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FOR SALE AND WANTED

WANTED.....hi peter this is my first go at e-mail so i hope it works,
could you put a add in the news letter for A sonic leg for a 9meter catalac
tel 01934631925 many thanks ray badman [kiskadee]

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For sale:- 9.9 yamaha outboard 4 stroke.
extra long leg with all equipment to fit 8metre catalac.
The engine has been sevised professionally annually, and is a very reliable engine.
Change due to new deisel inboard installation.
Contact Roger Smith (01329)236546.

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For sale..... One 25lb. Danforth anchor good condition£25.00

One stainless steel, five spoke, 15inch diameter steering wheel in excellent condition.
Contact John Green Tel: 02392 462502 Mobile: 07979 001153.

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

Crowdie Cream

You will need;
10oz pot double cream
Raspberries about 4or5 oz
2or3 tbsp clear honey
2or3tbsp malt whisky
2or3 tbsp toasted oats.

*Whisk the cream until thick, then fold in the honey and whisky, **tasting at this stage is very crucial but remember, there can never be too much whisky!** Stir in the raspberries, crushing some as you do, reserve some for decoration. Put the mixture into serving dishes (I use either wine goblets or whisky glasses) and chill. Before serving top with the oats and decorate with the rest of the raspberries.*
Enjoy.

The more tastes the merrier. "Cheers and bottoms up" ED.

Sea Read.

Before I met Toni, the nearest I got to a boat was watching Howard's Way on a Sunday night from the comfort of my living room and that, at that time, was as close as I was prepared to go. I had never considered sailing or boating as a hobby or pastime. I, like so many others had a preconceived idea that yachts were large, expensive and only for the rich and idle. On meeting Toni, my views and opinions were up ended, for he was not rich and not (too) idle but he did own a yacht, a Leisure 23 to be precise.

I remember the first time I went aboard. Inside was bijou and compact, but outside looking from the blunt end to the pointy end seemed an awful long way away. We spent a great deal of time on the 23, sailing around Essex but I can count on two fingers the precise amount of times I actually took the helm. Toni would try all manner of things to try to get me interested in his 'Waggle Stick', but I'd have none of it. I was too conscious that our relationship was still in the early stages, too early to survive his pride and joy being bent or, worse still, broken by me, a complete novice.

My contribution to our time onboard was more meal time than maritime. I love cooking and the challenge of two rings, small oven and half hearted grill was one I couldn't pass on. The art of cooking, according to my dear old Dad (a baker), is having the talent and imagination to conceal the disasters, present them as masterpieces and all with the air of 'I meant it to look and taste like that'. Over the years I have had many occasions in which to perfect this 'art'. I, like so many who share my interest, have shelves upon shelves of cook books, filled with exotic and mouth watering concoctions. But when you read down the recipes you soon realize how incompatible the majority of them are with the cooking facilities on board. I believe that Dads adage should also include the ability to change and adapt to the conditions prevalent at the time of cooking.

As we're now living aboard, as opposed to weekends or the odd two weeks, the galley is stocked accordingly. Cakes, scones, bread, biscuits, pies and sweets are all now within my repertoire. Mind you I still have disasters which I blame on the non regulative oven! I don't know what excuse I'll be able to use once the new oven is installed, suggestions please?

Round Essex, we often sailed in the company of others and I noticed something which appeared to be a common occurrence on all the boats within the flotilla. Nearing a Marina or mooring for the night, you would see a lonely figure carefully picking her way forward, distributing fenders and attaching lines with precision. Look back towards the cockpit and you would see illuminated against the lowering sun, her partner/husband, gin and tonic in one hand, helm in the other, bellowing orders and shouting instructions.

Since then I have seen this scenario many times, but why? I know that due to superstition, many years ago back in the dark ages, before the days of Claire Francis, women were not allowed within fifty feet of a ship and that boats and all they entailed were the province of men, whether for war or profit. But surely we have moved on from there? In these days of equality and girl power is it too much to ask for an even division, for both parties to 'take their turn'? Even the Royal Navy has allowed women within their hallowed ranks. Of course some may want and prefer to take a back seat, to remain a Mooring Line Moll and a Saucepan Susie and let their male partner take the lead. If this is the case then so be it, good for you, enjoy.

But what happens in a crisis, when your hubby/skipper has gone overboard or becomes incapacitated and you are required to take command? Can you? Do you have the confidence? More importantly do you have the knowledge and skills to bring yourself, the crew and the boat back to safety?

Think about it.

I did, which is why I looked around for a sailing school which would teach and equip me with the necessary skills and confidence. I am proud to say that I hold the RYA Day Skipper certificate, both theory and practical, and that I am able to helm and navigate Pipers Dream with or without Toni's assistance.

The Day Skipper can be studied at night school but as this is over quite a few weeks, I opted for the more intense option, two full weeks, the theory in January and the practical a few weeks later in March. The advantages in doing it this way were; the classes were much smaller, only three including myself, which meant that if you found yourself floundering the lecturer had plenty of time to assist; you didn't forget from one lesson to the next what you had learnt, easier to remember as there is no break between. The main disadvantage could be the cost even though some schools offer a discount if both the theory and practical are booked at the same time, the price is steep. But what price you or your loved one's life?

Until next time.

Fender floozy.

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continued from last month.

This Electricity Stuff

4 - Powerful Stuff

So then. If the wire filament inside a lamp gets hot enough to glow, why doesn't the circuit wire do the same?

Good point. The simple answer is that the lamp is designed to have a higher electrical resistance, whereas the circuit wire is designed to have a lower resistance.

Then there's the matter of Power.

Ah! I've heard of that, it's in Watts isn't it?

That's right, or another way of looking at it is: Watts = Volts x Amps.

I thought there'd be some maths in here somewhere!

'Fraid so. Let's take an example. Suppose that we want to fit a simple 12-volt battery, and a cabin lamp. The lamp will probably be rated at something like 12 Volts, 20 Watts.

So, the lamp needs: $\frac{\text{Watts}}{\text{Volts}} = \frac{20}{12} = 1.67 \text{ Amps.}$

From Ohms Law, the lamps resistance will be: $\frac{\text{Volts}}{\text{Amps}} = \frac{12}{1.67} = 7.19 \text{ Ohms.}$

Now, let's suppose that the two feeder wires have a resistance of 1 Ohm each, and the battery has a resistance of 1/100 (0.01) Ohm.

For a series circuit, as in the example, we find the total circuit resistance by adding all of the individual resistances together, which gives us 9.2 Ohms.

To find the actual current flow, we use $\frac{\text{Volts}}{\text{Ohms}} = \frac{12}{9.2} = 1.3 \text{ Amps.}$

Notice that the circuit current is now 0.37A less than the current needed for the lamp. The lamp won't be as bright as you'd hoped for.

So where's the missing current gone?

Actually, there isn't any missing current, but there is some missing voltage!

The resistance of the wires is limiting the current, and at the same time causing a Volts Drop along their length. It's this voltage that's missing from the lamp.

The voltage across the lamp becomes:

Volts = Amps \times Ohms = $1.3 \times 7.19 = 9.35V$, instead of 12V

The actual power of the lamp is now $9.35 \times 1.1.3 = 12.2W$ instead of the expected 20W.

The power lost in the wires due to the volts drop will be: Amps(2) \times Ohms= $1.3(2)\times 2=3.38W$

So the wires are warming up a bit.

5 - Irresistible Force, Immovable Object

It seems to me that this 'electrical resistance' in the wires is a bit of a nuisance. Can't we get rid of it?

'Fraid not old chum. From a practical point of view every wire, termination, switch contact, connection point, fuse, and gadget will have some resistance. Why, even so-called insulation is really a very high resistance material, and when we open a switch contact all that we are doing is inserting a high resistance air gap. So you see, resistance has its uses as well.

Its name seems to be self-explanatory, but what exactly is it?

The property that we call Electrical Resistance was first 'discovered' by a Mr Ohm, hence the name of the unit. He gave us the much quoted 'Ohms Law', which basically says that when an electric current flows round a given circuit, the higher the applied voltage is then the higher the current will be. The ratio of Volts to Amps is the resistance of the circuit.

Ohms Law is often shown as an equation:

Ohms = $\frac{\text{Volts}}{\text{Amps}}$ which we can re-arrange to give:

Amps = $\frac{\text{Volts}}{\text{Ohms}}$ or Volts = Amps \times Ohms

I see! So, if I remember my maths, if we decrease the Volts, or increase the Amps, then we can make the Ohms smaller. Problem solved!

Ah, no. This is a non-commutative equation; it works one way but not the other. Years of research have shown that Resistance is not dependent on voltage or current, but upon the circuits material, length, and cross-section area. So, you see, all that we can do is to arrange so that the wires are made of very good conductive material, are kept short, and have a large cross-section.

The best conductive wires that we could use are Gold, Silver, or Platinum, need I say more? So, as a reasonable affordable alternative we use Copper. Wires are made of other materials, (e.g. Aluminium), but although they are a tad cheaper, they're not as good as copper.

Similarly, we could use an enormously thick wire, but could we handle it? (Or afford it?) So, we use the thickest wire that does the job.

As for the length involved, we only have a limited choice here, but careful consideration can make the run as short as possible.

6 - The Thick and the Thin of it

So why do they make cables that have two, or more, wires inside a common covering, when separate wires will do the trick just as well?

Of course, you can use separate wires, and they are available in a variety of colours, as well as red and black. Having two, or more, wires enclosed in a common cable sheath simply makes installation less work.

The cable sheath does three jobs. It is made of a fire-resistant material, protects the wires and insulation against physical damage, and keeps the wires of a circuit together. However, the manufacturer has no control over the environment where the cable is installed, that's why they put a sheath over the insulation of single wires, as well as over multi-wires.

That makes sense.

Now, I know that wires are made in different thicknesses, and that some are solid-cored, some are stranded, and some are tinned. Some are even made out of metal other than copper. How is a chap supposed to make a simple choice from what's available?

Horses for courses, old chum. All those different wire types are made available by the manufacturers to cater for a wide variety of applications, that's why electrical engineers are paid. For our purposes though, we can considerably narrow the choice down. On most boats, you won't be installing any long lengths of wire, and by long, I mean several hundred yards. You probably won't require specially armoured cable, neither will you be using a high voltage supply. All that we need to concern ourselves with is finding wires that have a fire resistant covering, a fairly low electrical resistance, and are not too difficult to install.

The first point is already catered for, just about every wire made for carrying a fairly high current will have a fire resistant sheath.

The second point means that you should choose copper wire that is as thick as you can handle in order to keep its electrical resistance low, which brings us to the third point.

Ease of installation. That includes things like pulling it through narrow spaces, getting it to bend around corners, and will it be relatively easy to terminate. Don't forget that the equipment terminations will

have to be able to accept the wires thickness. In most cases, you'll find that a multi-stranded wire will be better than a solid core wire, with the added advantage that it will 'give' as the boat flexes whilst sailing, or withstand vibration when motoring. Mind you, multi-strand wire will be somewhat thicker than an equivalent solid wire, but that shouldn't be too much of a problem.

A chap I know used ordinary house cable on his boat. Is that acceptable?

Yes, provided that the cable used is at least 1.5mm(2) per wire, and preferably 2.5mm(2). His is probably a solid core cable, twin and earth, so it may give some problems by breaking off as it flexes, especially where it is terminated. I bet it was a pig to install as well.

Much better to go to a car spares shop, and buy the sort of wire used in car wiring harnesses. It's available in a variety of thicknesses, is usually marked with its practical current-carrying capacity, and has the recommended fire resistant insulation.

7 - Hot Diggardy

It's late afternoon, you're sailing along on a comfortable broad reach with a mile or so to go, then the breeze dies. A bit anxious to get to your mooring before sunset, you start the motor. Now there's lots of vibration causing things below decks to rattle and shake. One of your cabin lamp connections falls off and comes to rest against the other. You now have what is known as a Short-Circuit.

Nothing happens 'till you try to turn on the lamp.

Soon after the switch contacts close you notice two things:

1. There is no light.
2. There is a smell of hot plastic filling the cabin.

Oh dear! You haven't fitted a high current protector into your lighting installation. You try to switch the current off, but the switch contacts are now hot enough to be welded together. Undaunted, you think of disconnecting the battery terminals, but by the time that you've found the clamp spanner and opened the battery box you realize that you may have a fire onboard.

Looking back to our example circuit, this is what happens from the electrical point of view. The only resistance offered to the current consists of 2.00 Ohms in the wiring plus a niggardly 0.01 Ohm in the battery, giving a total circuit resistance of 2.01 Ohms.

The circuit current is: $\frac{\text{Volts}}{\text{Ohms}} = \frac{12}{2.01} = 6 \text{ Amps.}$

The heat power in the wires is --- $\text{Amps}^2 \times \text{Ohms} = 36 \times 2.01 = 72 \text{ Watts}$

There is also just over one third of a watt causing the battery to fizz, so with hydrogen gas, oxygen, and hot wires you now have a potential explosive situation.

So what your saying is that if a fuse had been fitted, then the fuse will blow, so breaking the circuit.

Obvious, isn't it. But I'll tell you this, there are a few folks who do have fuse holders fitted, but because they don't have any spare fuse cartridges they put a piece of silver paper into the fuse holder and hope that everything will be alright.

Then they forget about it.

Now, is that asking for trouble, or is that asking for trouble?

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