There are several New Zealand-designed and created fishing kontikis on the market but when I thought about having one, I wasn't going to buy it. I had the ability, so I did what any good Kiwi would do. I'm a qualified automotive engineer and always had an interest in electronics so decided I would make one myself.

Photographs: Jude Woodside

Kontiki fishing

A Kiwi makes a classic DIY kit

by ***Graeme Pedersen***

It would have been late 2008 I guess when I began working on it. I started off using existing computer chips, but the kontiki motor just kept working without stopping and that was hopeless.

That is when I advanced to programming. I studied as much as possible by myself and had a bit of one-on-one training from an electronics engineer.

Graeme Pedersen and kontiki kitset... giving it a go.

Along the way, I've destroyed many a chip and had smoke and flames and sparks, not so much with the timers because they are all low current but with the electric-winch speed controllers which run some pretty high amperages.

PROGRAMMING

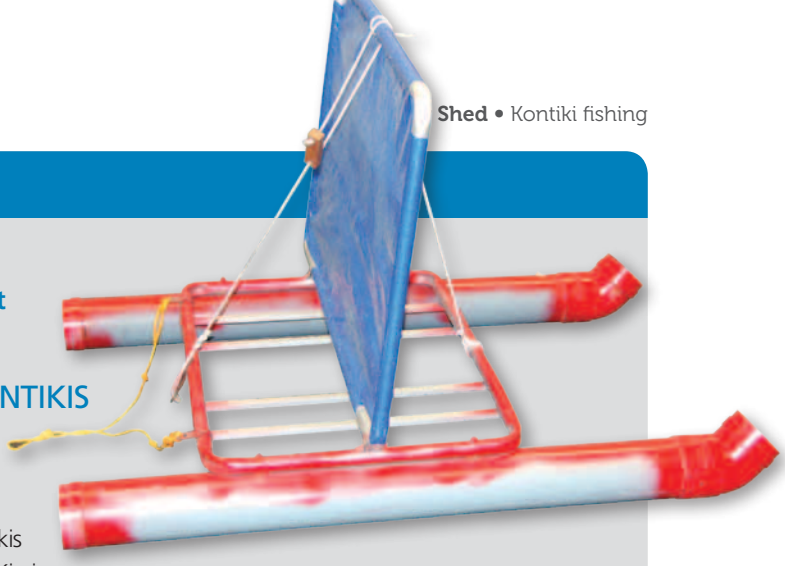
I started with assembly language, because I can just get a microchip from the local corner dairy basically and the hard part of it was doing the programming. But you work it out and master it and you learn something along the way. Like riding a bike—after several failures you just get on with it and can do it. It's no different with electronics. It takes me a lot longer than it would someone who is university-qualified, but I get there. I've always been a big believer that you can pretty well master anything if you persist long enough, nothing's impossible. If somebody comes along and says "That can't be done," you've released a monster. Yeah, then you've got to pretty much well prove that you can.

FIRST ONE

There wasn't anything available in the kitset form out there which I decided to do. The basic concept of the motorised kontiki always stays the same—streamlined nose, motor at the front and the line coming off the back, so it was just a case of working round what was available to do that.

I came up with the proportions and dimensions of the 4 mm PVC tube by trial and error. The first one I threw together, using no aluminium but some old steel and a cheap motor that I stumbled

Kontikis by Roger Lacey



For generations, sheddies have been thinking of ways to get their baited hooks into the tempting waters just beyond casting distance.

BREEZE

In an offshore breeze, the simplest and cheapest method of towing your long line out to sea is with a balloon or blown-up plastic bag. Some people have been known to use a .22 rifle to pop the balloon to sink the line once it is out to sea and to make it easier to retrieve.
A sailing kontiki, still used today as a budget alternative, is often a catamaran of balsa wood, PVC pipe or plastic drink bottles held together by a frame and driven by a square or triangular sail. To drop the sail to aid retrieval, a string supporting the mast has a barley sugar at one end in the sea. When the sweet melts, the sail falls down.

KITES

For centuries, kites have been used for fishing in China, New Guinea and throughout the Pacific. Modern materials have improved the basic techniques. Paul Barnes from Paul's Fishing Kites says. "We have developed a range of kites and tackle that can operate in a wide range of wind strengths. They can be tacked up to 45 degrees off the wind and have many safety features." You could buy the latest gear or knock up your own version. Paul's website has lots of information and examples of different types of fishing rigs that can be flown from a kite.

SLEDS

You can use wave action to power your kontiki. Bottom-running sleds have a flap that is pushed down by an incoming wave. As the wave recedes, the flap pops up, dragging the sled out to sea. A trip line either turns the sled or lets the flap swing both ways for retrieval.
Floating sleds have a weighted flap. It swings backwards as the sled advances, drops when the sled stops and is braked there with a retaining string. The dissolving lolly trick can be used to drop a weight and release the retaining string for retrieval.

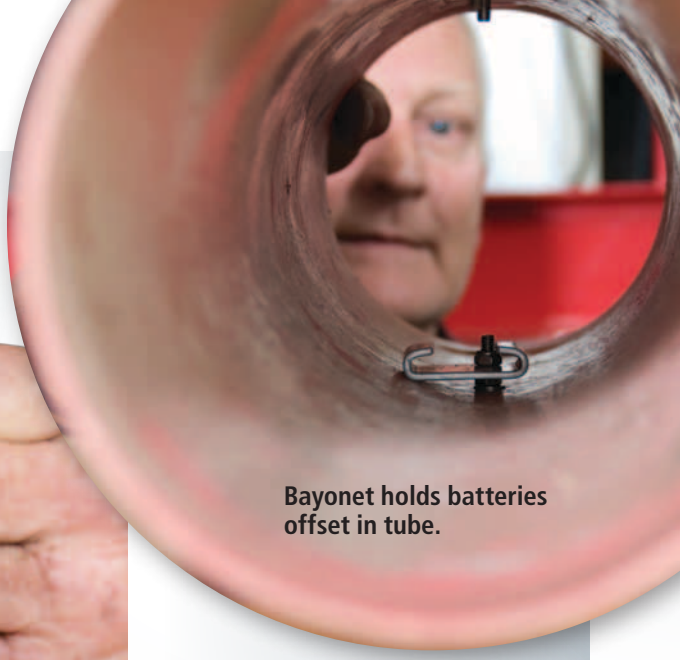
MOTORISED KONTIKIS

While You Tube has videos of baits fired over the surf by gun or rocket, motorised kontikis are most popular with Kiwis.
Dave Craft from Crafty's Guns and Tackle in Hastings, was an early adopter using an old Briggs and Stratton lawnmower motor strapped on an inner tube with a shearing hand-piece to make a right-angle drive. Three-quarters of a cup of fuel was enough to drag out a long line without it disappearing over the horizon.
A few years later, Konrad Attenberger was working on a battery-powered version using a windscreen wiper motor mounted in a PVC tube with little success. When a friend brought him an electric trolling motor back from the USA, he built a contraption using two 12-volt, sealed batteries packed inside a 100 mm diameter PVC pipe, a wooden nose cone which he turned up in his workshop and a delta stabilising wing at the back. He says, "It worked so well I was thinking of putting it into production but with a new business, mortgage and a young child, I put it on the back burner. Not long after, I saw someone else had done it."
Other experimenters have used battery drills and weedeater motors to power their kontikis and there are now plenty of commercially made kontikis available with magnet-controlled motors and some even with GPS.

* The term kontiki comes from the raft Kon-Tiki used by Norwegian explorer Thor Heyerdahl in his 1947 expedition across the Pacific Ocean from South America to the Polynesian islands. The raft, powered by wind and sail, was made only from balsa wood logs and indigenous materials and the voyage was intended to prove a theory that Polynesia had been settled by ancient South American tribes.


Urethane sealant on handle bolt.


Fixing the handle.


Bayonet holds batteries offset in tube.


Propeller guard.

across. It went out dead straight and I thought, this is good.

The next one was all precision but fell on its side. I figured the motor torque was turning the kontiki over as it was going out. The remedy, and what I have carried on doing, is to offset the batteries.

Others making kontikis put a lump of lead on the side of the propeller guard. I couldn't see the sense in adding weight as they are heavy enough to cart down to the beach, anyway. My kontiki weighs 15 kg all-up. Depending on the weight of the total machine with batteries and everything else, you want it to float but you do not want it to bob around like a buoy on top of the water, so the less floatation the better.

HOME-MADE

I get guys coming round here with their home-built kontikis that are not working well.

I say you need to get that that lump of lead off the frontal guard and move those batteries to the left and they'll find that works. People also start off with a cheap, economy oven-type timer and will go through two or three of those before my phone goes and they want to buy an electronic one. The original leaks basically and the salt chews it to bits. If a guy is having trouble with his kontiki, he turns from the happiest guy in the world who just wants to have fun-time on the beach into the most difficult person ever born.

I am happy to sell pieces of kit and my whole kitset is entry level. Guys who may have purchased an expensive kontiki and lost it to a shark or snags think well they can get one of these, put it together themselves and if they lose it can still have enough left over to get another one. I try to make it easy and advise people who have never seen kontikis working or caught a fish in their life. It's really good to be able to sell to people like that, they don't have a million dollars but can afford to just get into it and so they are rapt. At least they can put a long line out and they're going to catch a fish.

MOTORS

I have spent a bit of time modifying and fishing with this model. It can handle or go through anything, even rough seas with 2.5 metre waves when you should be at home mowing the lawn. The motor has 36 lb thrust, it's reasonably heavy and holds the nose down. I've also got a 50 lb thrust motor which will go through anything the west coast will throw at it.

I bring the odd shipment of motors in myself, but I also source them through a colleague who can manage to get them in cheaper than I do. The motor is powered


Checking internal diameter, keeping tube round...

by a three 12V 7.5Ah battery power unit. One of the unorthodox things I have done is the low battery cut-out; once the battery is discharged to the 80 percent mark, the motor will stop and that saves the batteries and the motor. The battery level is constantly being monitored while the motor is running.

The imported motor has an epoxy coating, not just a painted coating which would corrode quickly. Some

...to take nose cone.

manufacturers drill the holes to mount the propeller guard and the fins on them and as soon as you do that you've created a place for corrosion to enter.

SEALING

One of the most basic things with the kontiki is to keep the moisture out. It makes life a lot easier for sealing if you drill then tap the holes for the bolts and nuts because you want to ensure a good fit. When you tighten them up, they also compress the plastic, ensuring a good seal. I use urethane as a sealant on everything although it can be messy. I use latex gloves to put it on, wearing two pairs, as I can always peel one off and still be protected with a clean pair underneath. I don't like silicone rubber sealant which can peel off.

ASSEMBLY

The first thing I do is put the handle on. It's easier to do when there is nothing in there. It's a matter of putting the long bolt through. I've tapped it 6 mm and it seals as you tighten the nuts up. The handle also holds the timer assembly in place. In future, For upgrades, I've got programming pins which I can access from the back to re-program so it's future-proof. I now also router my own printed circuit boards.

That bulge in the PVC tube for the timer is formed with a scissor

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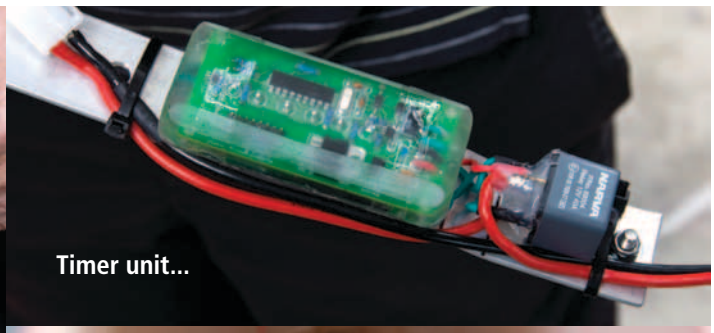
Lube the bolts to prevent seizing.


Timer unit...


...wired up.

jack and wooden former, as I mention on my website (www.bulletfishing.co.nz). I heat the tube with a heat gun and tighten the jack until bulge is about 25 mm. The former size is 50 mm x 220 mm.

Next we've got a bayonet for the battery pack that'll screw into the tube so you can remove the batteries for maintenance or if you need to replace them. You can see that the offset is not much but it does make a difference. For charging you don't need to remove the batteries—you plug straight into them in the tube once you disconnect the plug to the timer.

MOTOR

I clamp the tube to a sawhorse placed vertically to assemble the propeller guard and the motor. I am an expert at putting the guard on the wrong way round and having to take it off again, which is why I have all the dot punch marks on as a guide. I urethane the bolts and use Nylock nuts as extra even thought the seal is good because the plastic compresses.

With the guard, you need as much clearance as you can get without the propeller hanging out of the back. You can get a jam-up with the rocks, specially Napier way on the shingle beaches, but it has a circuit-breaker built into the timer so if that happens it will just disconnect the load off the motor.

Now you need to check the alignment which is critical before the urethane sets. I find as good as any is the "eye-crometer," probably the most useful tool you will come across.

The next thing is to pull the wire through with my "special" tool—a bit of TIG wire—to connect the motor to the timer.

After a check of the internal diameter of the tube, I test fit the moulded nose cone. I get some guys that ring me up asking for a replacement nose cone for their kontiki, but I have to check what size pipe they've got because the internal diameter actually alters not the outside diameter.

TIMER

It's a good idea at this stage to put the timer in place and connect the batteries to get the LEDs lined up with the holes on the top. If they are not lined up, it's just a matter of taking the timer out and moving it on the timer bracket forward or backwards to suit.

A magnet control operates the two sensors in the timer, one to set the time which equates to the distance and the other to start or stop the motor.

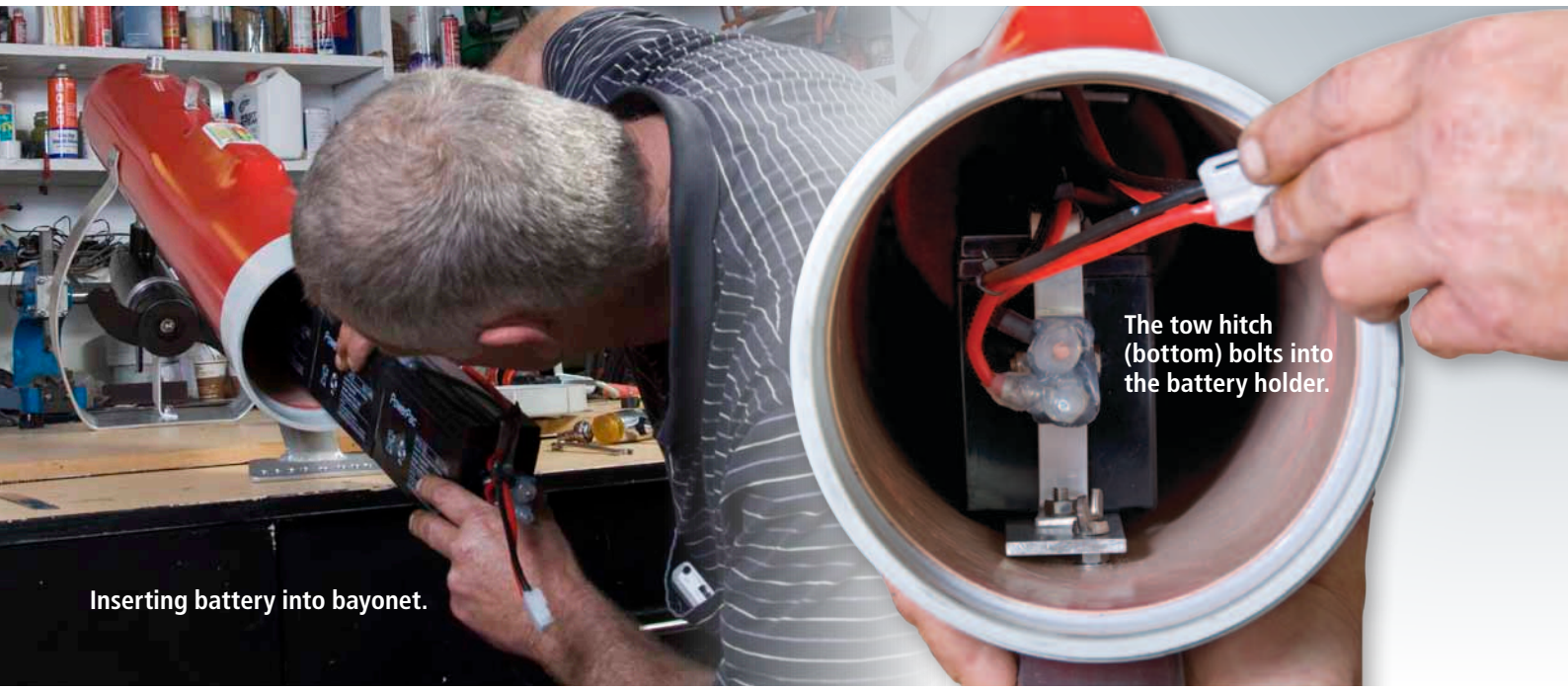
The time is in five minute increments up to 30 minutes. At 1750 rpm, the motor on a 15-minute setting will take the line out just over a kilometre.

TOW HITCH

We put on the tow hitch to attach the line to. It fixes with a longer bolt and wing nut on the battery fitting. Everything is

Magnet sets timer to ten-minute run.


Protective silicone spray.



Inserting battery into bayonet.

The tow hitch (bottom) bolts into the battery holder.

made with jigs so all the holes are very accurate you won't get any misalignment or holes that you need to file.

Keeping the kontiki on a straight line depends on where you attach the line on the tow hitch at the back. The tow hitch has a series of holes. With this model, if you need it to go straight out and there are no currents or side winds, you need clip the line on about two holes to the left and it will go straight out. If you want it to go to the left because maybe there are some rocks to one side, move the line one hole over. If you want it to go to the right, move to another hole and that will change the kontiki direction by about five or six degrees. One of the mistakes people make is to use too heavy a line


Sealant for nose cone...


Plumber's cap provides access.

because then the side currents affect them more. Bigger isn't always better.

But there are lots of unknowns and you get used to a beach, the side currents and tides. When I get a chance, because I am working more and more on my kontikis in my spare time, I try to go to the west coast beaches. There is excellent fishing at Raglan. The east coast beaches are good at certain times of the year, but I prefer the west because there is more opportunity and you never know what you are going to get—big kawhai, snapper.

With urethane, I seal on the nose cone and the O ring at the back that has the plumber's cap and mount the flag which is held in a small cap on the end of the motor shaft. I put some urethane in there to just to block that hole to ensure no water gets in.

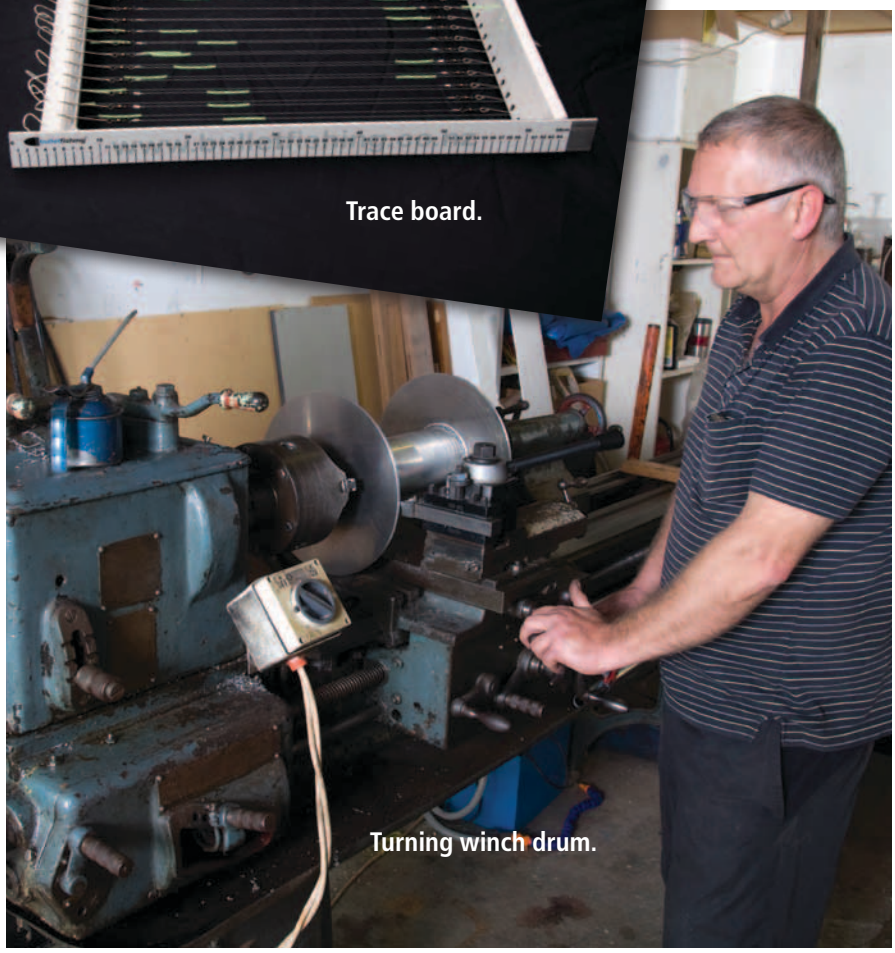

Sealing motor shaft end where flag sits.

With the trace board holding the maximum 25 hooks allowed by law for a long line and the electric winch, you are ready to go. For the electric winches, I use a mobility scooter motor on which I change the brush angle to run them up to 100 rpm on 12 volts. You want the line to come in fairly steadily. I make all my winches.


Casting join needs to be sanded off or end cap O ring will not seal.


...fitted.

Trace board.



Turning winch drum.

* Information about Graeme Pedersen's kitset kontiki is available at his website www.bulletfishing.co.nz