

# 'Forcing' The Jet Principle In Small Craft



**Introducing one of the most unusual small craft we've tested for some time – a Tasmanian built aluminium runabout powered by a Force jet outboard. It's not the fastest boat in the world, but it has a number of attributes matched by no other craft. Peter Webster report and pictures.**

**W**hen Peter Buckingham from Golden Seal Marine Products in Mordialloc Victoria, rang to suggest F&B should have a look at a new Tasmanian built outboard jet powered runabout, we were a little taken aback.

For readers not familiar with Peter Buckingham's business, he operates what is arguably Australia's biggest outboard spare parts and reconditioned outboard component business. It is used by just about every marine workshop across Australia's nation-wide dealer network.

So what was Buckingham doing with a brand new boat and brand new jet outboard?

Basically there is a disarmingly simple answer: Peter wanted one for himself, and was so taken with what he's had built, he believes there is a ready

market for it in certain parts of Australia.

"Obviously, it's not a boat for the mainstream boating public in deep water ports such as Sydney and Pittwater, or for that matter Melbourne or Adelaide, Perth etc," he told F&B. "But there are hundreds of little inlets and seaside resorts scattered around Australia on estuaries absolutely full of sandbanks and tidal movement – in these sorts of places, this boat is very hard to beat."

We didn't need a lot of persuasion. Having served our Queensland apprenticeship picking our way through the coffee-rock ledges in Eurimbula and Middle Creek out from the Town of 1770 a couple of years ago, we could see immediate application to creek and barra fishing, not just in Qld but in the NT and WA too.

But it's not just estuarine fishing, is it? What about all the fabulous fly fishing spots an increasing number of anglers are discovering in the headwaters of Australia's myriad of creeks and riverlets that run down to the coast right around Australia. For bass and other native fish species' enthusiasts, having a boat without propellers opens up a Pandora's Box of shoal water fishing opportunities.

A few weeks later, this very neat 4.75m tinny arrived on our doorstep, nicely packaged, extremely well fitted out but with some very clever touches. We could hardly wait to get it in the water, I have to tell you – and when we did we were delighted with what we found.

**Design** This is a 4.75m Power Craft aluminium runabout that's actually built

to Tasmanian survey standards. This is the unpainted runabout version, and I guess it is obvious that it can also be purchased as a fully painted, tricked up little outfit.

It should also be noted it's available with regular outboards of the 2-stroke and 4-stroke kind with propellers as well as the unusual jet pump engine fitted to the test craft.

Nevertheless, it was interesting to look at the ideas and methodology involved in this Tasmanian craft, and we were very impressed. Design features of note included a particularly clever inboard anchoring arrangement which we photographed carefully to ensure that everybody has the opportunity of copying it, including some of the big guys such as Quintrex and Ally Craft – this is a seriously good idea!

There's no need to walk through screens, or clamber around the side decks. In this boat, you just mosey up to the definitive fishing mark, and with your left hand, slip the chain link off the cleat and lower the anchor from inside the boat. A brilliant idea, really – and particularly so when the time comes to pull the anchor up again. It's all done from inside the boat right next to the helm.

Have a look at the photographs carefully – this



## The Outboard Jet

is an idea that's worth developing.

Otherwise, apart from the extensively developed transom that seemed to be almost over engineered (there was a lot of aluminium work out there doing not much more than holding the engine up), it's a conventional runabout.

Two polypropylene seats forward are quite comfortable, the

windcreens are at a nice height and it has a total of 1.6m of space behind the seats in a cockpit 1.8 m wide.

**Summing up** – a very competent, nicely designed runabout.

**Construction** With a beam of 2.2 m, the hull bottom, foredeck and transom are built of 3.00 mm marine grade aluminium, with the hull topsides in 2.5 mm.

It's very nicely built, with extremely good quality welding evident in all of the seams and joins. The aluminium technique was used to good effect with all of the "freebies" you can score with aluminium if the builder thinks about it, with a very good standard of cleats, grab rails and handholds put around the cockpit.



**T**he outboard Jet is a replacement unit for the outboard motor gearbox, designed to allow a boat to be used in locations where a propeller driven boat is unable to operate – in water only ankle deep, through white water rapids, over sandbars, shoals, rivers etc.

The jet unit comes complete with all hardware and assembly instructions. The unit is attached to the motor in place of the propeller and gearbox assembly. Time taken to do the conversion is one to two hours for the novice. Only hand tools are used and no special skills are required.

Jet units are manufactured from aluminium and stainless steel with a baked enamel finish. The jet drive is much less susceptible to underwater collision damage, as it doesn't protrude below the bottom of the boat. The elimination of gears, clutches and propellers make the unit relatively maintenance free.

No modifications are made to the motor that would prevent it from being converted back to a propeller motor at a later date. This is a handy attribute, too, as it means you could (then) upgrade the outboard driving the jet pump for a new model, and re-bolt the original jet pump onto the new outboard.

These jets are supplied as original equipment to all major outboard motor manufacturers: Mercury/Mariner, Johnson/Evinrude, Yamaha, Suzuki, Honda.

**Performance** Well, how did it go? In a technical sense, it did 21.6 knots flat out at 5,200 rpm, and 13.6 knots at 4,000 rpm.

Converting that back to the 'normal' standards we've come to expect from 16 foot runabouts with 75 hp, that is a painfully slow result. It suggests the jet is losing at least a third of its power through the inefficiency of its jet pump drive.

Normally, a boat of this size with a 70-75 hp outboard would be fairly flying across the water at 30-35 knots. Indeed, few 16 footers are actually rated to 75 hp.

So there's a lot of horsepower gone missing here, and it's probably more noticeable at the cruising speed than it is at the top end.

Poking along at 4,200

rpm, the boat was doing about 14 knots, and was very comfortable with a nice soft ride and the feeling of going along very nicely, thank you.

For us older blokes with crook backs and hips etc, it was very comfortable and quite fast enough – but for an awful lot of people, 14 knots is dreadful.

If you had any distance to cover to the fishing grounds, you'd probably have gone to sleep from the sheer monotony and length of time it was taking to get there.

Worse still, the fuel consumption from a 2-stroke 75 hp running at 4000 revs to get 14 knots is absolutely appalling – so we can conclude from these figures that it has neither top end performance nor range to tempt fishermen for what is still a rather expensive package.

Well, what's it all about? Why bother with a jet?

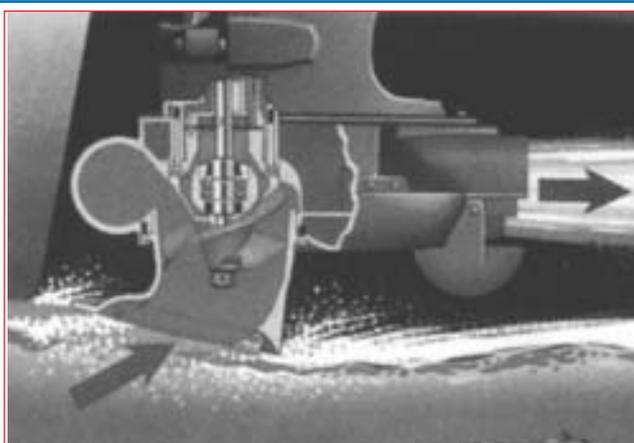
**Application** This is where all the chickens come home to roost.

Envisage a typical Australian estuary such as Mallacoota, Tuross, Wallace Lakes, the Noosa complex – any of the classic Australian coastal estuaries.

They're usually only about 5-10 miles long from the foothills down to where the river runs into the estuary, usually in the form of a coastal delta. In truth, most Australian estuaries do not involve the issue of "range" at all.

Indeed, very few of them need you to go much more than 20-30 minutes even at 14 or 15 knots to get to the fishing hole that you're targeting. More commonly, it often only takes but a few minutes to get across to your favourite fishing stretch, be it that run down by the sand bank leading to the main entrance channel, or perhaps further back up the river next to the oyster lease. In these typical situations, neither range nor outright speed really matters a hoot.

But how about the issue of shallow



## How It Works . .

**W**ater is drawn into the unit through the horizontal grill flush with the bottom of the boat, by an impeller driven directly by the engine driveshaft. The water is then forced at high pressure and volume through a nozzle directed astern of the boat. The velocity imparted to this mass of water creates an opposite force, and drives the boat forward. When the boat reaches planing speed, the jet discharges freely into the air and only the skimming intake grill touches the water.

To reverse, a cup is swung up into position in front of the jet stream directing it in the opposite direction under the boat, creating a force to propel the boat backwards. Conventional controls are used for throttle, reverse and steering.



water drive and picking your way back across the estuary at low tide? Or sneaking up the tributaries such as the creeks and riverlets running into the estuary? How far back up the river would you like to go? With this boat you can go wherever you can stand in ankle deep water.

Now you've got to think about this very carefully for a minute – this boat opens up a whole raft of opportunities that normally we never get to

contemplate.

I repeat, you can go wherever you can stand in ankle deep water, across sandbars, rock ledges, coffee rock, whatever.

For the Middle Creek set in central Qld, this would be the definitive fishing boat. There are dozens of places – no, wait a minute, hundreds of places in the northern parts of Australia where this would be "the" boat and motor combination to take anglers to the point where the electric motor is lowered and the serious fishing commenced.

With a bow mount electric motor, and the controls positioned by the standard helm, this would be a remarkably efficient platform.

And this is the market that Peter Buckingham identified in the first place. In his own seaside estuary where he has his holiday house, he used it to pick his way through the estuary at dead low tide to make sure he was in the perfect position to sweep up the local river with the incoming tide.

"Trust me," he told F&B with a grin as wide as the boat, "this a remarkably effective fishing technique – and you can only do it with a jet outboard!"

**Shallow Water** There is of course an implicit danger in using the jet in shallow water, and I stress that I'm not suggesting that readers start charging about in water 2" deep at 20 knots. A rock driven through the bottom of

the aluminium hull could ruin your entire day, and it happens just as effectively with a jet as it does with anything else.

That said, anybody with a few brains between their ears can easily figure out that with normal, sensible seamanship, this jet powered craft can be used to pick its way through rock ledges and sand bars extremely effectively in water that is quite literally only 100mm or so deep. As long as the boat can

float, it will continue to go forward or backwards or wherever the helmsman points it.

Obviously, you don't do this at 20 knots either, but we found no trouble whatsoever in steering a course across a sand bank and around logs and trees just using the throttle occasionally to kick the thing in the bum. Like all jets, it tends to wander a bit a low speed, but if you don't worry about it, you very quickly get the hang of leaving the steering wheel alone so that you don't "sea-saw" the helm and make the "wander" even worse.

The best technique is to simply forget about it – and ignore the fact that the jet is tending to wander within a 3 or 4 foot area as you maintain your course in a more general sense, along the river's edge. If you need to be precise in the steering, it's simply a matter of raising the throttle up to about 2000 revs when the steering becomes as good as any propeller driven boat. At 3000 revs you can start doing donuts and at 4000 revs, trust me, you've stopped fishing and started having a good time!

That's the other side of this boat I was hesitant to mention – it is a fun

machine, too. It's safe to drive, it's fun, it accelerates very smartly, and has phenomenal grip on the water. If you just want to go out and run the chicane with the kids on tubes, I could not think of many better boats to do it.

**Conclusion** A most interesting craft with considerable potential. Not of any interest to people in the cities and deep water, but I think it has very definite application to many of our coastal estuaries, especially for older folk.

People who are concerned about having to get out and push the boat off if they have gone aground by fishing too close to the sand bank or bar.

In this case, there's none of that – if the boat's actually afloat, it will pull itself off just about anything – and we did that too, just to see how effective it was. But by sticking the nose ashore, we found it would quite easily pull itself off a bank we'd hit at 5 or 6 knots. Quite impressive actually – and it gave me the distinct feeling that it is one of the few boats around where you could keep your feet dry all day, and still work right into the shallow ledges and banks.

There are many rivers up north

where rock ledges and bars often prohibit traffic going up and down the river – and countless places where people have just simply lost the whole lower units of their outboard, not to say chomped out all of their propellers in the process.

This boat eliminates that problem. There is nothing to break off, nothing to chip, no gear case to lose.

The downside is the loss of power and efficiency through the jet pump system; the upside is the freedom that having nothing under the boat the jet gives you.

It's worth thinking about isn't it? As packaged here, Peter Buckingham is offering this whole rig (complete with canopy, side curtains, storm cover, battery, full fit-up, the new Force 75 jet with power trim – the whole lot for \$23,950 and that's on a Mackay Multilink single axle trailer.

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**F&B**