

BEAR ESSENTIALS

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THE NEWSLETTER OF CARDIFF BAY YACHT CLUB 51.26.9 N 03.10.4 W

Established in 1935



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Cost priceless

www.cbyc.co.uk

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Eternal vigilance is the price of safety and safety is a state of mind, not a list of equipment and remember to always wear a lifejacket when on or near water.

GOING FOREIGN?: Be careful "Out There", the idiot's guide to Euro Travel! A survey of motorists waiting to embark at Dover found that 61% had neglected to carry a Fire Extinguisher, 17% didn't have a Warning Triangle and 19% had forgotten a First Aid Kit!

Any of these errors would find the motorist breaking the law in France, Spain and Germany. 1/3rd of drivers weren't carrying a spare set of bulbs, a standard requirement on the continent. Failure to carry the right equipment in France could result in a spot fine of up to £250 and/or confiscation of the driver's license.

Here are a few of the requirements for: **France...** Use of speed trap detector: fine of £300. Exceeding Speed limits by more than 40kph, (24mph): on the spot fine and license confiscation. Speed Limits: Motorway, 130kph, (80mph), or when wet, 110kph, (68mph). Open Road, 90kph, (55mph). Town, 50kph, (31mph). **Spain...** Spare Fuel Can: Compulsory. **Portugal...** Running out of fuel is also an offence]. If you wear glasses, you must carry a spare pair. Motorway Breakdown: Reflective Jacket must be worn. Speed Limits: Motorway, 120kph (74mph). Open Road, 90kph, (55mph). Town: 50kph, (31mph). Germany... Spare Fuel Can: Compulsory. Abusive language or insulting signs can result in on the spot fines. Speed limits: Not all Autobahns are free of limits, it's a myth. Motorway/Autobahn, Recommended, 130kph, (80mph). Open Road, 100kph, (62mph). Town: 50kph, (31mph). Supplied by Bryan (Reels) Morgan... from The Sunday Times.

WEB SITE: David Cairncross administers the Club Website; he has asked me to request that all sections send him details of their coming events; he says "I'm becoming a bit worried about the lack of new content for the website. It's all becoming a bit historical. Please could you ask representatives of the various club sections to produce some material describing their activities." This holds true for the Bear Essentials also. We are both hungry for content. T.D.

RIGHT OF WAY: An easy way to remember who has right of way...The craft on your right; has the right of way, (it's as simple as that).

Please remember there is a 5 knot speed limit in the river Ely.

Bar Summer Opening Hours May - September

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Monday	12.00 noon to 23.00
Tuesday	12.00 noon to 23.00
Wednesday	12.00 noon to 23.00
Thursday	12.00 noon to 23.00
Friday	12.00 noon to 23.00
Saturday	12.00 noon to midnight
Sunday	12.00 noon to 22.30

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Look after your gear and it will look after you... yes, that means you!!!

There is nothing; absolutely nothing; half so much worth doing as simply messing about in boats. In or out of 'em, it doesn't matter . . . that's the charm of it... Kenneth Grahame, "The Wind In The Willows"

FREE WEATHER FORECASTS: Need a free weather forecast? Then visit www.metbrief all the free weather sites are listed there.

THE CLUB RESTAURANT IS NOW OPEN MIDDAY FOR BAR FOOD

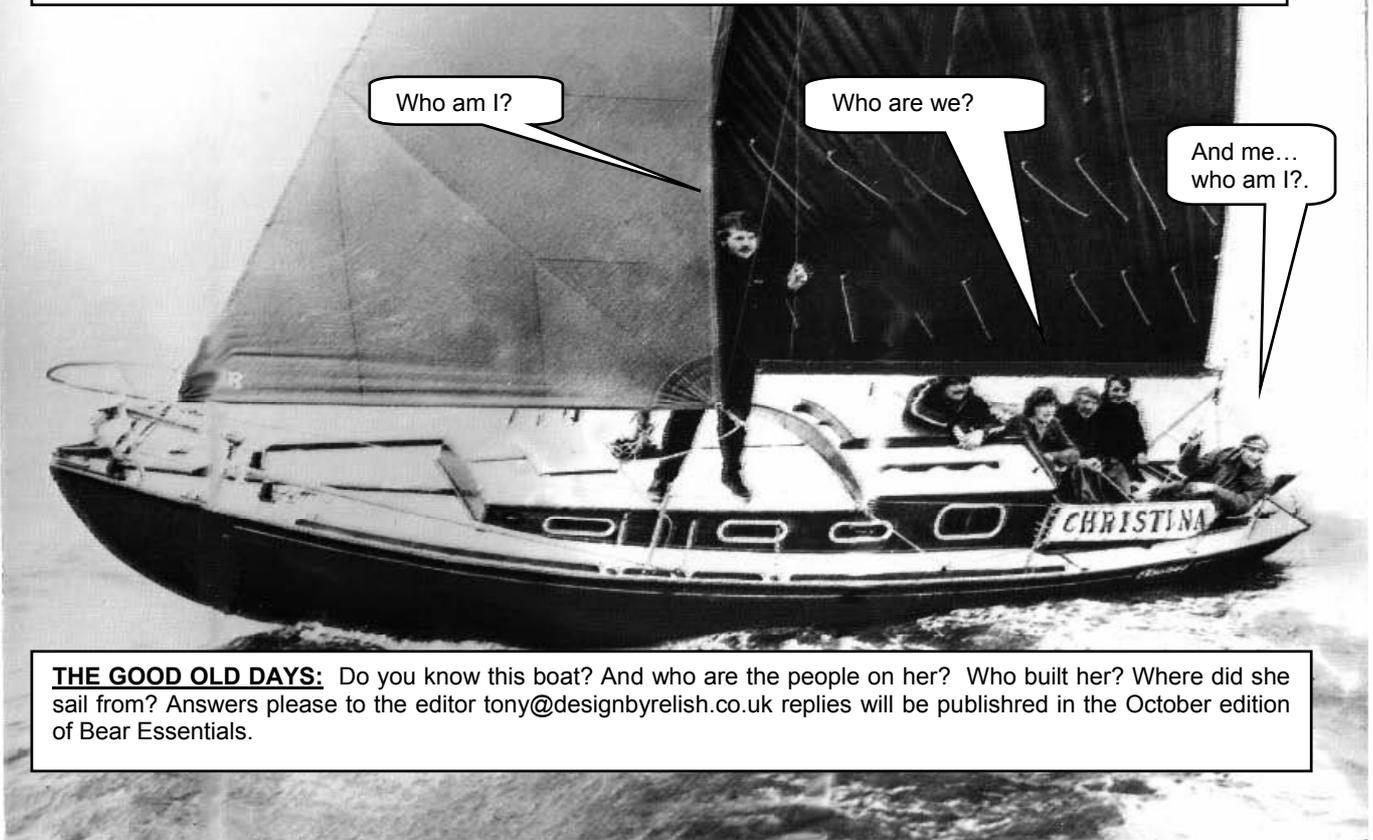
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12 noon to 2.00pm Tuesday to Saturday.

Why not stop by and sample some of the excellent fare available at lunchtimes at the Cardiff Bay Yacht Club, jacket potatoes overflowing with sumptuous fillings or Welsh rarebit like you've never tasted before. Maybe you'd prefer a mouth-watering curry or a lasagne to die for. I'm sure you will find something to tickle your taste buds on our menu.

PHOTOS: If any member has an interesting old photograph they would like to see published in Bear Essentials, especially ones with people, please e-mail it to the Editor tony@designbyrelish.co.uk if you are unable to e-mail, please let me have the photo and I will scan it.



THE GOOD OLD DAYS: Do you know this boat? And who are the people on her? Who built her? Where did she sail from? Answers please to the editor tony@designbyrelish.co.uk replies will be published in the October edition of Bear Essentials.

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SPRINT 15 NATIONALS: Pwllheli, North Wales. 18 / 20 Aug 05. On wed 17th Aug I was up early, the reason for this was to travel to Pwllheli for the Sprint 15 National Championships. At 9:00 I hitched up my Sprint 15 Dodger and left the sailing club at Cardiff Bay and headed north up the A470, Over the Brecon Beacons then Brecon, Builth Wells, Rhayader, Llanidloes, Dolgellau, Porthmadog and then after over five hours driving Pwllheli 170 miles from Cardiff. Not at all bad for a 34 year old VW Camper towing a 15 foot cat, however I did make good use of second gear on more than one or two hills (who put all those hills in the way?)

Over the next 3 days I sailed 6 of the 7 races with 34 other Sprint 15's in winds ranging from 4 mph to 20 mph, My best result was 4th in race one, and my worse result was 29th and my overall position was 20th. The company both on and off the water was excellent with some very close racing on the water and a lot of fun on shore, including the BBQ night at Pwllheli Sailing Club and the Association Dinner at the nearby village of Criccieth.

Then, after the Prize giving on the Saturday, it was all hands to the pumps to load boats back into trailers ready for the long trip home on the Sunday Morning, leaving at 7:00 and arriving Back at Cardiff Bay at 12:00. Altogether a great couple of days, can't wait till next year. Idris. PS. Full Report on sprint15.com Sail Fast Have Fun! Regards Idris.

Great suffering and sin... please take your rubbish to the bin... after working on your craft.

Calendar of events in September

Day	Date	Event	Time	Organiser
Thur	1	Cruiser night.	Restaurant (12 till 2 pm & evening)	
Fri	2			
Sat	3	Shanghai Cup.	B-B-Q & Disco, tickets £5.00. (* C. in C.)	CBYC Event
Sun	4	Shanghai Cup.		
		Angling Competition.	07.00 – 1900. Restaurant (12 till 2 pm)	Angling Section
Mon	5			
Tue	6	Restaurant	(12 till 2 pm)	
Wed	7	Angling night.	Restaurant (12 till 2 pm)	
Thur	8	Cruiser night.	Restaurant (12 till 2 pm & evening)	
Fri	9			
Sat	10	Shanghai Cup.	Caribbean Night, tickets £5.00 (* C. in C. N.U.S.C. Regatta)	CBYC Event
Sun	11	Shanghai Cup.	Restaurant (12 till 2 pm)	
Mon	12			
Tue	13	Restaurant	(12 till 2 pm)	
Wed	14	Angling night	Restaurant (12 till 2 pm)	
Thur	15	Cruiser night.	Restaurant (12 till 2 pm & evening)	
Fri	16			
Sat	17	Shanghai Cup.	Rodeo Bull & Disco, tickets £5.00. (* C. in C.)	CBYC Event
Sun	18	Shanghai Cup.	Restaurant (12 till 2 pm)	
Mon	19			
Tue	20	Restaurant	(12 till 2 pm).	
Wed	21			
Thur	22	Cruiser night.	Restaurant open (12 till 2 pm & evening)	
Fri	23			
Sat	24	Shanghai Cup.	Presentation, Black tie, tickets £15.00	CBYC Event
Sun	25	Shanghai Cup.	Restaurant (12 till 2 pm) (* C. in C. Barry T.V. Race).	
Mon	26			
Tue	27	Restaurant	(12 till 2 pm)	
Wed	28	Restaurant	(12 till 2 pm)	
Thur	29	Cruiser night.	Restaurant (12 till 2 pm & evening)	
Fri	30	Restaurant	(12 till 2 pm)	

* C. in C. = cruise in company: Please call Tony for destination & details. tel 07816 337904

The bar is open from 12.00 till 23.00 daily through the week... 12 Noon till 12 midnight Saturday and 12 Noon till 11.00 Sunday.

Calendar of events in October

Day	Date	Event	Time	Organiser
Sat	1	Restaurant	(12 till 2 pm) (* C. in C.)	
Sun	2	Restaurant	(12 till 2 pm)	
Mon	3			
Tue	4			
Wed	5	Angling night.		
Thur	6	Cruiser night	Restaurant (evening).	
Fri	7	Bar Open	from 12 noon.	
Sat	8	Flying Fifteen	(Training 09.30 to 16.30) Restaurant (12 till 2 pm)	Helen Phillips
Sun	9	Restaurant	(12 till 2 pm) (Margam Boat Jumble).	
Mon	10			
Tue	11			
Wed	12	Angling night.		
Thur	13	Cruiser night.	Restaurant (evening).	
Fri	14	Bar open	from 12 noon.	
Sat	15	Restaurant	(12 till 2 pm) (* C. in C.)	
Sun	16	Weston Plate Race.	Restaurant (12 till 2 pm)	Paul Simes
		Angling Competition.	07.00hrs – 19.00hrs. Last weigh-in 19.15hrs	Angling Section
Mon	17			
Tue	18			
Wed	19	Angling night.		
Thur	20	Cruiser night.	Restaurant (evening).	
Fri	21	Bar open	from 12 noon.	
Sat	22	Restaurant	(12 till 2 pm)	
Sun	23	Restaurant	(12 till 2 pm)	
Mon	24			
Tue	25			
Wed	26	Angling night.	B.C.Y.A. Get together at N.U.S.C. 19.00.	
Thur	27	Cruiser night.	Restaurant (evening).	
Fri	28	Bar open	from 12 noon.	
Sat	29	Restaurant	(12 till 2 pm) (* C. in C.)	
Sun	30	Open Cod competition.	Restaurant (12 till 2 pm) (W. Midlands Boat Jumble).	Angling Section
Mon	31			

* C. in C. = cruise in company: Please call Tony for destination & details. tel 07816 337904

The bar is open from 17.00 till 23.00 daily through the week; 12 noon on Fridays.
12 Noon till 12 midnight Saturday and 12 Noon till 11.00 Sunday.

GOOSE WING: In a square-rigged vessel, a course or topsail with its weather clew hauled up to the yard and its lee clew (corner) hauled down and spread. In fore-and-aft rigged vessels, the term is synonymous with wing and wing.

PRIME MERIDIAN: Or first meridian. The meridian from which longitude is reckoned. The choice is purely arbitrary, and many different meridians were used in the past, varying from country to country.

The second century geographer Ptolemy chose the Fortunate Isles (now the Canary Islands) as the most westerly land known.

French charts of the 1750s had five different longitude scales – from Tenerife and from the Isle de Fer (Hierro) in the Canaries, from the Lizard (the point of departure for many ocean voyages), from London (St. Paul's), and from Paris Observatory.

The Greenwich Meridian was not used by British mapmakers until the British Nautical Almanac was first published in 1767. It was adopted internationally in 1884.

LOOK BEFORE YOU TACK: Every sailor knows that power should, in general, give way to sail. But as the stand on vessel the sailing boat is required to maintain its course and speed, until it becomes apparent that the give way vessel is not taking appropriate action. If you tack into the path of a powerboat you are in the wrong because you have not acted in the way required of the stand on vessel. Look around and be aware - don't just presume that the approaching powerboat knows you are running out of water and need to tack.

FOR SALE: The fast and close winded sea-kindly sloop River Rambler; she is a "Trintella 29" by Van De Stadt, 1978 design, in G.R.P. white hull, red trim, lots of extras including dinghy. Priced to sell quickly at £15,000 tel 07967 848862

VIRUS: I thought this may amuse some fellow Club members. Regards, Steve Adam. Subject: Virus Scan. There is a dangerous virus being passed electronically, orally and by hand.

This virus is called Worm-Overload-Recreational-Killer (WORK). If you receive WORK from any of your colleagues, your boss or anyone else via any means DO NOT TOUCH IT. This virus will wipe out your private life completely.

If you should come into contact with WORK, put your jacket on and take 2 good friends to the nearest pub. Purchase the antidote known as Work-Isolator-Neutralizer-Extractor (WINE). The quickest acting WINE type is called Swift-Hitting-Infiltrator-Remover-All-Zones (SHIRAZ) but this is only available for those who can afford it.

The next best equivalent is Cheapest-Available-System-Killer (CASK). Take the antidote repeatedly until WORK has been completely eliminated from your system. Forward this warning to 5 friends. If you do not have 5 friends you have already been infected and

WORK is controlling your life. This virus is DEADLY (Destroys-Every-Available-Decent-Living-Youngster).



Update 05-05-05: After extensive testing it has been concluded that Best-Equivalent-Extractor-Remedy (BEER) may be substituted for WINE but may require a more generous application.

COMBE DANCING: One hot summer's day in June, with the emphasis on one, we set off by motorboat for Ilfracombe, first taking on sufficient diesel to see us there. Our price for diesel in the marina has shot up 50 % since last year, but only 30 % in Ilfracombe so we filled up there in order to do my bit for global warming. The day, towards the end of June was warm with little cloud and a 5kn easterly giving us a flat sea on an outgoing tide. The g.p.s. course put us down the centre of the channel but we went inshore passing Lynmouth. There were no other pleasure vessels about, we passed a dredger going west and a car ferry passed us going to Ireland.

Off Woody Bay our path was crossed by a pair of porpoise out fishing for mackerel, several Guillemots a Fulmar and a couple of Gannets, not much wildlife these days! A quick glance as we passed Watermouth revealed a full harbour of dried out vessels and a couple in the pool, quite a change from the last time I looked in there a couple of years ago. We arrived in the range at Ilfracombe about one hour before low water, a 3.25 hr passage.

One other yacht was in the range from the Usk river. There was no chance of using the range moorings as they were already drying out even on a neap tide. We dropped anchor in 2m of water and paddled ashore in the dinghy to see the H.M. and check the weather forecast for the next few days. The weather forecast was poor so we opted to go inside against the wall. Back on the boat we decided to do some fishing until the tide would allow us in, we dropped the hook in 17m and after several bites and lost tackle managed to land a 20 lb conger, the only fish thereabouts. The fish was unwilling to pose for a photo before I managed to get it back over the side.

The following day the weather turned nasty with a thunder storm brewing, before the rain, the wind reached 25 knt on Lantern Hill and later in the afternoon a gust of 50 knt came with torrential rain and overhead lightning. How fortunate not to be anchored in the range. We took time ashore to see a bit of the old part of the town, Fore Street, leading up from the harbour and especially the George and Dragon built in the 14c. There are many quaint houses and quite a few up market restaurants, we ate at one on the harbour side, a bit over priced but then the season is short. We went up Lantern Hill to visit St Nicholas's chapel built in 1320 but not used as a chapel since the civil war. The last occupants in 19c were a Mr & Mrs Davie who had 14 children, so apart from lighting the beacon we know what else it was used for. Interestingly, a descendent is about to be christened there.

The yacht club provided us with ale and ablutions, both first class, and we had a couple of beers with a couple of lads from Portishead heading south in a catamaran. The inside harbour provides 4 berths against the north wall and a further 4 against the south and another 10 for bilge keelers, best to phone at busy times for availability, 01271 862108. It was interesting to learn that a new marina is planned providing a harbour of refuge, pontoon berths and a new facility for ferries but details were pretty sketchy.

The following day the weather showed some improvement but a trip down to Lundy was abandoned due to the next day being poor again. We left with the last of the incoming tide for Porlock bay to do some fishing, we had 2 sizable skate and 20 dogs or so. What do they say about fishing with the wind in the east? We arrived back in Cardiff against the last of the outgoing tide, with another thunder storm crackling over Ilfracombe. JOHN WOOD 07 2005.

STOP: To lightly tie up a sail or awning with spun yarn or other small lines.



FLYING FIFTEENS: Was that the world champion? CBYC Flying Fifteen sailors had the opportunity to test themselves against the best Flying Fifteen sailors in the UK when the club hosted, once more, the Cardiff classic. Visitors included last years winner and Ex - World champion Simon Dangerfield.

The event is part of a UK Travellers series called the Arrowred trophy - there were nine visiting boats to the club coming from around the country making a total of 14 competitors. Superb wind conditions NE F4 to 5 meant a long windward leg into the harbour and some superb planing reaches with Spinnakers on both the Saturday and Sunday.

Local sailors were keen to test themselves against top competition and it was useful practice for the local South Wales boats going to the nationals in Poole. Duncan Baird and Tim in "Squall" were expected to do well and did achieve a third in one of the races before gear failure put them out of the running.

The winner of the event was Jeremy Arnold from Middle Neme. Second was last years winner Simon Dangerfield from Chew Valley. Ian Horton was the highest placed local boat in 7th (it was the crew) and Jayson and Mike Harrison won their very first sailing trophy as best newcomers.

The UK Nationals at Poole followed in the first week of August, Mike Jones and Simon, Ian and Andy D, plus Duncan and Tim had a whole week of sailing on the sea, swapping notes on set up and technique with the top of the fleet and it was a huge learning curve for most of us – I would highly recommend it to any FF15 sailor who wants to have fun and improve their sailing.

Mostly F4 sometimes F5 winds with huge waves great surfing and planing making it great fun. My boat was saved from being swamped by Andy's ingenuity (a spinnaker hatch cover complete with open close facility – made out of a Tesco carrier bag some gaffer tape and line and bungee – it works!)

Out of only 11 boats in the Classic Fleet, Mike and Simon came 6th, Duncan and Tim 7th and Ian and Andy 10th. The racing was very close with lots of near misses and most boats finishing within a few boat lengths of others.

I would urge any members in the fleet to consider joining Duncan, Tim, Simon and I in competing at middle Neme on 8/9th October. Ian Horton Flying Fifteen Fleet captain – ian.horton@uk.imptob.com

><((((((°<·'~`·. , ><((((((°> **ANGLING SECTION** ><((((((°<·'~`·. , ><((((((°>

As the Grand Cognac Cup Inter-Club Comp. was cancelled on 24th July, the arranged Presentation Night became an Angling Section Social Evening, as the buffet and cabaret had been pre-booked for August 6th. Although little time was available to re-organise, the evening was quite a success. The buffet and cabaret, Sam Cash, were both excellent and a very enjoyable evening was had by all who attended.

The Comp. on 7th August was won by Phil Dominy, Lady Caron II, with a Small Eyed-Ray of 9lb 4ozs and 2nd was Mervyn Woodward, a visitor on Bay Runner, with a Conger of 15lb 3ozs. So, we actually weighed some fish this time!

The re-arranged Grand Cognac Cup inter-Club Comp. with Cardiff Yacht Club went ahead on 21st August and was well attended by both clubs. There were 17 Boats with 54 Members and Visitors from C.B.Y.C. and 7 Boats & 18 Anglers from C.Y.C.

The first prize of £120 plus £68 Pool, was won by Bob Ward, [Celtic Star], with a Small-Eyed Ray of 10lb 90zs, 2nd Prize, £80, was won by Robert Davies, [Grand Cognac], with a fine Bass of 8lbs 13ozs. The 3rd Prize, £50, was won by Jack Beecher, [Five Oh!], of C.Y.C., with a Bearded Rockling of 1lb 4ozs.

The Comp. was followed by a brilliant Barbeque for all those who fished. Many thanks to Simon Leek for supplying all the food; and there certainly was plenty of it. The Chefs of the Day, Gareth and Terri Davies did a marvellous job, cooking from about 4pm until about 8:30pm. Even the weather was perfect for both the Comp. and the Barbeque, with many "Eatin' & Drinkin'" outside 'till dark

Our Weighmaster, Keith Jenkins also deserves a mention. He managed to "Be There" for the weigh-in despite having to visit his wife, Carole, who is in hospital in Weston-super-Mare, recovering from an operation. Well done Keith. Please pass on our best wishes to Carole.

The next Comp. will be on 4th September, details on Notice Board, so let's see a good turnout "like wot we 'ad" for the 21st!

Bear Essentials: is the newsletter of the Cardiff Bay Yacht Club, it is produced monthly and is entirely dependent on articles contributed by members, thanks go to the members who supply regular copy, it would be impossible to produce without your contributions. My ultimate goal is to obtain monthly copy from every section of the Club. The deadline is strictly the end of each month, if you have an article, anecdote, item for sale or wanted etc. please E-mail it to the editor... Tony Davies: tony@designbyrelish.co.uk

LETTER FROM THE YACHT CAMARGUE: Dear Commodore, It is hoped that you are enjoying a splendid summer. I am taking it upon myself to inform all yacht clubs about my new discovery. Which stops the current rip off telephone charges to friends and family when abroad. Do you realise that you can phone anywhere in northern Europe and northern America, Australia and China etc., for as little as one penny per minute. And when friends are on the same system they can speak for nothing.

Anyone is interested and would like more information please log on to www.neptune.net and go to the calls for free button. At last, you can enjoy the convenience of this service without it burning a hole in your pocket. This is only a free service that I am putting on my website which sells electrical goodies for boats. I also have a free weather service that you may wish to look at. Best regards Paul Charmbury Paulcharmbury@Neptunenet.net

BEAR ESSENTIALS: is posted to the membership three times a year... (May, August and November). Section Captains... these would be the best times to contact the members in your section, if you have something to contribute please e-mail me by the deadline, which is as usual, strictly the end of each month... tony@designbyrelish.co.uk Tony Davies (Editor).

CBYC MEMBERS SUMMER ODYSSEY: Sunday 7th August 2005 An account from on board yacht Bounty Hunter At 11 am 8 of our club members set off on three different boats, departing Cowes, Isle of Wight destined for a small Rock off the southern tip of Ireland.

The three yachts were Oz Privateer, with Kevin our Vice Commodore on board, Bounty Hunter, crewed by members or ex members of CBYC, and Eclipse with Claire, aka Bob, all competing in this years Fastnet Race.

Oz and BH are both Prima38 class yachts competing in Class 1; Eclipse being slightly larger and quicker was in the faster class 0. The forecast was generally favourable and we set off down the Solent under spinnakers in sunshine and light breezes.

Eclipse had been racing the in Cowes week, and rather hampered their chances by having a substantial collision, putting a large hole in the side of the boat – and a number of stitches in the head of one of the crew members. A visit to the hospital repaired the crew member, and overnight fibre glassing patched up the hull well enough to start the race.

On BH we have a tradition of evening 'Happy Hour'. At 6 in the evening an appointed crew member is responsible for producing an evening cocktail. Jeremy had just spent 2 weeks abroad, researching possible concoctions. The result was our first cocktail that looked very similar to dentist's mouthwash, but carried a considerably greater kick! Bounty Hunter spent a very happy first evening at sea.

Oz Privateer on the other hand had a major misfortune. The owner had provided a brand new mainsail (at horrific cost). The sail had been used twice before the start of the race, but on the first evening the top seam of the sail parted. Our worthy Vice Commodore spent his first evening at sea in touch with his feminine side, as part of a sewing circle! An hour or so later they re-hoisted the mainsail. The repair lasted the next four days – if you need a sail reliably repaired pass it to Kevin!

We all slowly wended our way down the south coast in sunshine and light breezes, and then across the Irish Sea. High spots for all were the frequency of visits of Dolphins (or was it porpoises, I don't know the difference, but it is heart warming to see them whatever they are). Some said they saw Sunfish and even Whales, but as the sightings tended to be in the evening I put this down to the strength of the cocktails.

Nearly three days out we pass – or more accurately drift around the famous Fastnet Rock. All our boats are doing quite well, although supplies of water and sun tan lotion are running low. Spinnaker up and charge back across the Irish Sea gybe, around the Scillies (been past them so many times but never stopped – and they look such a great place to stay), past Lands End, past the Lizard and a great sail under kite to the finish. Fastnet Rock to Plymouth with the kite up in bright sunshine – this is what sailing should be. BH ran out of cocktails on the last night – but we did find a secret store of red wine, which saved the day, so the crew finished in high spirits at about midnight having spent four and a half days at sea.

In the Marina at the finish Bounty Hunter signed our race declaration and discovered at that point we were winning our class! We spent a few hours in the beer tent, with frequent visits to the race office checking to see if any of the later finishers had overtaken us. By the time most of us went to bed (Amanda didn't bother) we knew that no one could overtake us. We won class 1.

Oz Privateer in spite of the sail problems finished 21st out of 58. Eclipse, in spite of a large repair and lack of sleep prior to the start got 11th in class 0 out of 59. A good result for CBYC – and more remarkably – I didn't have to put on a waterproof jacket for the whole race. Roger Dunstan Commodore.

FOR SALE: Avon Redcrest: Bag, oars floor boards, thwart. Stainless steel slings. Old but serviceable. £100.00. - WWII Very Pistol, red and white cartridge flares. FAC required - details on request. - Autohelm personal electronic compass exc con - £35.00. Complete set of signaling flags (in a roll, good quality, boxwood toggles) - courtesy flags (France, Channel Islands, Ireland) £55 contact: Charles Wollacott 20702704. - 07986 452211... Swiftech M 168 (non-DSC) In good working order, replaced by DSC set £20 Contact Richard White 01453 752010... Two non-DSC VHF radios both in working condition. I also have a gas cooker, also in working condition. Offers invited. For further information, please contact John Guilfoyle: 029 2070 6309 (home), 07970 177929 (mobile) johnguilfoyle@tesco.net.



POPPLING SEA: or rippling sea, ruffling of the water's surface.

UNDERSTANDING YOUR ALTERNATOR: WARNING LIGHT... "What does that little red light that says ALT mean when it comes on?" Very basically, it means that either the alternator output voltage is lower than the battery voltage, or the battery voltage is lower than the alternator output voltage. If the light gets dimmer as you rev up the engine, then you most likely have a problem with the alternator. If it gets brighter, then the battery is most likely bad.

That's all well and good, but just exactly what does all that mean? To get a good idea, it is first necessary to understand how an alternator works. You don't need an engineering degree, just a basic understanding of the general principles. Figure 1, below, is a block diagram, or a "functional" diagram, of an alternator, and its connections to the remainder of the electrical system. Following the figure is a description of the various components that make up an alternator, and a description of how each operates to keep the battery charged.

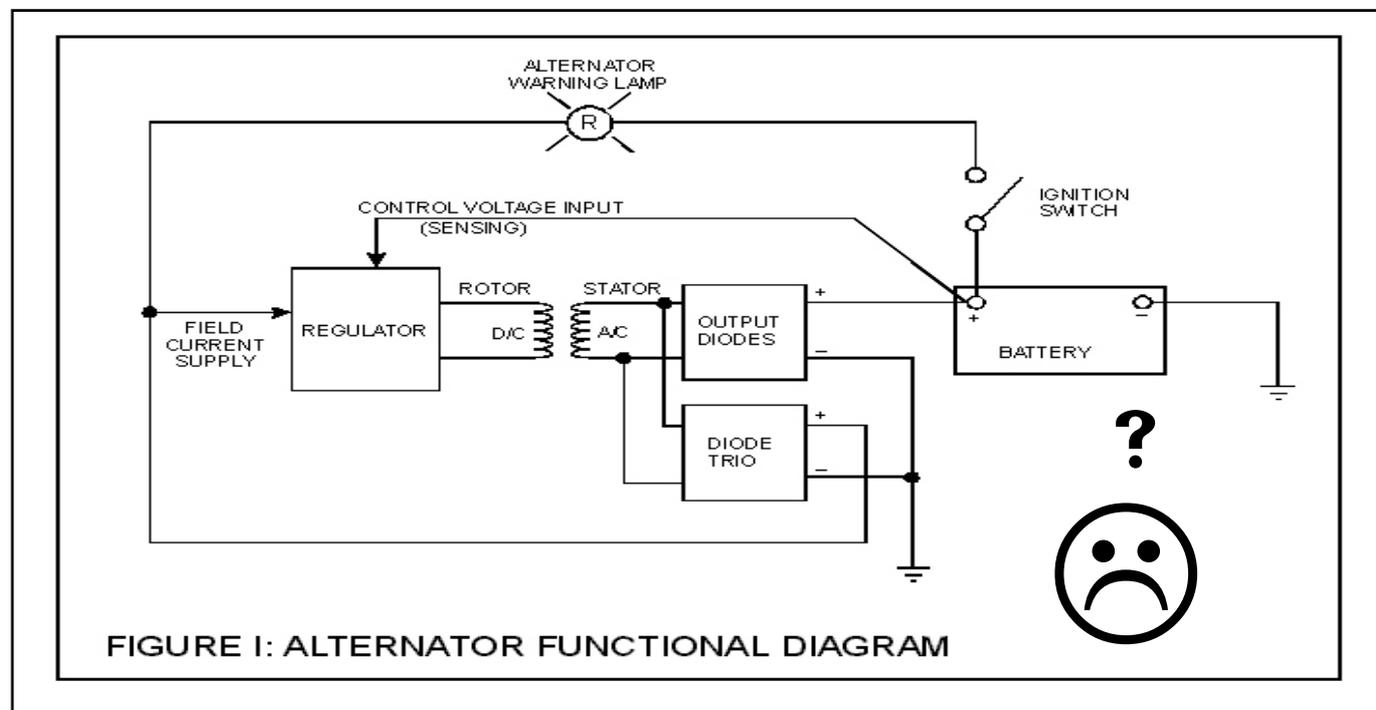


FIGURE 1: ALTERNATOR FUNCTIONAL DIAGRAM

ALTERNATOR ROTOR... We'll start our tour of the alternator where it all starts in the alternator itself - at the alternator rotor. The rotor consists of a coil of wire wrapped around an iron core. Current through the wire coil - called "field" current - produces a magnetic field around the core. The strength of the field current determines the strength of the magnetic field.

The field current is D/C, or direct current. In other words, the current flows in one direction only, and is supplied to the wire coil by a set of brushes and slip rings. The magnetic field produced has, as any magnet, a north and a south pole. The rotor is driven by the alternator pulley, rotating as the engine runs, hence the name "rotor."

STATOR... Surrounding the rotor is another set of coils, three in number, called the stator. The stator is fixed to the shell of the alternator, and does not turn. As the rotor turns within the stator windings, the magnetic field of the rotor sweeps through the stator windings, producing an electrical current in the windings.

Because of the rotation of the rotor, an alternating current is produced. As, for example, the north pole of the magnetic field approaches one of the stator windings, there is little coupling taking place, and a weak current is produced. As the rotation continues, the magnetic field moves to the centre of the winding, where maximum coupling takes place, and the induced current is at its peak.

As the rotation continues to the point that the magnetic field is leaving the stator winding, the induced current is small. By this time, the south pole is approaching the winding, producing a weak current in the opposite direction. As this continues, the current produced in each winding is plotted against the angle of rotation of the rotor. The three stator windings are spaced inside the alternator 120 degrees apart, producing three separate sets, or "phases," of output voltages, spaced 120 degrees apart.

OUTPUT DIODES... A/C voltage is of little use in a D/C system, such as used in a boat, so it has to be converted to D/C before it can be used. This conversion to D/C takes place in the "output diodes" and in the "diode trio." Diodes have the property of allowing current to flow in only one direction, while blocking current flow in the other direction. The output diodes consist of six diodes, one pair for each winding. One of the pair is for the negative half cycle and the other for the positive half cycle.

Surprisingly enough, the output of the alternator is not a pure D/C as one might expect, but a pulsating D/C. Because there are three windings, each with a positive and a negative half, by the time the voltage is passed through the diodes, there are six pulsations for each rotation of the rotor. This is close enough to D/C for most components. Critical components, such as radios, have their own internal filtering circuits to further smooth out the waveform to a purer D/C.

DIODE TRIO... The diode trio consists, as the name suggests, of three diodes, one per phase, which provides field current to the alternator regulator. This output will be discussed in more detail later in the "field current supply" section... Continued on next page...

LAY A HOLD: To put the helm down and come near to the wind, To luff, to come closer to the wind.

WEEDING: Clearing the rigging of any temporary or unnecessary lines, stops and so on.

REGULATOR... The regulator has two inputs and one output. The inputs are the field current supply and the control voltage input, and the output is the field current to the rotor. The regulator uses the control voltage input to control the amount of field current input that is allowed to pass through to the rotor winding. If the battery voltage drops, the regulator senses this, by means of the connection to the battery, and allows more of the field current input to reach the rotor, which increases the magnetic field strength, which ultimately increases the voltage output of the alternator. Conversely, if the battery voltage goes up, less field current goes through the rotor windings, and the output voltage is reduced.

FIELD CURRENT SUPPLY... Field current supply is provided from two different sources - from the alternator itself, via the diode trio, and from the battery, via the alternator warning lamp. When you first start the engine and turn the key on, the engine is not running and the alternator is not spinning. At this time, the voltage/current source for the field current is from the battery, through the ignition switch, and through the warning lamp. After the engine is started, and the alternator is up to speed, the output of the diode trio is fed back to the regulator, and serves as a source of current for the field current. At this time, the alternator is self sustaining, and the battery is no longer needed to power the electrical system.

WARNING!!! This is theoretical only - in actual practice, the voltage surges resulting from disconnecting the battery can seriously damage the regulator circuitry. All alternator manufacturers strongly advise NOT doing this! This test will not prove the functionality of the alternator anyway, as the engine may still run with a weak alternator output.

WARNING LAMP... This brings us back full circle to the starting point - the alternator warning lamp. There is a path to ground from the field current supply input to the regulator. As a result, when the key is turned on, current flows through the warning lamp, through the resistors, transistors, and field coil, and then to ground, causing the lamp to illuminate. Once the alternator is at full output, voltage from the diode trio, also applied, equals the battery voltage. At this time, with 12 volts on both sides, the lamp is out.

If the alternator should fail, voltage from the diode trio would drop, and once again the lamp would light from the battery voltage. If the alternator output is only a little low, the lamp will be dimly lit. If the alternator fails completely, and the output voltage goes to zero, the lamp will be lit at full brilliance. Conversely, if the battery should fail, and the battery voltage drops, with the output voltage of the alternator on one side and the low battery voltage on the other, the lamp will also light.

As stated earlier, if the light grows dimmer as the engine is revved up, it is because the alternator voltage is rising with the RPM, producing more voltage on the alternator side of the lamp. The closer the output voltage gets to the battery voltage, the dimmer the bulb becomes. By the same way, if the light gets brighter with increasing RPM, it is because as the alternator voltage increases, it is getting higher than the battery voltage. The higher the voltage with respect to the battery voltage, the greater the voltage difference across the lamp, and the brighter it gets.

SUMMATION... In summary, then, we can say that field current through the rotor coils produces a magnetic field, which is coupled over to the stator coils, producing an AC voltage. This AC voltage is converted by the output diodes into pulsating DC voltage, which charges the battery.

The field current is supplied from either the battery, via the warning lamp, or from the diode trio. The amount of field current allowed to pass through the regulator to the rotor, or field coil, is controlled by the voltage feedback from the battery.

And there you have it - the complete operation of an alternator in a nutshell. The next time you see the little red light, you will know exactly what it is trying to tell you. (So now know... Editor).

THE SAILINGS: Different ways in which the path of a ship at sea can be represented on paper, either graphically or by calculation.

In essence, what the sailings did in varying degrees of sophistication was to solve the problem, 'given the starting position, and the courses and distances sailed thereafter, find the final position'; or its converse 'given the present position and the destination, find the course and distance'. Today, these problems would generally be solved by plotting them out on a chart, but in the eighteenth century this was often done by trigonometry, using tables or Gunter's scales. (Thank goodness for G.P.S. Editor).

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RATLING DOWN: means to apply ratlines (foot & hand holds) to the rigging.