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February 2004

To all fellow Bobcat and Catalac sailors

This month's pre-season 'Meet and Eat' will be at midday on Saturday 21/February at "Osborne View" Hill Head Rd. Hill Head, Fareham, Hants.

We look forward to seeing as many of you as possible:
The venue at "Osborne View" is famous for it's panoramic views across the Solent towards Osborne House and the Isle of Wight. They offer an extensive range of home made cuisine. Excellent value main course meals from £4.95 to £10.95 plus specials board.
If you plan to attend, please let us know how many in your party, so we can reserve tables. You and friends are all welcome.

The second **'Meet and Eat' will be at midday on** Saturday 27/March to be held at Lymington details in next month's newsletter.

……

Many thanks again to the members who have sent stories with their cheques.
Those who have not sent their subs. by the end of this month will I am sure be at a loss when the newsletter fails to arrive.

Now is the time to send us your cheques/stories/articles please.

……

I am pleased to be able to report, the B.C.C.A. "For Sale and Wanted" section is really working well. Many of the articles offered for sale are being given new homes, both helping the seller to "clear the decks" and new owner to make savings by buying second hand.

If you have any articles for sale or are looking for some (little used) spares let us know. ED.

Many of you are asking questions with regard to general maintenance, ie Headlining, Condensation, and Electrics. In this month's newsletter we are fortunate to have the first chapters of an excellent article about marine electronics and I feel the answer to many of your questions. Many thanks to the member who wishes to be known as Sparky Marlin. ED.

……E.MAIL……..

Can you please forward this to "Pipers Dream"

<How do you heat both sides of a Catamaran>

Like you, I thought long and hard on how to solve the problem of pipes through the boat. I assume that your Eber is the 1kw version, which is not really man enough to do the whole boat anyway. I initially looked at the concept of 2 x 1kw ebers (one for each hull), however I quickly ruled this out because of cost, power requirements, and overall fit feasibility.

My requirements were:

Heat in the saloon,
Heat at the Galley,
Heat by the chart table,
Heat in the double cabin fwd,
Heat in the single cabin fwd,
(aft cabin gains heat from the galley area),
Combustion air from outside the living/sleeping areas, but not where it would be salt laden,
Exhaust max length abt 2m,
Minimise the hot air pipe lengths.

My solution is probably only suitable for the 9m as the layout of the other boats is different, but you may be able to modify it. I chose the **Airtronic D4 Eberspacher as it is the least power-hungry of this type of heater**, **and it could also drive five outlets**
(not something they readily admit to, as they would prefer you bought the next model up!).

I sited the heater unit in the locker at the front of the "U" bunk in the saloon. It is a very tight squeeze and some form of sound insulation between the mount, and the bulkhead is a good idea, cause your head is the other side of the bulkhead at night.

The exhaust unit is lead up to the top of the heater locker then through into the Stbd hull lockers, close to the bulkhead by the mast, then down vertically for abt a foot (within the locker, and then aft and down again (at @ 45degrees) to the exhaust fitting sited in the centre of the second locker up and exhausting out between the hulls (45 deg down/45deg aft).

The hot air pipes were much easier. One has to be open permanently, the others can be adjustable. From the heater unit I twinned the pipes within the heater locker and took one to port, and the other to stbd. The port side pipe comes out into the large locker on the port hull and then is split into two; the smaller is diverted upwards into the narrow top locker in the port hull, and then exits through the bulkhead through an outlet into the Fwd small cabin. The larger pipe goes downwards into the second locker up and is secured to the top of that locker, and led aft to an outlet in the midpoint of that locker (i.e. immediately opposite the sink). The stbd hoses are identical except there is another twin connection in the large locker which leads to an outlet on the stbd aft end of the "U" bunk pointing into the middle of the saloon.

The fuel has to be supplied from either your own main fuel tank or a separate fuel container. I did not fancy having to fill a small dedicated container, and was in the process of fitting a new fuel tank anyway (34 gallon fitted at the aft end of the stbd engine bay - custom made by Tek Tanks), so I added an extra outlet for the Eberspacher fuel. I was worried about this fuel line so I encased it inside another reinforced plastic pipe. This was lead through the engine bay and through the heads compartment at the hull/deck join, then down the water filling pipe until it could go through the bulkhead into the locker under the chart table, I then sited the fuel pump inside this locker (it is the noisiest part of the heater system so needs to be concealed as much as possible!) The fuel pipe and electricity cables from the pump were then encased in another plastic pipe and led through the bottom of the locker under the chart table, above the water tank, and then up through the lockers fairly close to the exhaust outlet and heater air outlet positions (but far enough away to be safe!!!) until it reached the larger locker, where it could be led across to the heater locker and connected to the heater.

Air to be heated is drawn from inside the boat via inlets on three sides of the heater locker - two on the inside of the "U" bunk, and one each through from the heater locker to the large lockers on the inside of the hulls.

My biggest problem was getting the combustion air from outside of the living/sleeping areas. I solved this by using the rectangular section vent pipe used by conventional home cooker hoods. I suck air from just to port of the helm (thus outside the living area, but protected from the elements) take a swan neck upwards within the steering box, and then down by the pulleys for the steering cable to go through 90 degs and through the bulkhead behind the ladder into the port hull (back of the ladder needs a slight mod to accept the pipe) through into the top of the second locker up and all the way through that locker to the fwd end of it where it goes up vertically to the large locker and then through another 90 deg towards the heating locker. I then change to the smaller diameter pipe supplied for combustion air and connect to the heater. One advantage of this set up is that it makes running the main power cables very easy as they can be attached to this inlet pipe and taken directly to the heater alongside this pipe.

If you are taking the fuel directly from your main fuel tank then there are a couple of things to consider. The heater fuel pipe is very small so debris could be a real problem, and you cannot just add fuel injector cleaner without considering the heater. I use a special filter for all fuel into the main tank, which filters debris nearly as finely as the engine filters, and will not allow water through. It takes longer to fill up, but we don't use that much fuel anyway so who cares. "Fuel Set" is an additive that is death to the bug, conditions the fuel, and is approved by Eber . I understand that soltran is also OK (although not officially approved) but I cannot vouch for it myself.

If you intend doing this yourself, two tips - get hold of a right angle drill with a 1/2" head, and get proper bi-metallic circular hole saws (cheapest source is Screw-fix) that cover all your requirements. Cheap hole saws will quickly burn your drill out (I wanted a new one anyway!)

Obviously this explanation is a bit complex, so if anyone wants to come and see it, I am only too happy to show it (Portsmouth area). I keep meaning to complete a series of photos and write it up properly.

Regards

Mark Blaydes.

Mark, I am sure "PIPERSDREAM" and many other owners will find your answer to the heating problem very helpful. I think the question and answer by members makes the newsletter more informative and interesting. Thank you. ED.

<<<<<<<<<<E.mail from "DOPO DOMANI" cl.9.157>>>>>>>>>

Peter
Many thanks,

We sympathise with the headlining replacement. We did ours a few years ago. We stripped it completely off. It was a nightmare getting rid of the denatured foam backing. Then we screwed vinyl covered panels in place, with vinyl glued directly onto the curved areas at the sides. It looks really good and has the advantage we can take the roof panels off for rewiring etc.

In three weeks time we are off racing in the Caribbean regattas on a 42 foot monomaran. This will be our third year. Some-one has to do it!

Regards
Richard & Carolyn

We all have our cross to bear…… if you don't fancy the long trip I am sure one or two of our members could be persuaded to help you out and offer to take your place, It's been snowing here today, Is there room for a deck hand? ED.

Hi Peter,
In reply to various articles in the last newsletter, it prompted me to make a few comments.

Condensation

Probably something that we would all like to do away with but on a boat it's a bit more difficult, we don't really have any say in the outside temperature that is the main cause of condensation. Window area's are the most effected although there isn't much that escapes the dampness. You can make a slight difference by placing a cover sheet over parts of the boat that you are most concerned about, I suppose you could call it a type of secondary double glazing ! try starting with the fore deck and see what difference it makes to the bottom of the bed area.
Inside the boat is another matter, removing the moisture from the air using a dehumidifier will help and you would probably get a shock at the amount of water that it removes, a friend of mine had to plumb his into the sink drain as the container wasn't big enough. The dehumidifier crystals do help in lockers etc but only remove a small portion of the moisture. A tedious task but regular wiping or mopping up the area's does help. Heating

is only part of the battle, if you are not in a marina with mains electric you will have to rely on a 12volt system probably gas or diesel and you are expecting rather a lot if you are trying to be free of condensation completely, if the heater is keeping you warm it is doing its job.
Last but not least I have fitted (glued) some square electrical trunking (conduit) under the windows as a type of guttering which collects the dripping condensation and stops it getting on to other parts.

Auto Pilots

I have used an autohelm 4000 for about 12 years now and have had very little trouble from it, I believe the new version has done away with the belt drive and is using bearings which hopefully is an improvement. If I was going globe trotting I would probably try a wind vane type ? but as with any downwind sailing, sailing with the wind dead astern is expecting rather a lot and it is probably better for the auto pilot and the yacht, if you set up on a broad reach and give the auto pilot more control, but there are quite a few alternatives ie, twin headsails etc which you need to try and experiment with.

the Yamaha 9.9 outboard

When first installed I had a problem when running at maximum revs, it tended to hic cup (or misfire) at about quarter of an hour intervals, and I to got no joy from the manufacturers and local dealers but after a couple of years it has now cleared its self and runs ok.
I don't know if dealers have equipment for testing engines similar to cars ! but I would have thought that it would be related to (coil, spark plugs or leads.) Or the (carburettor .) Of course the 9.9 is a 4 stroke and could have a valve problem ? you need to find some one who can test or change individual components, it sounds as though they just want to sell you a new engine. I did know the previous owner and don't think that the engine has been over worked possibly done less mileage then my own.
I have found the 9.9 a good work horse perhaps a little under powered but very economical, it let me down once when the bush went in the prop shaft and when I picked up some dirty fuel in St Peter Port.
Bob Freeman 8m Think Again.

It's tasty snack time
>>>"Elma McRae"<<<
Sailing Dish for the month is.

<u>Stir fry chicken noodles.</u>

You will need;
Chicken, breast is best and cut into small pieces or strips.
Vegetables, I usually use carrot, mange tout/sugar snap, baby sweetcorn, cabbage
Dried egg noodles, either medium or thin.
1 can/jar sauce, such as sweet & sour, black bean, teriyaki, lemon etc.
Olive oil, for frying.

This can be done using a frying pan but if you have a wok it is better as it cooks at a higher but more even heat.

Heat the oil in which ever pan you're using, add the chicken and fry until cooked through. Whilst the chicken is cooking, cook the noodles according to the instructions on the packet (they usually take about 4 minutes in boiling water), then strain them. Take the meat out of the pan and leave to one side but keep warm, leave the juices in the pan. Into the pan add the vegetables and fry. Don't cook them too much, it's better to leave them with a bit of crunch. Then put the chicken back into the pan, add the sauce and heat through. Add the noodles to the chicken mixture in the pan and cook until hot. Ready to serve.
Other meats can be used such as beef or pork. If you don't have a sauce to hand you can use Lee & Perrins, Marmite and some red wine, it tastes yummy. No noodles, no problem use rice or pasta.

The odd glass of red wine adds that little extra zest to most sauces. It goes without saying a good food and a bottle or two of wine are essential ingredients on any boat's wet locker.
"Cheers and bottoms up" ED.

Getting the Coupling Fixed

In port I looked at the damage. The coupler between the gearbox, the flexible plastic was split allowing the connecting halves to separate, the force broke the rear engine mounts too. (or visa versa).
Monday morning the lifeguard arrived and greeted me on his way to work as a local teacher.
two representatives from the lifeboats came too with a bill for towing me in. after coffee and a bottle of whisky the cost was reduced from 200 euros to 110. they took me into town to see the doctor as i needed an echo Doppler scans on my leg due after 3 months. (thrombosis).
the guy who i saw on Sunday told me he had arranged for a mechanic to call on me.
Monday après midi, I started to strip the damaged parts ready for the new yanmar engine mounts from power marine, Burleson and the flexible coupler from silette. the flexible drive had sheared and both rear engine mounts had collapsed. everything was rusted so I had to resulted to my wicks angle grinder, after using it on one 17mm bolt the disc was too small so it was a trip into town by bus to briccomarchee, rochefort. i couldn't find my spanners to undo the disc on my grinder so thought i might have to buy a new one. i bought 4 discs, 2x115mm n 2x125mm for 50 euro plus 3 high strength hacksaw blades. 14 euro. when i was dropped off outside briccomarchee, it didn't appear to be a bus stop. not knowing if the bus would stop if i just put my hand up, so i walked towards rochefort. beep! beep! and someone was tooting their horn to me. it was the doctor i had seen this morning to arrange my echo Doppler appointment for Tuesday at 1000. he drove me back to my boat at port sud and also showed me where the supermarket was, he has a small 18ft sail boat and was a commandant in the French navy until 20 years ago.
The Capitan of the harbour is a lady, a blonde, and her husband came to see me as he speaks anglais and she doesn't. tomorrow Michel, her husband is taking me to rochefort for my echo Doppler. he is the mayor of fouras, if there's one place to visit in France then make it this fouras. It's so peaceful and like the morbihan you can kayak, the problem for me is i can't speak any technical French, so i ordered my spares from marine power and silette. what a difference after France were courtesy is second nature, to being second class because you're now a customer in France.
internet connections in la belle francias are expensive or unusable. internet/cybernaut cafes cater mainly for games. there are too many firewalls to protect the computers from viruses.i have 3 emails ive been trying to send for 15 days. getting downloaded weather files is a problem too.it seems strange to me, maxsea is a French software program, yet there is no help in the help files to explain how you can connect from a mobile phone. in france the cheapest cost to use the internet if you knew the dialling code is 0.3 euro. i understand Spain is cheaper at just 0.06 euro after 2100.
Graham : ladybird of cornwall (Prout Snowgoose) on passage to the Med (July 03)

ps. what are you doing with the exchange rates. ive seen a fall of 0.16euro in the value of my supposedly strong pound. if you're staying in England please work harder to give me peace of mind.
if your joining me and thousands more like me, don't forget to switch off the lights when you leave.

Greaham : Ladybird of Cornwall Prout Snowgoose.
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This Electricity Stuff

You know how it happens, usually when you are young, and at school, you suddenly find something that just grabs your attention and becomes a burning interest that dictates your future career, or your lifelong hobby, or both. For some folks it could be a sport (Football, Rugby, Angling), for others cars, or whatever. For me, it was electricity. 'Ahh! Poor lad! How sad' I hear you saying. Don't be deceived. I had a healthy interest in the usual young man's things (girls, pop stars, etc.), and I found that I wasn't alone in the world. The newsagents were stuffed (at that time) with electronics hobbyist magazines: but in those times the subject matter wasn't called electronics, it was Ham Radio, or Electrical Projects, or some such title.

(Well? What was your 'thing'?)

Eventually, my interest led me to become an Engineer in electronics and telecommunications, then to lecturing at a further education college.

Now if, by any chance, you are one of the folk who just don't have a passion for pop music, or football, (or sailing), there must have been a time, when talking to an aficionado of the topic, that you felt completely at a loss. Then, to compound your embarrassment, you realized that they couldn't understand why you couldn't understand them, because they assumed that everyone must know what they know. It happens to me every time that I have to visit my doctor. Of course, it's just as bad the other way round, when the 'expert' suddenly realizes that a glazed expression has formed on their listener's countenance. The problem for them is how to continue without either making things worse, or sounding patronizing.

Where is all this waffle leading?

Well, I'm coming to that.

In my (relatively) newfound world of yotty friends, I keep coming across folks who want, or need, to mess about with their boat electrics. This is evidenced by the number of articles that are published in the mags, and letters asking for help.

However, those articles are usually written by the 'expert', who always appears to assume that everyone knows what they are talking about, (and no doubt many folks do), and then sometimes going into their subject so deeply that Fermats Last Theorem seems suddenly to have become a walkover. I suppose that you can't blame them really, after all they do have to sell the magazine.

So, with the approval of our Editor, I am going to attempt to write a few articles with the objective of de-mystifying electrics from your point of view as a fellow yotty.

You are also welcome to contribute.

1 - From Little Acorns

'Let's start from the very beginning, a very good place to start'.
That piece of plagiarism probably won't be my last, but at least it is good advice.

When considering the process of installing an electrical system into a small boat, then it is helpful to think things through from the beginning, even for a relatively simple system.

In the first instance, my guess is that we, (as yotties), probably concentrate on what we want to fit on board in the way of electrical gadgets. VHF radio, GPS, depth sounder, a few cabin lights etc,. Then we think about where to put all the gadgets and what is needed for wiring them to an electric supply.

This is not an unreasonable approach, and not to be poo-poo'd at. However, it is very easy to concentrate on the undoubted advantages offered by an onboard electrical system, and just as easy to ignore the monster that we propose to invite aboard.

HUH? What do you mean? MONSTER! I can be cagey about the 240 volt mains supply at home, but a 12 volt 'monster'?

See what I mean! We are taught that the domestic 240 volt mains supply is a hazard, and not to be treated lightly because it can deliver a fatal electric shock, so we take reasonable precautions.
The 12 volt supply as used on most boats, and most road vehicles, does not offer a shock hazard, but what it does do is to

INCREASE THE RISK OF STARTING A FIRE

Oh that! Aren't you being a bit of a scaremonger?

Yes, I am, because it can so easily happen, especially on a boat with its potentially wet environment, and a fire on a boat is one of the worst things that you can experience.

Come off it! How often do you hear about a boat fire? They must be as rare as ice cubes in hell.

Thankfully they are rare because most installations comply with the suggested guidelines, and are built into the boat during manufacture. However, the Department of Transport is worried enough to issue a Merchant Shipping Notice about it, and as you may know, small pleasure craft come into the category of Merchant shipping. If you have access to the Internet, go to:
www.mcga.gov.uk/msn/msn1557.pdf

(if you don't have Internet access, get in touch a friend who has and ask them to send you a copy).

So, before launching into a DIY project, your FIRST thought should be:

'HOW CAN YOU ARRANGE YOUR INSTALLATION SO AS TO REDUCE THE RISK OF FIRE TO A MINIMUM'

2 – Cause and Effect

OK then. What does cause an electrical fire?

The simple answer to this is that one of the effects of an electric current is to produce heat. Whenever an electric current flows through an electrical resistance then its energy will be converted (transformed) into heat. The higher the current, and the higher the electrical resistance, then the greater the amount of heat produced.
Under the 'wrong' conditions, an electric wire can glow red-hot, then it becomes a hazard. Under the 'right' conditions, the effect becomes useful, as in a light bulb, or a heater.

I suppose I knew that already. So, what can we do about it?

Well, we can't stop the heat from being produced; after all it is a natural effect. What we can do is to design the installation so that:-

1. The resistance of all circuits is as low as practical.
2. We guard against excessive current.
3. Any part of an installation is not against, or close to, anything that could easily catch fire.
4. All parts of the installation are protected from physical damage.

That all sounds rather vague and technical. What exactly does it mean?

It's not as bad as it sounds, and there's lots of help an Engineers) have sorted most of the problems, all that is except for the hard bit, which is actually putting the kit into the boat.

Anyway, there's another advantage to all of this, you will finish up with an efficient system, so your battery will last longer and your gadgets will perform properly.

Tell you what, we'll take a closer look at that list, and sort out exactly what each item means in practice.

Is that OK for you? Good.

3 – Go with the Flow

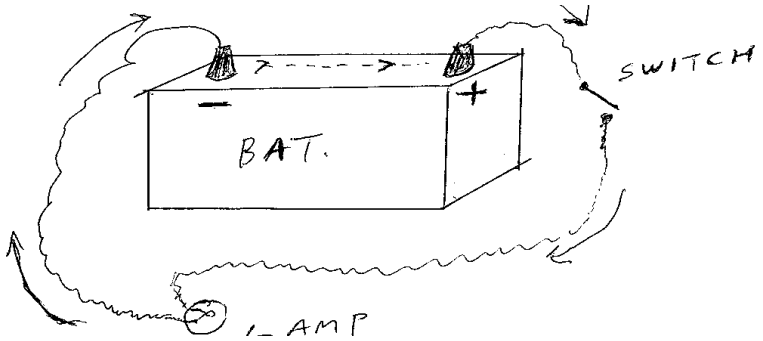
Remind me why they are call 'circuits' when it's clear to me that the cable goes from one place to another, and not round in a circle?

Well, there are usually two wires in a cable. One wire is for carrying the current from the supply to the appliance, (e.g., from a battery to a lamp), while the other wire is for taking the current back to the supply. We name the two terminals of the supply the Positive (+), and the Negative (-). Positive is the 'go', Negative is the 'return'.

Ah! I remember now. That's why the wires are usually coloured! Red is for the Positive, and Black is for the Negative.

You've got it! However, what most folks forget is that the current not only flows through the wires and the lamp, but it also flows through the supply to complete the 'circuit', otherwise the flow won't be continuous.

Let me make a sketch showing a battery, switch, and a lamp. When the switch is closed it will complete the circuit so that the lamp lights.



I've drawn in some arrows to show the path of the current.

Yes, we did that sort of thing when I was at school. The positive volts flow through to the negative volts.

Ah! That's another misconception. Volts don't flow; they simply push. It's the current that flows, and we measure current in Amperes or Amps for short.

But what puzzles me is why doesn't a current flow inside the battery from its Positive to its Negative?

Yes, it does seem odd, but the battery does what it does by 'forcing' its (+) terminal go to a higher Electric Potential than its (-) terminal. When current flows in the external part of the circuit, the (+) side looses energy to the lamp, so the battery has to keep 'pumping up' the (+) side in order to maintain the Potential Difference (Voltage) between the (+) and the (-) sides. The current carries the energy away from the battery to the rest of the circuit. This process carries on until the battery runs out of energy, and that's why the battery discharges while it's in use.

OK. I'll believe you.

Well members, that's the easy bit, the more advanced will be continued next month. ED.