for an Association of one design of 200+ yachts which is considered by those "in the know" to be good, however it would be good to have even more, so do spread the news when you can.

The number of members of our Association stays much the same, we loose some members mainly because they have sold their Tomahawks, and we gain new members because owners are still finding their way to us. The owners may leave but often the yachts continue under their new owners, and sometimes under a new name! I find that the SSR number is useful here as it stays the same with the yacht.

So what of the future? We are working hard to produce a new constitution, which will be sent to you for your approval or otherwise, before the next AGM. When this is ratified we can then apply to be affiliated to the RYA, and the immediate advantage of this would be to be listed on their page of Class Associations, and so make ourselves more conspicuous'.

During the past twelve months we have welcomed the following new members, Richard Rochfort "Chimo", (we now have two Chimo's), John Clough "Apache", Mark

Lilley "Pintail", Gordon Knight "Ceilidh", Dr Brian Gurry "Amy", Roger Mander "Varuna 2", Keith Barker "Wordrum", Robert Haines "Many Moons", Dr Gordon Keyte "Nokomis of Hamble", and Ian Fairgrieve "Moonmaiden".

There have been quite a few Rallies this year, mainly in the Solent area and one, so far, in the North West, I hope that you will be able to read about these elsewhere in the Bulletin. The Rallies always prove to be good fun and interesting. We have picked up some good tips from looking at other Tomahawks, you can always learn. I believe that Peter Llewellyn is about to make a garage for his hatch, the design and plug have been very carefully made by James Barnes.

I do hope that eventually we can persuade more areas to arrange Tomahawk Rallies, this does become easier as our membership grows.

During October we were approached by Sailing Today to find a Tomahawk for a used boat test, our Commodore Peter Llewellyn kindly allowed Alison Molyneaux to use his Tomahawk "Incarnoon". The test was carried out in brisk conditions and Peter is sure that all will be of good report, and there should be some very interesting photographs. The article will be published next Spring and I for one am very much looking forward to reading it. Our web site has arrived just in time!

Lastly all the very best wishes to you all for Christmas and 2003, David

And the children slept all the way!

In an attempt to steal yet another late summer weekend away on our Tomahawk, Warpath, we arranged to meet Moccasin and her crew for a last night's enjoyment in October this year. The journey across to Cowes on the Saturday proved exciting, with a Force 5/ 6 but clear, sunlight skies and not a drop of rain. We were in Cowes by 5.00 enjoying the late afternoon sunlight and the company of friends with our children blissfully pulling up yet another crab from the Solent waters.

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What a life! Supper in Cowes followed by drinks in the cosy confines of Warpath's main cabin produced a good nights sleep despite the relative cold. Just before we went to sleep my husband warned me that rain and wind were forecast for the following day and we might have to make a speedy getaway in the morning.

Blip, blip. Incoming text to the mobile. At 8.30 Michael reported that indeed the forecast warned a Force 7 climbing to 8, perhaps 9, later in the day. We'd better get moving. He explained that we have the tide setting East with us, and that the wind from the south/southeast should produce a reach of some sort allowing us to get ahead and into Portsmouth before the worst of the wind and rain came through.

Looking up at clear, blue skies in the chilly morning light I lamented the not yet fully cooked bacon and eggs and started stowing things away.

As a family we started sailing when my daughter 6 months my son only 15 months older. Armed with optimism, enthusiasm and a bagful of nappies, we ventured forth on our Tomahawk to discover Yarmouth, Bembridge and lots of warm summer weekends doing very little tucked into Island Harbour Marina.

2 Mediterranean charters, our travels around the Solent and two successful Round the Island's had increased our confidence. I have learnt, over the years, not to become too alarmed at the bounce and ride delivered by the Tomahawk facing wind and tide, and the children have developed a useful ability to instantly fall asleep under extreme conditions. I hasten to add that my husband is more experienced and always remains calm, of course.

And so there we were pushing our nose out of Cowes, looking out at what seemed a strangely black and flat sea, with two expensive looking racing yachts with sails lying amazingly flat against the water. Looks quite windy out there, I thought, and

settled down in the cockpit with my son tucked under two waterproofs under my arm.

An update into my husband's mobile a half hour later read "Force 7, increasing to 8, perhaps 9 "imminent". The weather was moving through quicker than originally expected. He decided against passing this information on at this point of no return, and simply took on a look of grim determination. The wind of course also proved to have more East than South in it and so we were now effectively beating into rising seas.

Mercifully Amy fell asleep holed up between in the pilot berth and Henry slept in the cockpit with a life line on him! Rain and wind grew on. Powered by a scrap of genoa and our engine, Warpath faced the worst of the waves and soldiered forwards. Everything under control then, I thought, sitting in the cockpit where I remain relatively sick free, with my son Henry, also asleep, behind the spray hood.

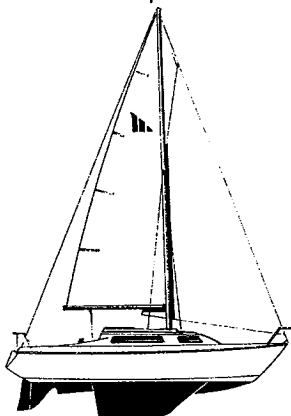
I took the helm and for a while there was rather enjoying myself. The GPS read 1 hr 45 min to Gillkicker, my husband made some tea and I gained in pride

and ego as I considered my foul weather sailing abilities. Well, we're not doing too badly then, I thought to myself, be in Portsmouth in no time.

Then the engine alarm went off, accompanied by some scary light flashing! I looked up to port and immediately saw the growing vision of another of those big, racing yachts coming towards us at an incredible pace...on a collision course,aarrgh Michael now what?

A couple of seconds later and they're rounding a racing bouy. Phew.

Hurried examination of the engine revealed nothing. We set the throttle at a gentle but progressive pace and steeled ourselves against the remainder of the journey, this time more worried at the possibilities of engine failure and the now fierce weather conditions – still getting worse.



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By the time we got to Gillkicker, Michael pointed out that we were too close for comfort to a lee shore facing a very strong wind with stronger gusts. The engine & small sail area was almost doing no more than hold us in position against the wind and waves which are always worse at this point than the surrounding sea. For a little while we wondered whether we might end up in a spot of bother but we tracked every inch of progress and finally got by.

Never before has the harbour seemed so far away as I looked out at the breakers crashing against the wall and spraying up high. In the other direction, out to sea, there were very few boats left on the water and the last were working hard to get to shelter. I didn't see anyone quite as small as us – or at least that's how it felt at the time!

By the time we got into the harbour, and then continued down with a small piece of genoa to our boatyard, the wind was absolutely howling and we were roaring along. Michael, when pressed, admits to a 7 gusting to 8.

I thought it was all over although Michael said the mooring would prove difficult. In fact mooring facing into the wind proved very difficult and taught us another small lesson. It was blindingly hard and produced two exhausted parents concerned about getting the boat tied up at all. With the wind whipping the bows off the mooring the instant we got to it one only had nanoseconds to grab the line and get it aboard. After lunch and a well deserved drink, (!), our fantastic boat yard took us ashore in their launch as a trip in the tender by then would be far too risky.

As we walked down the pontoon I held tight onto my son's hand and braced myself against the wind. Later we were told that others at the boatyard needed help mooring, and some advice from an expert sailor friend revealed that we could have reversed onto our swinging mooring to avoid the trouble we had facing into wind. The boat would be naturally "cocked" in the wind and the pick up could be relatively easy – we shall try this next year perhaps?

Sobered by our experience, I face the thought of maintenance to the boat during the winter with the prospect of being tucked up safely at home. By spring my optimism will be back and I'll have forgotten all about our Autumnal excitement. Which is why I've written it all down!

Melanie Juer
Warpath

Irish Sea Owners Rally 27/28 July 2002

For the second year running we decided to hold our rally at Victoria Dock Marina at Caernarfon on the Menai Straits although, for various reasons, only 3 boats made it this year. We were lucky enough to have good weather (in view of what most of the rest of the "summer" was like!), sunshine and a pleasant Force 3 South-Westerly breeze which gave "Iola", crewed by myself and David and Alison Collinson, an enjoyable beat from Beaumaris up to the Menai suspension bridge at the start of the Swellies arriving at 12 noon just in time for High Water slack in the Swellies (which is about 1-1/2 hours before local High Water). As it happened our Rally was coinciding with the annual " Round the Island" race (Anglesey that is!) which is held at the start of the Menai Straits Regatta fortnight and the Swellies were rather like the M1 on a busy morning as dozens of yachts of all sizes tacked through the narrow, rock obstructed area. We chickened out, furled the genoa and motor-sailed through and carried on to Caernarfon arriving at 1330.

The others who made it were :-
CHIMO – Paul and Jen Mountford
MALIBU – Dave Meacher
Mike and Fran Warr had planned to attend in "*Macaw*" but, unfortunately, Fran was laid low by a bug at the last minute.

Later in the afternoon Paul and Karen Jones and there 3 children came over by road, Paul had hoped to have "*Windlass*" ready in time for the rally but had discovered the dreaded Tomahawk "rudder disease" when he was about to launch.

In the evening we had a very pleasant meal at the "Black Buoy" pub in the town and

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finished off the evening in the bar of the Royal Welsh Yacht Club where, once again, we were given a very warm welcome.

Tide times on Sunday gave us a decent lie in (very civilised!) and "Iola", "Chimo" and "Malibu" left the Marina together at 1100 as soon as the sill was lowered. We enjoyed a relaxed sail in company (couldn't really call it a race!) under genoas only back to the Swellies with "Chimo" leading the way in the rising Southwesterly wind. By the time we were nearing Beaumaris the wind had strengthened to the top end of a 5 and Dave Meacher decided to put in to Port Penrhyn rather than carry on to his home port of Cemaes Bay on the North coast of Anglesey as it can be very nasty on that coast with wind over tide conditions. Later on the wind appeared to moderate so Dave set off again, was becalmed at Puffin Island, then laid over by 28knot gusts (which deposited sausage and eggs in his lap!) and had a steady 30 knots nearly on the nose by the time he was past Point Lynas by which time "Malibu" was double reefed with a scrap of jib and going like a train (the joys of single-handed sailing!)

Thanks to the skippers and crews who made it, by sea and land, and hope we can do it again next season.

Geoff Hilditch
IOLA

A TALE OF THREE ENGINES

No, not another story about Thomas the Tank Engine, just my problems when I came to re-engine my Tomahawk.

Crystal, like many Tomahawks, when built in 1972 was sold for home completion and the first owner put in a Volvo MD1 engine made in 1968, so even when the boat was new she had a secondhand engine. When I bought Crystal in 1993 the engine was already 25 years old and beginning to show her age. However, although not the fastest, we carried on with her until she finally died in 1999.

Talking to Mike Juer, our editor, he informed me he had a Volvo 2002 in his boat, which

gave a good performance. I was able to obtain a secondhand 2002 which had been used in the Volvo test laboratory for all of its life, and although well used had never been in a boat. The engine was totally re-built, crankshaft re-ground, new bearings, new pistons etc. and the engine ran like clockwork in the garage! Now for the big day. The boat was craned out and the old engine disconnected from the prop shaft and engine bearers and lifted out. The replacement engine was lifted in. Unfortunately it would not go as it was too wide for the engine bearers, these were removed and the engine dropped in just between the sides of the engine bay and rested on the floor of the boat.

Catastrophe!!! With the new engine resting on the floor of the boat the output from the gearbox was 2" above the prop shaft. What to do? Either we had to lower the engine through the bottom of the boat or raise the prop shaft. The latter was the only option. Out came the prop shaft. Out came the cutlass bearing and a large hole was made in the back of the boat and a new bearing glassed in to raise the prop shaft angle to accommodate the new engine. Whilst doing this we took the opportunity to make the engine bay wider and glassed in new sides to the bay. In addition I moved the water inlet for the engine to under the port quarter berth and the batteries to below the starboard quarter.

When all of this work was complete (three summer months) after the hoped for "weekend job" the new engine was fitted and all worked well until the end of 2001. I dipped the oil (a monthly practice) towards the end of the season and lo and behold the dipstick was white with emulsified oil. Seawater had got into my nice new engine! I took the rocker box off and the valves had all gone rusty.

I was now faced with a big problem. Did I remove the engine, take completely to pieces and try to clean the corrosion from all internal parts or look for another engine. The third in the boat in two years. Fortunately a good secondhand Volvo MD7B (18 hp) engine became available, and due to all the remodeling which had taken place fitted straight into the engine bay,

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even though it is bigger than the 2002. Engine number three is still running well after this season, and I hope will continue for many years to come.

Note: A lesson for anyone running a boat with either a Volvo 2001, 2002 or 2003 engine, the water pump is driven by a shaft which comes from the engine through the block. This shaft has a small seal which, if worn, the pump will pump water straight into the engine.

Lessons to be learned.

1. Measure components; do not take other peoples word that it works on their boat.
2. Check small parts as well as big. I lost an engine for the want of a £5 seal!!

BILL GARROD
Crystal

The Commodore Writes
Peter Llewellyn

The Season is now coming to an end although some of us will no doubt continue sailing throughout the winter.

It has been an odd season starting with very indifferent weather. I took Incamoon out of the water mid- April, and after a few set backs was able to have her ready in time for the first Solent Area Rally at Gins Farm . It was a great weekend and we must make it the venue for another Rally soon .A trip to Cherbourg had been suggested for the Jubilee weekend but no Tomahawks made the crossing.

The following weekend we had a Tomahawk rally at Marchwood Sailing club. Again the event was a great success.

As Incamoon was without a mast over the Jubilee weekend with a friend, I sailed in a International Folk Boat to Cherbourg and then Falmouth via Dartmouth.

The first two weeks of September I crewed a Scampi 30 back from Sweden. (Anyone interested in hearing about the trip is welcome to come and see the presentation at Warsash Sailing Club on January 17th.) Look out for Incamoon where she will be featured in Sailing Today sometime next year. She was put through her paces in

Southampton Water off Netley. I'm told that if there is a suitable picture we may make the front cover!

The year before last the Solent area group had a winter dinner. It was a good opportunity to meet up and discuss ideas for the then approaching season.

A similar event has been arranged for Saturday 1st March 2003 12.30 for 1300 at Warsash Sailing Club. All are welcome- its not restricted to Solent area members! If you are not sure how to get there call me for directions or look up the directions on the club website www.warsashsc.org It is easily accessible by road and not far from Swanwick station. Please let me know if you can attend and the numbers coming

Next seasons Solent based events for your diaries are as follows:

10th/11th May Lymington Rally at Lymington Yacht Haven with Dinner at Lymington Town Sailing club. Portsmouth High Water
Saturday 0602 &1906
Sunday 0723 &2020

21st June Island Sailing Club's Round The Island Race. Portsmouth High Water 0502 &1749
Anyone interested in crewing please call me.

3rd July (evening) to 7th July Cruise to Cherbourg

Chicester Harbour Rally 13th/14th September
Portsmouth High Water
Saturday 1357
Sunday 1426

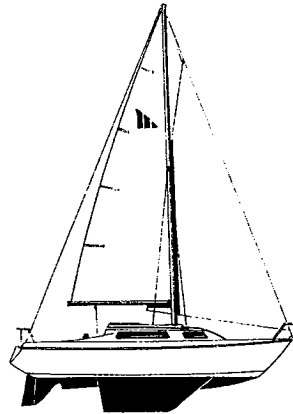
Have you logged on to the Association's new web site yet? The site needs all our input to continue its development. Please make full use of it. If ever you go into a chandlery that sells Cape Horn Dockside deck shoes, take a look at the shoe box. The outside is printed with a colored chart of the sea area around Cape Horn. It also bears the following message:- Warning, this chart must not be used for navigation!

TOA Rally Marchwood 21/22 Sept 2002
The weekend is finally here, and thanks to an Indian summer smiling on us Tomahawk

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owners the weather is set fine as we slip out of our berth at Bursledon and motor gently downstream to the tribal gathering at Warsash Sailing Club jetty. Our boat Moccasin is best described as -full' with Gill & I, our two 'fenders' Kathy (10) and Chris (7) and their friend Kayleigh (10) who has never before been on a yacht; we are anticipating an interesting weekend. Safety briefing done (and ignored) on our way downstream, barely a breeze ruffles the Hamble rivers surface until the throng of boats and wellies tempted by the promise of good weather turns the mirror stream to a choppy little motorway. We spot the WSC pontoon with 2 large 'beamy' yachts rafted on its upstream side and as our view improves, see the welcome flutter of a pair of club burgees and the smiling faces of Mike & Pauline with Red Warrior and Bill & Gloria with Crystal. Lines are taken by willing hands and I fluke Moccasin alongside a convenient space (I say fluke because we all know how easy it is to cock-up the simplest maneuver when the river gods are playful!). It s lovely to remake old acquaintances over hot mugs of tea on the jetty whilst our commodore Peter makes all welcome before quickly setting out with Mike to retrieve his yacht Inca Moon from her mooring upstream. A subsequent wash down to remove bird strikes is watched amidst good natured heckling until Peter obliges his audience by pressing just a little too hard on the deck brush popping the head off- to skitter across the coach roof towards the water... cue applause.! (There's just no respect any more is there). We are soon joined by a new member yacht Moon Maiden and her owners Ian & Claude who rapidly identify with the twin aims of the TOA - 1)To sail as often as possible 2)To do our bit to reduce the European wine 'lake- Ian & Claire have owned Moon Maiden for 10 years now and like the rest of us appear to have reached that dangerous state of affairs where they have a relationship with their - boat, this is guaranteed to cost money.! (Welcome to the club). Having determined that others plan to meet us at Marchwood Yacht Club we all cast off



around 10.30 for an impromptu race up Southampton Water.

With the tide on the flood we have a NNW 2-3 blowing against us as, being the only BK yacht, we take advantage of our shallower draught to turn out of the river channel early, raising sail as we cross the gravel bank Our 'fenders' are almost jumping with excitement as we open up an initial lead from our deeper draughted opponents and the teasing of Gills "Quiet kids, daddy's racing" isn't entirely wasted on me as the light wind

drops away to nothing in the lee of the BP oil terminal - Drat and double drat!! Tacking as late as possible (i.e. not hitting channel marks, assorted moorings, or going aground) results in a great fun melee up Southampton Water, providing a jaw-dropping spectacle of sea-worthy 25 footers for the crowds as we pass the Southampton Boat Show. At one point the harbour masters launch is forced to activate his sirens as we pass and announce over his p.a. system "Six knots

speed limit! - a proud moment, until we see the RIB subject of his call passing us close on the port side.- Ah well. We all arrive at MYC around 1300 to be greeted by the sight of numerous Old Gaffers bedecked in their finest bunting for their rally & race meeting and we slip into our moorings without any PMT . (Pre- mooring tension) and are soon enjoying the spectacle of the gaffers racing. The sun is breaking through light cloud cover as the MYC present a sail past salute to the Queen in her jubilee year of some 20 - 30 yachts... The queen apparently later remarked that it was a pity her fleet review in the spring hadn't been able to muster a similar number of boats!!

As evening falls the pre-autumn chill settles over our moorings, (Thanks to Bill & Gloria from Gill for the loan of a fleece) and having now been joined by the most modern Tomahawk in the association, Mike & Penny's Swift Wind (Which has the traditional hull but is topped with a more sloped coach roof and less pronounced tumblehome) we make our way up to the MYC clubhouse; an ex-naval ordnance depot now converted to a welcoming clubhouse bar & kitchens hung with numerous association burgees, and

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boasting it's own Victorian water cooled ordnance store (Brick tunnels under the floor ran with water to reduce temperatures) from a time when explosives were less than stable - unlike the bangers now sizzling on the barbecue as the 5 piece Jazz band sets up and starts playing for the now -packed-clubhouse.

Wine and beer flows and we are joined by two new members Tiger Lilly and her owners Kiltie & Sarah and All Chiefs with her skipper Paul Davies... both yachts were bought this year (Lets hear it for good taste!) and all are made welcome as seasons stories are swapped and rounds bought. Our commodore makes a short speech of thanks for their warm hospitality during the evenings trophy presentations, and presents MYC with a TOA burgee for their festooned hall before we drift back to the pontoons for a peaceful night afloat.

Daybreak on Sunday is bright and cool, blue sky pushing in from the north-west with the sun occasionally breaking through to sparkle from the water and bounce off bright topsides - a moment to savor with a hot sweet cup of tea. As a team we head up to the clubhouse and indulge in a cooked English breakfast before finally setting off on the return trip down Southampton Water, the fluky breeze settles as we pass dock head into a NNW/N force 4 with occasional stronger gusts and we all take off southwards running at full tilt and making the mouth of the Hamble river in 1 hour flat - what a cracking sail.!

A cheery wave from/to Peter and Inca Moon as we head upstream and we moor up in brilliant sunshine with blue skies and - simpson- clouds - It's been an excellent weekend, 'stress' is a word left behind at work and our thoughts him already to a Christmas get-together and the first rally of 2003, hope to see you all there whether you made it to this one or not.

Richard & Gill H-Brown
Moccasin

A Cry for Help

Dear Mr Juer,

I was given your contact email regarding some help I require with a Tomahawk 25. I am replacing the starboard side alloy rub rail

after an accident and cannot track down a new one from any of our suppliers. Can you help? Does anyone still carry old stocks of this item or do you know where I could place my hands on one. I would be much obliged for your help and so would Mr Henderson the owner.

Yours Sincerely

Paul Addison

Ferry Marine
Port Edgar Marina
South Queensferry
Edinburgh
EH30 9SQ

Phone: 0131 331 1233

Fax: 0131 331 4836

Learning From the Marine Accident Investigation Board

A Pause for Thought Whither the weather

The marine accident investigator has two roles: to investigate accidents to determine what happened and why, and to identify trends. The aim of both is identical, to prevent them happening again.

Readers of our investigation reports and Safety Digests will have noticed that certain elements keep cropping up again and again. Perhaps the most obvious is the frequency with which reference is made to the human factor as an underlying cause of so many accidents.

It isn't the only one. Weather and sea conditions not only provide the backdrop to practically everything we do at sea, but are often crucial factors when things go wrong.

You only have to reflect how the weather has played its part in maritime history. The storm of 14 October 1881, when 300 fishermen in Scotland lost their lives, is still remembered. A glass calm sea, freezing temperatures, and an iceberg played a significant part in the loss of the Titanic. A ferocious storm in the Irish Sea lay at the heart of how the ferry Princess Victoria sank on 31 January 1953, while fog featured as

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the crucial factor in the collision between Stockholm and Andrea Doria in July 1956.

The 1979 Fastnet race is still recalled with horror by the ocean racing community, as is the Sydney Hobart race of 1998. And large ships are not immune when reflecting on the 400 or so containers that were lost overboard from the container ship APL China while on passage off California in the same year. Bad weather played a part in the break-up of Erika in December 1999.

Study, and knowledge of the weather is a core subject for seafarers, and they are introduced to it early in their careers. For those working in machinery spaces, the galley or the accommodation, it might not be quite such a formal agenda item, but it only takes a day or two for the first time voyager to discover that ships roll, pitch, heave, lurch and corkscrew. They soon learn the importance of stowing things away properly, and the art of maintaining a balance and sure foothold at sea. Choice of suitable footwear is crucial. The old adage of "one hand for the ship and one for you" is as true today as ever.

Sailors the world over live with the effects of the weather. Some become quite boring about it, and revel in how thick the fog was on their last voyage, or describe in vivid detail how they survived Typhoon "X" in the South China Sea. The marine accident investigator, meanwhile, is forever being told how a 'freak' wave was responsible for some disaster. Weather is a factor we cannot ignore.

While every investigation tends to throw up some new lesson, it is instructive to read old reports to see whether we can still learn from the experiences of the past. The answer is we can, and this article draws together a number of lessons that will come as no surprise to the average mariner, but will serve as ready reminders for those among us who might have become slightly blasé about matters meteorological.

Despite satellite surveillance systems and computer-based predictions to help forecasters, and modern communications that enable mariners to access the latest information in detail, the weather is still a fickle commodity, with the ability to surprise. There have been a number of accidents to both small craft and large merchant vessels where those on board have failed to heed the available weather forecasts. There have,

for example, been some incidents where it appears the sole source was the local TV channel or radio station. As mariners know only too well, the weather offshore is likely to be very different to that inland.

Those intending to put to sea in charge of a vessel have a duty to all on board, and as part of the safe passage plan, to gather as much information about the predicted weather as possible, and apply their own judgment on the conditions to be expected.

At its most basic, this not only means examining the general synopsis and monitoring area forecasts, but also looking at the sky, interpreting the barometer and, where feasible, looking beyond the harbour wall. And there is everything to be said for contacting the local harbourmaster, coastguard, or local weather station to establish the current conditions and what is forecast. Local knowledge can be invaluable.

Once at sea it pays to read every available forecast. Conditions can change, and sometimes rapidly. Once again, the mariner must not only pay heed to the forecasts, but must also use these to complement his own observations. An understanding of what is happening when, for instance, high winds are predicted, is invaluable. Such knowledge may also enable him to predict the formation of a secondary depression in advance of it featuring in an externally produced forecast. And when the bad weather arrives, the good seafarer should be well prepared.

Take fog. It doesn't take a genius to realise that the risk of collision increases many times over when underway in fog or other conditions of reduced visibility. Snow, very heavy rain, and sandstorms have even greater powers of degrading the navigation and anti collision aids at your disposal. Those of us who are unaccustomed to navigating in falling snow may well be surprised at how deceptive the imagined visibility can be. What seems to be a good mile or two, may in fact be no more than a couple of cables.

Despite radar and ARPA, many of us are guilty of failing to adjust to the Rule 19 mentality when operating in conditions of reduced visibility.

One of the most common factors to emerge in any analysis of a collision in fog, or something similar, is the tendency for

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watchkeepers to make unjustifiable assumptions about another vessel's heading when her range is close. Time and time again watchkeepers react with total disbelief when the 'other' vessel looms out of the murk to reveal a starboard bow instead of the expected port, and vice versa. The lesson is that if you cannot see the other vessel at close range, and you find yourself making an assumption about her heading, you may well be wrong. Act accordingly.

This may be an opportune moment to remind ourselves of a technique successfully adopted by our forefathers in certain conditions of abnormal visibility: the placing of a lookout low down and well forward. A lookout in the bows, as opposed to high up in the heated comfort of a carpeted bridge, is often well placed to see something a few precious seconds before the officer of the watch. To maximise his effectiveness he must, however, have very good communications with the bridge.

But while fog is an unwelcome bedfellow for mariners, it is the bad weather that does the damage.

Despite the lessons of the past, and hard won experience, some vessels still proceed to sea with gear and cargo insufficiently secured. No matter how benign the conditions seem beyond the breakwater, it is still possible to get caught out. By the time the pilot has been dropped, and you encounter the first heavy sea or swell, it may already be too late to put someone safely on to the upper deck to lash things down. Good seamanship starts in port. Check and double-check that cargo-securing arrangements are in place before putting to sea, and that any loose gear has been properly secured. Particular attention should be paid to securing containers. Transverse forces acting at the top of a stack, when rolling in a beam sea, can be immense.

One of the primary causes of Braer suffering an engine failure before going aground at Garthness on the Shetland Islands, in 1993, was the failure to properly secure some spare pipes on deck. As the tanker laboured in heavy weather, they

broke loose and damaged some vent pipes, which allowed seawater to drain into the oil fuel tanks.

Apart from anything else, there are dangers in putting seafarers on deck in rough weather. More than one person has been killed or seriously injured by green seas while working in an exposed position. Analysis often reveals that had things been properly attended to in the first place, it would never have been necessary to put someone out to secure loose gear or shut a weathertight opening.

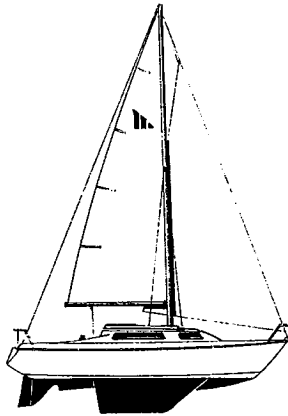
Another factor for people working in exposed conditions is that they are never as efficient as they would be in fair weather or in harbour. Little allowance is ever given to reduced performance in bad weather, so expectations of normal responses, and attention to detail, are likely to be misplaced. For the watchkeeper working in a totally enclosed bridge there is a danger that he, or she might become detached from the elements outside, and will no longer have that instinctive feel for the actual conditions. There is no reason why someone so protected shouldn't be aware of the sea conditions, providing a conscious effort is made to watch what is happening and analyse its effect.

An awareness of how bad weather can damage vessels comes with experience. Nobody will thank you if you push a vessel too hard. More than one ro-ro ferry has damaged its bow visor in rough seas, and the prudent mariner may well choose to reduce speed before the damage is done.

And it is worth remembering the topography of the seabed. Smaller vessels, including leisure craft, can be very vulnerable when approaching the edge of a continental shelf in foul weather. And many a mariner has been surprised by how vicious the seas can be when underway in a gale in the relatively shallow waters of, say, the North Sea or the Baltic.

As conditions deteriorate, the small boat sailor should take care to shorten sail in ample time and be prepared to ride out the conditions if necessary.

Anticipating how one might react in bad weather, before setting out, helps. As the barometer drops, the wind rises, the seas



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build, and the visibility clamps, it is a bit late to wonder where the trysail might be stowed, or realise you have never used the new parachute anchor before. Sea room is the small boat sailor's greatest asset. He should not squander this advantage, unless he is very confident of his position and his ability to take his craft safely to shelter. Many a yachtsman has foundered at the harbour bar, having been perfectly safe offshore.

The two most frequently ignored factors among small boat users in bad weather are the need to keep warm, dry and well nourished, and for the skipper to get his head down so he can rest. It is interesting to note the number of mistakes fatigued skippers make.

Among the most frequently observed shortcomings of fishermen in similar conditions are the failure to make their vessels completely weathertight by shutting external doors and hatches properly, and not appreciating the dangers of free surface effect if water is sloshing around in the fish hold.

The big ship sailor faces a slightly different problem. There is no single reason that stands out as an area of concern, but there is perhaps the need to remind those in this category that big seas can still pack a very heavy punch. If the master decides that he should route his vessel well clear of stormy weather, then he should not hesitate to do so.

Ships can still drag their anchor if in an exposed anchorage, and if a master has any concerns about the scantlings in his ship, he would be well justified to slow down sooner - rather than later - on confronting bad weather.

Remember that one square metre of water approaching you on a steady bearing weighs one tonne. A breaking wave of, say only 3m high, will be travelling at about 12 knots, and the combination of its weight and approach speed could inflict heavy damage to a vessel that is not being well handled, or if there is a flaw in its structure. The implications make for sober reflection.

But that's seafaring. The good seafarer can cope with bad weather. The sea will expose those who are not so well prepared.

Vigilance, ARPA and Relative Speed

Incident 1:

The skipper of a 13m steel ketch told the MAIB of two separate close-quarters incidents that occurred in the Dover Strait and the Thames Estuary. His yacht was equipped with radar with ARPA, and a high specification radar reflector.

To encourage others to report near miss incidents, the names of the vessels involved are not included.

Incident 1:

The yacht was heading in a north-westerly direction to cross the west-going Dover Strait TSS at right angles to pass south of the Goodwin Sands. The tide was setting SW so, at a speed of 6 knots, the yacht was heading 320°T while making good about 300°T. A ship was spotted to starboard heading south, outside the Goodwins, but to the west of the traffic lane. It was assumed she was intending to join the TSS. The yacht's ARPA predicted the ship would pass safely astern, but when the range was relatively close she made an alteration of course to starboard. This instantly created a collision situation. The yacht had to make a late alteration to starboard to avoid a collision, and the two vessels passed about 1.5 cables apart.

Incident 2:

The yacht was making passage on a course of approximately 290°T in the Thames Estuary to the north-east of the East Swin, at a speed of about 6 knots. A ship was detected on the yacht's starboard

quarter making at least 12 knots on a course of between 240-260°T. She was on a steady bearing, and the ARPA indicated that a risk of collision existed. As the range closed, the overtaking vessel made no attempt to alter course. When the vessels were 3 cables apart, the yacht had to do something to avoid being run down, and made a 360° turn to port while the merchant vessel passed by.

The Lessons Many yachtsmen can associate themselves with such incidents. Their overriding concern is always to know whether the approaching vessel has seen them and, if so, are they going to do anything about it? Such encounters tend to age yacht skippers prematurely. In this instance the yacht was made of steel, had

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an effective radar reflector and was, unusually, fitted with ARPA. Her skipper could reasonably expect to be seen both visually and on radar.

1. The overwhelming lesson to arise from these incidents is for all bridge/cockpit watch keepers to keep a good lookout.

Merchant ship OOWs should be constantly alert to the likely presence of yachts and other small craft in coastal waters. In taking action to avoid close quarter situations they should leave no doubt in the yacht watch keeper's mind what their intentions are.

2. In both cases the yacht was forced to take avoiding action owing to the questionable actions (or inactions) of a much larger and faster vessel. The yacht skipper's vigilance prevented what might have been worse than a 'near-miss'. Anyone in charge of a vessel at sea must be mentally prepared for the give-way vessel not to take the necessary action to avoid a close quarters situation. The alternative nightmare is for the 'other' ship to do something very odd at the last moment. Collision can sometimes only be avoided by the 'stand on' vessel "taking such action as will best aid to avoid collision."

3. Where two vessels are converging at differing speeds, the importance of taking regular compass bearings is paramount.

What might appear to the casual eye as a vessel passing well astern or ahead because of its relative position, could be passing much closer - it is very difficult to assess the speed of another vessel with a quick glance.

4. In a strong current, the aspect of a slow vessel might be very different to its track over the ground.

5. In confined waters, yachtsmen should be very alert to the various constraints that can prevent larger vessels taking the textbook action to manoeuvre freely to avoid a collision. A nearby sandbank, other traffic, deep water channels, a nearby fishing vessel or even confusion as to your intentions, can make life very difficult for the other watch keeper. Good sea manners, a good lookout, a sound knowledge of the Rule of the Road, and the importance of making your intentions clear, will do much to ensure a safe passage.

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