

Ferro News

March 2000 Quarterly Newsletter for Ferrocement Boat Owners

Issue 13

Welcome again fellow ferros. Issue 13! I have enjoyed, putting together the last 13 issues, the letters from our keen and valuable contributors, the new friends I've made, and the valuable knowledge each of you have contributed to the Ferrocement cause. But I feel that over the past few issues I haven't put the effort into writing and collecting material that you all deserve. This has resulted from our growing commitments for time, on the boat, our house, my job, and new business ventures. I feel that at the end of this subscription period (September) I will need to reduce my responsibilities in Ferro News. You all would agree with me that it would be a shame to see it die. So I'm looking for anyone who would like to inject some energy and take over publishing the newsletter and managing the subscriptions. But being keen to see it live on, I would be happy to continue to

manage the subscriptions, print the envelopes, and perhaps find more time to write some ferro articles.

If it helps a volunteer to come forward, the commitment could be for one year only, that is, only 4 issues, then you could pass the job on!

SAVE FERRO NEWS

Please contact me if you are interested or have any suggestions.

On a more positive note preparations continue for our planned move to Darwin next year, to get away from the southern rat race. But that is still along way off yet!

Welcome to the new members and I hope you'll see many more issues of FN.

Cold Thoughts on The Fridge

by Bev and Darrel Westlund S/V Bevarel

A point of view that may interest some; The refrigeration plant originally fitted to Bevarel was as is on a great number of yachts eutectic plates with an automotive aircon compressor off the engine, an idea that did not impress me, for the following reasons, These compressors are not designed for low temperature use and should not be left running at low suction pressures. There is also the inconvenience of regularly running the engine at low load. When shore power is available the motor still has to be operated. Another downside is the flexible lines required and the shaft seal which are all potential sources for refrigerant leaks. On the positive side they do have huge capacity and while operating can give good service, with occasional belt changes, But as you may have gathered I don't particularly like them. So the auto compressor was discarded. To replace this belt flapping monster we fitted a standard 220volt AC Sealed compressor tucked neatly out of the way in a previously unused spot (if there is such a thing on a yacht). We then fitted a 1200 watt inverter (a 600watt would have done but it was thought we may later want power for something else) The inverter easily operates the electric compressor and still only needs to be run twice a day to maintain the eutectic tanks. Batteries are recharged by solar panels and when ever the motor is used. A major plus for this system is when in the Marina or where shore power is available you run as required or fit a timer to keep the eutectic tanks silently frozen. We are very happy with this set up even though it is not complete as the intention was to have two 80watt solar panels and a wind generator. To date the wind generator has not been purchased and we rely on times of motoring to top up the 200amp hour storage batteries when the solar can not keep up. My system is air cooled but could easily be converted to water which would probably be more efficient and compact. Whenever motoring the fridge can be left running as the batteries still take a charge as well as running the fridge, This gets the eutectic tanks well down and batteries fully charged. This is by no means the end of my experiments on this topic but is the best result to date.



Regards to all Members Bev & Darrell

Whats On ...

CONCRETE REPAIR FROM MASTER BUILDERS
MYSTERY CAN ALMOST SEE THE WATER
KEITH'S PRACTICAL TIPS

2
5
8

Master Builders EMACO S88C

EMACO S88C (Thixotropic)

Shrinkage compensated repair mortar

DESCRIPTION Emaco S88C is a ready-to-use, high strength repair mortar. Mixed with water, it provides a rheoplastic, non-segregating, thixotropic mortar with high bond to steel and concrete.

Emaco S88C is synthetic fibre reinforced. It does not contain metallic aggregate and is free of chlorides.

RECOMMENDED FOR

Emaco S88C is recommended for repairs needing mortar layers up to 40mm in thickness.

- Maintenance works at ports or sea-areas.
- Maintenance works at mechanical industries, especially in conditions where mineral oils, lubricants, etc. are present.
- Protection of concrete against aggressive waters containing sulphates, sulphides, chlorides, etc.
- Repair of damaged concrete members.
- Repair of concrete members subjected to repetitive stresses.
- Repair of structural members (reinforced or pre-stressed beams under normal or eccentric stress).
- Vertical, overhead and horizontal applications.

FEATURES & BENEFITS

- *Economical.*
- *Durable.*
- *Highly impermeable.*
- *Ready-to-use.*
- *Shrinkage compensated.*
- *Sprayable.*
- *Sulphate resistant.*
- *Excellent workability.*
- *No added chloride.*
- *Contains non-corroding synthetic fibres.*
- *High early and final strengths.*
- *Favourable E-Modulus.*

Emaco S88C is a ready-to-use powder that merely has to be mixed with water to yield an easily workable, shrinkage compensating repair mortar. Emaco S88C is resistant to aggressive environmental elements such as sea water, carbon dioxide, air pollution etc.

Emaco S88C mortar is shrinkage compensated both in the plastic and in the hardened state. It is impermeable and extremely durable even in aggressive conditions.

By virtue of its uniformly dispersed synthetic fibres, Emaco S88C

	1 Day	28 Days
Compressive Strength	30 MPa	70 MPa
Flexural strength	4.5 MPa	8 MPa
E-Modulus		30 GPa
Bond to concrete		>3.0 MPa
to steel (smooth)		4 MPa
(deformed)		30 MPa

can be either sprayed or trowelled

also overhead sections.

PERFORMANCE DATA (Typical)

Supply form	powder
Water added per bag (20kg)	3.0 - 3.4 litres
Colour	grey
Specific Gravity (mixed)	approx. 2.2
Storage temperature	moderate
Application temperature	not below 5°C
Effect of humidity	same as cement
Physiological effects	same as cement
Toxicity	non-toxic

Cumulative volume

of pores of Emaco S88C Thixotropic, (measured by mercury porosimeter), compared with that of ordinary mortar having same flow.

SPECIFICATIONS

TEST REPORTS

Test reports on the above data are available upon request.

APPLICATION DIRECTIONS

Substrate Condition

Surfaces to which Emaco S88C mortar are applied, should be clean sound and free of dust or loose particles.

Cement laitance, oil, grease, mould release oil or curing compound must be removed from concrete surfaces by using high

pressure water jetting (1100-2500 Bar), or bush hammer, scabber, gritblasting or other approved means. Cut edges of recess

or crack vertically, to a depth of at least 10mm. This step is very important as Emaco S88C needs a rough surface to achieve maximum grip.

All absorbent substrate surfaces must be thoroughly wetted down to saturate all pores. During application, the temperature of the substrate should not be below 5

°C.

If the mortar must be thicker than 25mm, anchor welded wire reinforcement to the concrete to be treated leaving space between

the mesh and the surface. The successive cover of Emaco S88C over reinforcement must be at least 10mm thick. If application thickness is less than 25mm, no mesh is needed, provided that the surface has been roughened with ridges of approximately 5mm in height, in order to provide the needed restraint to the mortar expansion.

Mixing

Pour minimum required water into a suitable mixer and add Emaco S88C rapidly and continuously while mixing. Mix for 3-4 minutes or until a lump free, homogeneous mortar is obtained. Add extra water, if necessary, until the required consistency is obtained and mix again for 2 - 3 minutes.

The amount of water to be added is highly dependent on ambient

onto horizontal, vertical and

(Continued on page 3)

temperature and relative humidity. In hot and dry climates, slightly higher amounts of water may be necessary, the contrary in cold and humid climates.

Priming

No special primer is required. To obtain extra strong bonding, the damp substrate can be primed with a slurry brush coat of **Emaco S88C** (2 parts of powder to 1 part of water).

Method of use

Emaco S88C can either be sprayed or trowelled. If necessary, a wooden float may be used to level the surface. The final surface may be smoothed as desired by a wooden, plastic or synthetic sponge trowel.

Trowelling after the spray application may start only when the mortar has set, that is, when fingers do not sink beneath the surface, but mark it lightly.

Tools

Mixing: by low speed drill with suitable helical paddle (jiffy) or by pan mixer.

Hand mixing of **Emaco S88C** is not recommended to avoid the introduction of excessive amounts of water.

Applic.: by trowel, float or spatula, wet sprayer (worm gear type).

Finish : wood or steel trowel; plastic sponge trowel for very smooth texture.

POT LIFE

Consistency = 45% flow at flow table ASTM C-230 5 drops.

In normal ambient conditions, even without traditional curing, **Emaco S88C** will not craze or crack due to plastic shrinkage, as often occurs with mortars which are not protected adequately in the first 24 hours of curing.

Cover with plastic sheet for 24hrs or apply MBT **Mastercure 402** liberally to surface to achieve optimum results. Do not immerse in water to cure.

CLEANING

Emaco S88C is a cementitious product. Tools should be cleaned with water before the material hardens.

SHELF LIFE

Emaco S88C can be stored in tightly sealed original bags for 12 months, if kept dry and at moderate temperature.

PACKAGING

Emaco S88C is available in 20kg moisture resistant bags.

PRECAUTIONS

Do not use **Emaco S88C** thixotropic mortar

- For precision grouting, use Masterflow 880 Grout or Masterflow 870 Grout.

- In contact with water with pH less than 5.5.

Emaco S88C contains non toxic, non mineral fibres which are not a known health hazard. As with other products containing portland cement it has an alkaline nature and thus can be irritating to skin and eyes. Wear simple dust masks, goggles and gloves when handling. Wash off splashes of mortar with clean water. If irritation persists seek medical advice. For full safety and first aid instructions, refer to the product Material Safety Data sheet.

Temperature	Setting times (hrs) of Emaco S88C	
°C	Initial	Final
5	2.00	3.00
20	1.45	2.45
40	1.00	2.00

Temperature Setting times (hrs) of
Emaco S88C °C

ESTIMATING DATA


A 20kg bag of **Emaco S88C** mixed with 3.2 litres of water yields

10.5 litres (0.0105m³)

), therefore material requirement is

19.1kg/m² at 10mm thickness.

CURING

MBT (Australia) Pty. Limited			
Incorporated in NSW	A.C.N. 000 450 288	Newcastle	(02) 4961 3819
Head Office:		Canberra	(02) 6280 6010
11 Stanton Road	Phone: (02) 9624 4200	Brisbane	(07) 3265 6611
Seven Hills, NSW 2147	Fax: (02) 9624 7681	Townsville	(07) 4774 7344
		Cairns	(07) 4033 0624
		Melbourne	(03) 9569 4855
		Tasmania	(0412) 392 397
MBT (New Zealand)			
Head Office:		PO Box 19-450	Phone: (09) 828 2006
138 St Georges Road		Avondale, Auckland	Fax: (09) 828 6087
Avondale, Auckland		Building Tomorrow Together	
			

Easy Furler Operation *by Keith Fleming S/V Zodiac*

Most cruisers are short handed so one of the most essential pieces of equipment on board the yacht is the headsailfurler. This means that the sail is permanently furled up on deck and leaves more room down below. The real big plus is that you don't have to go forward in foul weather and wrestle wet sails onto the deck and spend time tying them to the rails. The energy conserved by just pulling a rope in the comfort of the cockpit has many spin offs in relation to sea sickness, fatigue and general well being. But not all furlers are fool proof. Many that are not fitted with a guard and will often throw a loop that will fall down below the spool. This will effectively make the furler inoperable. This may happen at any time and in particular when running, when the headsail is blanketed by the main and the spool begins to work backwards and forwards. A sudden wind change may make it imperative to quickly furl the headsail. Like a dragging anchor, if it happens once it will happen again, so fix it. On a recent trip I saw an excellent example on a yacht at Coffs Harbour would certainly prevent any loops from falling off the spool. A close look at the photo will give you an idea of how it works. The shield is a springy stainless piece with pvc tube pieces riveted on each end to take the wear of the rope. The shield is bolted to the vertical upright at the front. On speaking to the skipper he affirmed that it had never given him any trouble. Any good engineer could make one.

READERS: What would you look for if you were surveying a ferrocement boat? Send me your thoughts for the next issue

Smoke Detectors

by Keith Fleming S/V Zodiac

We all have smoke detectors fitted in our houses so why not fit them in the boat? Because they are so portable you could just place them in various parts

of the boat to see if the cooking fumes affects them. And why not the engine room? The first indication of a failure of the raw water pump is clouds of smoke as something starts burning. Perhaps one fitted in the engine room would bring this problem to your attention just that few seconds earlier that might make the difference to either the damage or in

Second Hand Steel

by Keith Fleming S/V Zodiac

Many first time cruisers seem to think that by buying a second hand steel boat it will last a long time. This is often the case but there are many that suffer from rust. Rust that is not apparent from the outside. A coat of paint can cover a lot of problems but what you need to know is that steel boats rust out from the inside, so it is not apparent from the outside. If buying a steel boat you need to be very particular in your inspection inside the hull. That means pulling up the floor boards and with a bright light inspecting all the steel and welds. If that area passes the test then the next inspection place is the anchor well. Remove ALL the chain and once again inspect closely with a bright light. When that passes the test then there is one more test and that is when you have lifted the boat from the water to go around the under water part with a wooden mallet and tap the steel all over to see that there is no thin parts down low in the keel. The thin bits will make a different sound. If all is well then you will have a sound hull. There are very few steel racing boats so the chances are that any steel hull you examine will be to a cruising design.

Raw Water

by Keith Fleming S/V Zodiac

Most yachts the first indication you get of a raw water pump failure is volumes of smoke and steam rising from the companion way. This is bad news because it usually indicates that the water trap, which is often made from nylon, has melted and collapsed. Not only do you have to replace the pump impeller but also the water trap, and you are not going to be able to do that at sea. One way of avoiding this problem is to have a temperature sensor attached to the exhaust where the cooling water enters. As soon as the water ceases to flow it will set off a loud alarm and you will be able to shut down the engine before any damage is done.

The Real Work Begins *by Doug Wallace S/V Mystery*



At last I am retired and can devote all my time and energy to getting *Mystery* back in the water. After giving myself a well earned months holiday in January I started by sorting out all my tools, sharpened all the chisels, planes, drill bits, tidied up my work bench then started on *Mystery*. I emptied all the accumulated tools, dirty rags, timber offcuts, laminex offcuts, vinyl offcuts, sawdust, paint flakes and bottle tops out. Next I swept all the dust and spider webs into the bilge and vacuumed it out. Lastly on a hot windy day I opened all the hatches and windows and took a hose aboard to wash every speck of dirt out of the lockers, shelves and storage bins. When the water was ankle deep I pumped it out with the bilge pump. While the hose was going I topped up the water tanks. The spiders were ruthlessly murdered with insect spray. My first job was to scrub all the powdery weathered paint off the cabin and dodger and repaint with white Sigmacover (a two part epoxy) I sprinkled nylon granule anti-skid on and rolled it in. The nylon granules look like sugar and are not as sharp and abrasive as sand. A giant BBQ salt shaker is perfect for applying it. I did consider adding a little bit of tint to take the harsh glare off the white, but decided to go pure white for maximum coolness in the tropics and just wear darker sunglasses. Next I repainted the deck, same paint but tinted pale blue. Later I will tint some light grey and do the timber around the windows and the gunwales.

Raising the mast.

When *Mystery* came out the water 6 years ago I took the mast down and completely renovated it. All the fittings were removed and the rectangular hollow box section mast was sanded back to bare timber, pink primed, undercoated and high glossed. The steel mast cap, spreader brackets and lower stay tangs were sent away for sand blasting and hot dip galvanising. One spreader was split so I made a new pair from Tasmanian oak. While I was at it I routed the bottom of the wider in-board ends of the spreaders to insert a pair of stainless steel flush mounted

lights for deck lighting. I fabricated a new mast heel and step from stainless steel to replace the old rusty mild steel original one. Last week I took the mast down from under the verandah, hosed 6 years dust off it and bolted all the fittings back on. There is a new tricolour nav light and a white 360 degree anchor light on the cap and a new V.H.F. aerial. When I mounted the stainless steel mast steps, I used 1/4" allthread right through the mast so there is no chance of them coming loose. The hollow wooden mast has solid timber blocking at both ends and in the middle where the spreaders go so all the wires and halyards are external. The electrical wiring (all fully tinned) is run in P.V.C. conduit and fixed to the mast every 250mm with saddles made from 15mm wide strips of stainless steel sheet. The saddles also clamp the low loss V.H.F. coaxial cable. I renewed all the rigging with 5/16" galv wire. The forestay and cap shrouds were fitted with new turnbuckles because the originals were 30 years old! and could be dangerously fatigued. I made wooden ratlines up the lowers to the spreaders, port and starboard for ease of climbing on either tack. I made the steps from 19mm X 70mm hardwood decking (with the reeding buzzed off) They were cut only 5mm wider than the rigging wires and slotted by drilling and cutting with a hacksaw.

They are mounted on edge with the wires fitting neatly into the slots. The wires are held into the slots with a strong lashing 40mm back from the end of the step. They don't slide down because I put epoxy glue into the slot which takes the form of the strands of the wire and locks the step in place. The ends of the steps are sanded smooth so the mainsail doesn't chafe too much. The steps are 500mm apart. The wooden steps are very comfortable and steady to stand on and don't stress the rigging like rope ratlines.

To raise the mast I welded up a pivot from scrap steel which is bolted to some heavy timbers lashed across the boat. The horizontal mast is clamped to a swinging arm so that when it is pulled up with a block and tackle, the heel

drops neatly into the mast step. Now that the mast is up I can set up the boom to clear the new dodger, the new roller furling Genoa, the head sail on the inner forestay (with a self tacking boom on the foot), the mizzen, the sheet leads, turning blocks, winches, measure up and have new sails made, position the slab reefing cheek blocks on the boom, vang, outhauls, topping lifts etc etc. When the time comes to launch I will dismantle everything, lower the mast, tow the boat 5kms to the wharf, get the crane to put the mast back up then the **BIG MOMENT**. I have no idea where the waterline will be now that I've added 1.2m to the stern. I will just roll a quick sealing coat of white epoxy below the topsides, launch, go into the smooth water of the marina, mark the waterline then go up on the slip for sand blasting and painting below the waterline. I am very tempted to use copper-poxy rather than conventional antifouling. It is very expensive, but apparently the slime can be easily brushed off with a broom and the deeper bits the broom can't reach done by snorkeling. Much easier and cheaper than slipping, scraping and painting.

Now that the refit is going ahead "full steam" I will have plenty to write about next issue.

Doug - Len Brind aboard the yacht *Tava*, a South Seas used the product copperbote, a copper poxy product. This was now five years ago. Although its good in some respects, he has been quite disappointed. Mainly because the marine growth appears quite quickly, like a thick weed beard slowing the boat. Hull cleaning would need to be done once every 3 months. He is now preparing to apply a standard long-life anti-fouling. The current system being epoxy means that he doesn't have to remove the copperbote coating

ED

Which Anchor? an Introduction by Simpson Lawrence

There is a large range of anchors available and it is often difficult to work out which is the most suitable for your needs. Here is a short guide to the main categories of anchor types available, indicating where they are most effective.

Fisherman-type anchor



Pros: This classic design provides excellent holding under almost any conditions, such as grass, rock and varied bottoms. Good storm/backup anchor.

Cons: Cumbersome to handle and awkward to stow. The vertical blades can sometimes foul anchor lines. Less effective in sand and mud. Requires larger size for given boat size.

Plough anchor



Uses a plough-share at the end of a long shank. It is designed so that the blade will dig into the bottom even when the anchor is on its side.

Pros: Excellent penetration in sand, weeds, rocks and mud. Some types can be self-launched, free-falling, from a stowed position

Cons: Requires larger sizes for given boat size.

Claw anchor



A curved plough-share with three blunt flukes and an L-shaped shank. It is designed to hit the bottom with its weight resting on one fluke. As the anchor is pulled along, the fluke digs in.

Pros: Roll-stabilised design. Sets in most seabeds quickly and reliably. High strength one-piece design.

Cons: Difficult to stow unless in rollers or chocks. Limited holding power in mud and soft sand.

Pivoting fluke anchor



The blades of this anchor are hinged to the flank. The points bear downwards whichever way the anchor falls to the bottom. A long shank helps the points to dig in.

Pros: Excellent in sand and good in mud. Designed for good roll stability and deep penetration.

Cons: Limited or no holding in grassy, rocky or clay bottoms.

Other anchor types include:

mushroom anchor, ideal for permanent mooring, which is capable of providing up to ten times its weight in holding power

grapnel hooks, used to secure boats to canal and river banks

flying anchors, secured aboard in a bag complete with line and cast out ahead of the bow.

The definitive guide to anchoring by Earl R Hinz - "The Complete Book of Anchoring and Mooring" is worth having on board (ISBN 0-87033-452-2).

I know when it blowing 45 knots outside in the anchorage, I like to read it again, and again and when Trudy nervously looks out the port hole and asks "Are we going to be ok?" I can mumble - "I think so! hmmm but that depends on".

Why don't you share with us your anchoring adventures, experience and tips?

ED

Ferro-Cement Trivia

Ferro Cement is the name given by English speaking people to a boat building method using steel wires covered with a sand cement plaster, patented in 1855 by the French, who called it Ferciment. Ferciment boats built by the French before 1855 are still in existence and one at least is still afloat, effectively supplying the answer to "what happens to the steel and plaster, when the boat is placed in water.

Strength of a ferro-cement hull is governed by the quantity of the steel used and the elasticity by the distribution and number of rods and wires that a given quantity of steel is divided into. This is the reason why a hull with 8 layers of 22 gauge by 1/2" wire netting is better in every way than a hull with 4 layers of heavier gauged netting. It is also the reason why frames can be further apart in a ferro hull, than in a steel one and why you do not need ribs between the frames as in a timber hull.

CONTACT US

Ian McFarlane
Trudy Snowdon
"S/V Lilly-Ann"
69 Manly Road,
Manly Q 4179
PH: 07 3348 6567 / 0407 136350
Email: mcfarlanei@yahoo.com.au

HANDHELD

by Keith Fleming S/V Zodiac

The HANDHELD VHF RADIO. I know there is nothing you can't have if you have enough money. But the addition of a hand held VHF radio has many advantages. On a recent trip overseas a friend, who was travelling with another yacht, had the misfortune to lose his mast over the side. It was 3am in the morning and as he was travelling short handed he was facing the choice of either cutting the whole rig away and losing the lot or somehow now contacting his mate who was several miles away. Luckily he had a hand held and contact was made. The second yacht got close and launched his dinghy and between them they were able to saw the mast into sections and saved all the gear. If he had not had the hand held the second yacht may have sailed on for some time before he realised that there may be a serious problem. An alternate idea is to have a spare VHF aerial rigged on the pushpit or thereabouts with a spare length of coax cable amongst the spares. Some cruisers use their hand held in their dinghy for when they go ashore and leave other crew members on board. The danger here is keeping it dry. While on this subject if your backstay is your HE aerial then you may think you have lost contact. A spare length of wire laid out on the deck will work quite well as an HF aerial if you should lose your mast. So add a length of wire to the spare parts list for the HF.

FERRO NEWS SUBSCRIPTION

4 Issues: 12 Months : \$10 (Australia) NZ\$20 (New Zealand) US\$15 (USA and Overseas) Back Copies \$2
(Subscription renewal period: September. All subscribers mid year receive all back copies for that year)

Name: _____

Postal Address: _____

Vessel Name: _____ Port: _____

Design Name: _____ Length: _____

Mail To: Ian McFarlane, 69 Manly Road, Manly Q 4179, Australia



Practical Corner *by Keith Fleming S/V Zodiac*

PARA ANCHORS

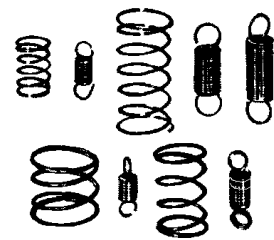
There has been much said about that fatal Sydney Hobart Race and by taking a good look several times at the TV footage that has been produced there seems to a lot that could be said for the carrying of a suitably sized para anchor on your cruising yacht. The fact that it can be packed in such a small area makes it an attractive addition to your safety gear. One great advantage over laying ahull is that the para anchor usually keeps you in a small area with very little drift. In fact it has been found that should you have the current running against the wind direction the anchor can actually carry the boat forward. One worry about lung ahull is that you can drift quite along way and close to danger. The anchor will hold the bow or the boat into the seas and making the smallest possible drag and a less rolling motion for the comfort of those aboard. Being held in the one spot is an advantage in that the weather system will pass you more quickly than if you were drifting. The para-anchor can be deployed off the end of the normal anchor and chain which makes it easier to retrieve as well as cutting out the friction that is often the cause of losing the para-anchor. The weight of the chain and anchor will also set the parachute lower in the water and so keep it fully inflated all the time. They are a must on all cruising catamarans so why not on the mono cruising yacht.



Dinghies

While the dinghy is the life line of transport for the cruising yachty, it posses quite a few problems. Like where do you keep it, how to transport it from anchorage to anchorage, how to keep the water out of it in heavy rain, what to do about the weeds that keep growing on its bottom etc. - There would be hardly a day go by for the live aboard cruiser that the dinghy does not get used. Those that have not cruised in the tropics let me tell you that if the dinghy is left in the water all the time then it will be subject to heavy weed growth that will slow down your speed and increase your outboard fuel consumption. Of course if you row it then it will take more effort to the ratio of weed attached. I use a 3m tinnie and when it refused to get up on the plane I know it is time to take it ashore for a scrub. Cruisers with davits get very little weed growth if they lift the boat out of the water each night. Some cruisers without davits will have a lifting bridle to which they attach a mast head halyard and lift the dinghy just clear of the water so that it rests against the side of the hull. This idea works great in calm anchorages but if a big front comes through in the dark it may become a problem There are one occasions when you may have to move the boat because of wind conditions and the last thing you need is a dinghy swinging against the side of the hull. If you are well organised then it will take but a minute to drop it back in the water and in to the towing position. A dirty bottomed dinghy that is towed behind the yacht will slow the yacht down on a passage up the coast. We regularly cruise from the Whitsundays to Lizard Island

and tow the dinghy all the time. I do make sure that it has a clean bottom and if the breeze is over 15 knots I always have the outboard leg down when travelling north but have it cocked up on the way south in all weather. With any following seas the dinghy will tend to surf and often broach or run into the stern of the yacht. The drag of the outboard leg and propeller is usually just enough to prevent this from happening. Most dinghies do not tow well without the weight of the outboard on the transom.



XTE

There is no doubt that the GPS is the wonder tool of navigation for cruisers. What surprises me is how few skippers know how to use them to their best advantage. Start talking to them about Cross Track Error and often you see their faces go blank as though they do not know of the subject. I read a story where a yacht nearly went onto a reef because the current was taking them backwards and sideways and although they checked the GPS each hour it took them about 3 hours to realise that something was wrong. Obviously they did not have the GPS mounted in the cockpit where it is easily seen at a glance, and they did not have the XTE up on the screen or did not know how to use it. For any passage maker the XTE is the second most important information displayed on the screen and should be obvious and easily seen by the helmsman at all times. Within a few minutes it will indicate to the skipper any side drift off the rumb line. Some GPS sets do not even have the XTE on the main menu board. Manufacturers, with the exception of B&G, seem to think that the lat. and long. are the most important features to appear on the screen. In fact it is an hourly feature, not one that we need to know every few minutes like the XTE. When a waypoint is fed into the GPS and the nav button is pushed the set draws or imagines a direct line between your current position at the time and the waypoint. As you are travelling along this imaginary line the most important thing you need to know is if you are drifting off that line on either side. This is why the instrument should be mounted in sight of the helmsman at all times. Not fitted into some panel downstairs at the Nav. Station.