

The Classic Australian Wooden Power Boat Association

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Editor's Note:

Late again with this issue, but I am afraid that this is the price we pay for scarcity of content. It was a long wait for some contributions for the newsletter to come in and I am very grateful to those who provided articles for publication.

The Sydney C&WBF is on again in March. This is a very good event for us and the following day on the river is fantastic. Be there!

Please, keep talking to me ....

Greg Carr

Around the Traps

Victoria

Dennis Collins is progressing well on his Lewis *Hustler*. The boat has been re-decked and the hull restored. The engine, a Ford Y block, is currently with Ted Robinson in Ballarat and will be putting out some seriously scary horsepower when returned to Dennis. After talking to numerous boat owners and drivers, some of who have viewed the boat, consensus has it that *Hustler* may be the first *Mandy*.

South Australia:

Victoria's loss is South Australia's gain as *Yandy V* heads across the border to its new home with owner.

*Ramrod*, a Chrysler powered ex racing Binx runabout has been sold by Paul Siddall.

New South Wales:

Peter Moir tells me his Everingham skiff *Zarak* is now very close to completion. A new set of extractors and a few other minor details should see it making some noise in the near future.

Jeff Lockhart has become the owner of a 14' skiff. More on this immaculate Holden powered racer in a later issue.

Dave Pagano has dug up another classic - quite a rare and unusual one. You might have to get along to the Sydney Classic and Wooden Boat Festival for a look.

Welcome

Welcome to the following new members who joined the club during the second half of 2003:

Ross Foster	Vic
Neil Matthews	Vic
Nicholas Luker	NSW
Ray Hudson	WA
Gary Rossiter	Qld
Chris Friend	Vic
Steve Varrasso	Vic
Mark Poland	Vic
Mark Davis	Vic
Dale Muir	WA
David Dewer	SA
Alan Price	Vic
Alan Rae	Vic
Shane Rice	ACT

I recently received a couple of cheques for membership renewal that bounced. While this is very rare and is usually just an oversight, it costs the club \$9.00 in charges each time. Please take care when sending in fees, we operate on a shoestring and can ill-afford these additional costs. Thanks.



The Classic Australian Wooden Power Boat Association

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THE HOLLOW LOG

Volume 4, Issue 1

January 2004

Incorporation - something to think about

For some time now we have been frustrated by insurance issues when attempting to stage events. These problems are not going to go away and will continue to haunt us until we bite the bullet and act on it. This is becoming more of an issue as the drought breaks in affected states and we find good boating water becoming available again, increasing the opportunities for us to get together as a group.

How do we get around all this you ask? By forming ourselves into an official association/club. This means becoming incorporated. Being incorporated allows us to be recognised officially by governments, insurance companies, venues, etc. Importantly, it also relieves the organisers of a degree of blame if something goes wrong that was beyond their control.

So, what does becoming "incorporated" involve? The following procedures comply with Consumer Affairs Victoria. The Victorian system was chosen simply because that's where I happen to live and I doubt it would differ much from any other state anyway.

There are three main steps:

Step 1:

The association must hold a meeting in which all members are given at least 21 days notice.

Step 2:

At this meeting, a majority of votes cast by members, whether personally or by proxy (if proxies are allowed), must:

- authorise a particular person to incorporate the association. This person must be at least 18 years old and reside

in the state of Victoria;

- approve a proposed statement of purposes;
- approve proposed rules that comply with the Act or approve the adoption of the model rules.

Step 3:

The person authorised to apply for the incorporation must complete and lodge with the Registrar:

- the form *Application for Association Incorporation* together with the prescribed fee;
- a copy of the proposed statement of purposes;
- a copy of the proposed rules of the association. These rules must contain the matters specified in the Schedule to the Act;
- Copies of any trusts affecting the association.

What Incorporation will do is take away the informal, loose structure that we currently have.

Put very simply, Incorporated Associations must elect a Public Officer, form a committee, formulate a statement of purposes (the reason we are forming the association), hold an annual general meeting, produce and submit a financial report each calendar year to the Registrar, maintain adequate and accurate accounting records of its financial transactions and have those accounts audited at the end of each financial year and formulate a set of Rules (we would most likely adopt the "Model Rules" which are a set of rules already drawn up). While these are the main points, there are



many other minor rules that are quite predictable for a club.

I realise that all this is probably sending shudders down the backs of many of you, but unfortunately it is a fact of life in this day and age. We are no longer a small group, having around 60 members Australia wide and frankly, just two or three of us should not be running things by ourselves. There should be more input from club members on what we should be doing and how we should be doing it.

On top of all of this, we then have to consider whether we will run separate state based groups, or "Chapters", that remain associated with other state based groups (Chapters) or combine the group as an Australia wide group, as we are trying to do now. The reason for this is that while Victoria and NSW have good member numbers, they will tend to dominate what happens. States with smaller numbers should be able to do their own thing, independently. Depending on numbers, some smaller states may wish to come in under a larger neighboring state.

We would like to hear from anyone who has had experience with forming clubs. This is very important and we need plenty of feedback.

Coming Events

February 2004

- A "Gathering of Wooden Boats Enthusiasts" is being held on Sunday 15th at Melbourne Docklands. Not only power, but covering all types of wooden craft.

March 2004

- The Sydney Classic and Wooden Boat Festival. March 6/7th. This is a big event for classic powerboats. The National Maritime Museum, Darling Harbour, Sydney.
- NSW Chapter Wet Together, Hawkesbury River at Windsor, 8th March. This is the traditional follow-up day after the Sydney Wooden Boat Festival.

National Wooden Power Boat Rally

- No firm dates or venue at this stage, but this event will happen this year. Lake Albert in Wagga is a likely venue and the time to be around October. We need serious expressions of interest for this event as there will be considerable organising to be done. More info next issue.

① Please check for confirmation of dates and venues

Club News

The South Australian Chapter

For further information, contact Paul Siddall by phone on: 08 8520 3651 or 0419 826 377 or by e-mail at: [siddall@adelaide.on.net](mailto:siddall@adelaide.on.net)

The Victorian Chapter

For further information, contact Greg Carr by phone on: 03 9370 2987 or 0408 937 029 or by e-mail at: [NH35\\_Stormy@bigpond.com](mailto:NH35_Stormy@bigpond.com)

The New South Wales Chapter

For further information, contact Dave Pagano by phone on: 02 4578 4444 (after hours) or by e-mail at: [davehotboats@hotmail.com](mailto:davehotboats@hotmail.com)

The Queensland Chapter

For further information, contact Chris Lawrence by phone on: 07 5594 2517 or via e-mail at: [chrisles@onthenet.com.au](mailto:chrisles@onthenet.com.au)

The Tasmanian Chapter

For further information, contact Alan Mansfield by phone on: 03 64 282290 or email at: [amansfie@southcom.com.au](mailto:amansfie@southcom.com.au)

The Classic Australian Wooden Power Boat Association

For general information, contact Greg Carr by phone on: 03 9370 2987 or 0408 937 029 or by e-mail at: [NH35\\_Stormy@bigpond.com](mailto:NH35_Stormy@bigpond.com) or write to the address at the top left of this page.

Merchandise

Caps and polo shirts sporting the Association's logo are available again. Caps are available now and shirts on order. Enquiries/orders to Greg Carr via email.

Shirts are \$27.00 each and caps \$18.00 each.



Danny Boy

*Danny Boy* is an 18’ 6” Lewis & Johnson former racing boat that was owned and raced by Danny McGuire.

It was eventually sold and passed through numerous owners before Danny eventually tracked the boat down again, a little worse for wear, under a tree.

He promptly bought it back and handed it over to boatbuilder Ron Johnson who is currently restoring it back to original condition.



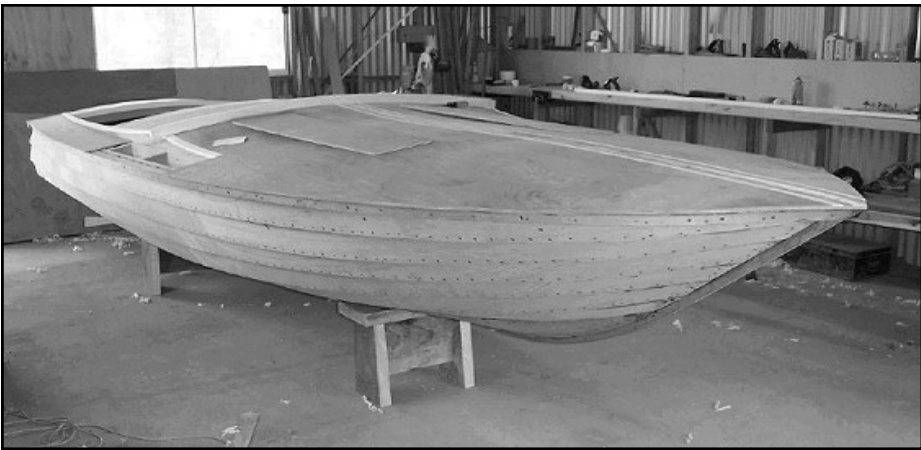
Robyn Johnson

Brand New

This almost finished ski boat is a new 18’ 6” design being built by Ron Johnson to replace his son’s 30 year old Lewis & Johnson that was originally built by him, but then lost in the 2001 bushfires.

Construction details are plywood plank-ing, spotted gum ribs and Australian cedar veneer deck with silver ash trim.

Power will be provided by a 351 Cleve-land with a soft clutch running through a V-drive.



Robyn Johnson

Yarrawonga Boating

After missing out on our boating holiday last year through being overseas, the troops and I made our annual pilgrimage to Lake Mulwala in January. For the past few years we have rented a house on the lake a few kilometres out of Yarrawonga, but unfortunately that house was sold and was not available to us this year. Luckily, the house next door was!

The weather was not as good this year as it has been previously, with milder tempera-tures and quite a bit of wind. All the same, there was plenty of opportunity for water skiing or just plain lazing around, the latter being something I am good at.

After two years of sitting on a trailer in a garage with no attention, a few problems appeared on *Stormy*. A previously repaired split in a plank opened up (the repair was OK, the crack just extended further forward and aft of it). A few other minor cracks ap-peared elsewhere. These boats just don’t like drying out! It took nearly a week before the

hull “took up”, although water contin-ued to come in through that leaky shaft log seal I have been going to fix for five years now.

Over the two weeks, the boat spent one day on the trailer because of a prob-lem. You know the story . . . always the last ski of the day. The skier didn’t get up and when idling around for another attempt, I noticed a decent sized lump of wood in the water, so I decided to circle again to pick it up. While doing this, I heard and felt some quite loud thumps from under the boat. I immediately shut down the engine and looked at my observer, who was looking over the back. He turned and said that he could not retrieve the ski rope. You guessed it, I had run over it. Unfortunately though, the rope handle had hooked up on the prop. We pad-dled the short distance to shore

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Stix

Christmas 2003 and member Bruce Anderson his wife Julie, their daughters

come Christmas it was off to the “river”, an annual pilgrimage of some 20 years tradition.



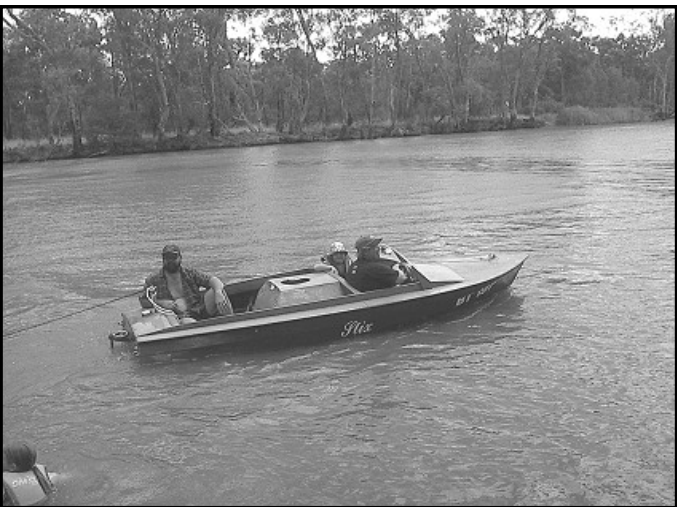
The only difference this time was “A boat of his own!”

On arrival the Lewis did not want to run but after cleaning out the jets on the Holley she fired and ran happily for the next four days almost continuously. Many of the kids and some of the adults took advantage of the magnificent wake she creates to ski, kneeboard or laze back on the doughnut and watch the river pass

Bethany and Charlotte and their niece Emily, head for Torrumbarry on the Murray River near Echuca in Victoria.

Bruce has owned “Stix”, a 1958 Lewis, powered by a 272 low comp Ford V8 for 3 years and had taken her up to the Murray once before. It was on that trip that he discovered some splits in the planks that necessitated the use of the bilge pump on an almost hourly basis! With the beginning of a new business and other family commitments the splits had to wait. It was earlier this year

by. Other than a couple of hiccups caused by the choke on the Holley vibrating from the



that he found the time to repair them, so

“off” to “on” position causing the motor to stall under acceleration, she ran and worked



like a dream. A mechanic friend is rebuilding the carbie over the next week and the Lewis will be back on the Murray providing more fun and entertainment for friends and family alike on the weekend of Jan 9<sup>th</sup> 2004. The family is excited and Bruce has not stopped smiling!!

Bruce Anderson

Yarrawonga cont'd

(I’m glad it’s not a rowboat) and after a con-siderable time attempting to unravel the mess around the prop, I eventually cut the handle away. Everything felt OK, so I decided to go for a run, just to be sure. After satisfying myself that all was well at 40 mph, I turned to come back. Well, talk about a sloppy turn. The boat wallowed around, very strange, but things were fine otherwise.

By this time it was nearly dark and too late to go for another ski, so I began putting the boat “to bed”. After walking around the back I happened to notice that one arm of the rudder shaft top bracket had come away from the transom, leaving the shaft quite loose at the top. “Hmm, that explains the lousy steering” I thought. It seems that the ski-rope handle had hit the rudder hard enough to dislodge the bracket arm and bolts from the transom.

The next day saw the fuel tank come out to investigate the damage. What had happened was that the nuts had come off the two bolts holding the bracket to the transom. Obvi-ously, the only thing holding the bracket arm in place was the sealant the bracket and bolts were bedded in. The nuts were plain with spring washers. Needless to say, they were replaced with proper lock nuts. For areas such as this, where things are hidden from view for extended periods of time, I believe it is essential to install the best gear you can get, even down to the hardware. While eve-rything was out, I check tightened the nuts on the skeg bolts, all of which were loose. I continued on and every bolt I touched could be tightened, some just a little, some quite a lot.

Back in the water the following day, when starting the engine, the starter seemed to “crash” in; not a nice sound at all. A few starts later, all that happened was a high pitched metallic scream as the starter en-gaged. You guessed it, the crashed start re-moved about six teeth from the ring gear. It is amazing how often I hit that spot from then on and each time I did it, I removed more teeth. Anyway, it lasted out our holiday causing only minor inconvenience.

So, old boat and not a lot of maintenance meant a few problems, but I just can’t wait to get it back in the water! The old girl is start-ing to need some real TLC now and maybe, after 10 years of use, it deserves some

Quote for Today:  
“If fifty million people say a foolish thing, it is still a foolish thing”

fibre or cloth wheel on the drill which should give a highly polished mirror finish.

It is best to content yourself with the near mirror finish because you will have to be an expert to streamline a head to perfection. If this is required, the head should be sent to a reputable engine tuner, who will charge from



Porting and polishing is a highly skilled art. Here a competent mechanic uses a high speed drill to polish valve seats. The piece of cloth fixed to the left has two purposes, to stop the glare of light from the bulb lighting the work area shining into the operator's eyes, and to keep dust and grindings down.

£20 upwards. Queensland, South Australian and West Australian readers are advised to go to their capital city in their State or contact Merv Waggott in Sydney or Eddie Thomas' Speed Shop in Melbourne.

Porting and polishing could be a complete article by itself and several handbooks have been written on the subject.

When increasing the inlet port in size care must be taken when grinding. This is particularly so with Siamese ports - those in which one port serves two inlets or exhausts. It is important not to take off more than 1/16th in with the Holden otherwise you will break through to the water jacket.

A common misjudgement is the thinking that the same amount can be taken off inside the port as the metal outside the port. This must be watched because many engine manufacturers have designed the inlet port to decrease in size towards the valve to increase the gas flow.

The inlet port of the Holden can be taken out nearly 1/8th in on the outside area of the port, while no more than 1/16th in can be

taken off internally. The measurements given here are approximate and within a good safety margin. Further "porting" may not create visible damage but will incur a greater safety risk.

Where the inlet port turns up inside towards the inlet valve seat, the inside of the curve should be rounded and smoothed out. Any casting rough edges should also be smoothed out.

The diameter of the port at the valve seat may be increased as long as it does not interfere with the valve seat itself.

The exhaust port need only be increased slightly for a skiboat. The improvements should be confined to the inner port surface and wall finish. As with the inlet ports, remove all casting roughness and round off edges. This job can be done with a small hand file and a high speed ¼ in drill used with extensions to gain access to all port areas.

It will be found that a smooth finish will be obtained by using a grinder with high constant revs. Speed shops are equipped for this and some use a ½ hp air grinder spinning at 17,000 rpm.

It is advisable to use the standrad Holden head gasket. It should be tightened down with a tension wrench to 65 to 70 lb.

#### WATERCOOLED EXHAUST

Because of the static air in an engine compartment, a watercooled exhaust should be fitted as a safety factor. An overheated exhaust pipe could be responsible for an explosion and fire. A quality watercooled manifold can be at most marine shops for about £25 including inlet.

At this stage of tune, and say with twin carburettors and manifolds, the motor should swing a 9 inch diameter 14 inch prop up to 4500 rpm. To increase the revs by up to 500, place small steel packing washers under the valve springs to increase the spring pressure. This should be done cautiously because the packing could cause "coil binding" - that is the valve springs closes right to the limit and could shatter the spring. For safety it is advisable to keep at least 1/16th in on maximum lift.

If the unit has been carefully prepared, the engine will still give the desired reliability and be capable of towing up to three skiers at

30 knots. (It should be mentioned here that the output produced by the engine will push different hulls at different speeds. Hull weight, length, shape and planing qualities are all vital factors in a boat's performance. In our reference to "boats" we are considering the popular clinker or coventionally planked skiff with ability to plane at lower speeds.

In a bigger runabout, a speed of 30 to 40 knots can be expected from the tuning suggested so far. This is also provided that high octane fuel and quality oil - say SAE 30 or SAE 40 - is used. Some boat owners with Holden engines have thought better of manufacturer's advise and have used HD 30 oil right from when the motor was new. This is entirely up to the owner and no recommendations can be made.

In the very hottest motors, and even in some not-so-hot, the engine oil may boil. The cooling system should be checked but it is more likely an air cooler will have to be fitted. It can be a separate air cooling unit or one fitted to the sump.

Continued next issue . . .

This article was reproduced from the November 1962 issue of SEACRAFT

#### SPECIFICATIONS OF HOLDEN ENGINES

No. of cylinders: 6 in line.  
Bore: 3" or 76.2 mm for FJ, FE and previ-  
ous models - 3.062 in for FB, FC, EK,  
EJ models.  
Stroke: 3 1/8 in or 79.0 mm.  
Capacity: 2,171 cc or 132.55 cu in, FJ and FE  
2,262 cc or 138 cu in, FB, FC, EK,  
EJ.  
Firing order: 1, 5, 3, 6, 2, 4.  
Compression ratio: 6.5:1 (FJ, FE); 7.25:1 (FB,  
FC, EK, EJ).  
Horsepower: 21 hp developing 60 bhp at 3,800  
rpm (FJ, FE); 21 hp developing 75  
bhp at 4,200 rpm (FB, etc).  
Maximum torque: 120 lb per foot at 1200 rpm.  
Weight: 360 lbs.  
The valve mechanism is actuated by single cam-  
shaft through followers and solid pushrods to  
normal overhead gear with offset rocker arms.  
Valve seat angle is 45 degrees in the FJ and FE  
and 30 degrees on the inlet seat and 45 degrees on  
the outlet exhaust in the later model.  
Tappet clearances: Inlet valve .008 in clearance  
(when hot), Exhaust valve  
.012 in clearance (when hot).  
Valve timing: Inlet valve opens 4 degrees Before  
Top Dead Centre, Inlet valve  
closes 40 degrees After Bot-  
tom Dead Centre, Exhaust vale opens  
46 degrees BBDC, Exhaust valve  
closes 6 degrees ATDC.  
Ignition advance: 20 degrees mechanical plus 20  
degrees vacuum at 2,500 rpm.  
Ignition timing set with points opening 7 degrees  
BTDC with breaker gap at .020 in.  
Plugs are ½ in reach, 14 mm thread with .028 mm  
to .030 in gap.

## Half a Chance

Lisa Gilbert is married to member Steven Ziegler.

As a child growing up I spent most of my school holidays at Moama camping with another eight families on the land that is now Cottonwood Caravan Park. It was a time when the Murray River had steep banks and few beaches, and no 5 knot signs. My dad had a small fibreglass runabout - no name, just SH 80, its registration. It always looked a little out of place on the beach where there were a couple of Seacrafts and a flashy white boat with red wings complete with a black Mercury outboard. SH 80 definitely paled to insignificance when Lenny Retallick drove up onto our little beach wearing sunglasses like Dirty Harry in a boat called *Suicide* looking for 'Billy Gilbert'.

Needless to say I am all grown up now and those sunglasses Lenny had on have now been in fashion twice over since then - but still after all these years I remain drawn to wooden boats. There is just something about them, and there is even more something about them with a great sounding engine.



Glory days - Half a Chance in better times

Steven came home on a Saturday afternoon a bit excited, a bit coy and he definitely had that "I've found something I really want" look all over his face. So the story starts with "Come for a drive with me - not far, and we can get that outdoor furniture you really want." I knew something was up.

We pulled up outside the outdoor furniture place alright, but next door just happened to be the saddest boat for sale that I have ever seen in my life, and the trailer was not much better. Having spent most of my life around boats, sometimes begrudging their drain on the bank account, I knew in my heart that another one would come along and this poor thing, a Simpkin, was it. I was horrified.

Lets's just say in our household Steven is the visionary! We looked, I looked, they looked.

I mostly looked with my hand over my mouth and shaking my head. *Half a Chance* had some big damage to the underside of the boat and transom, but still had its windscreen along with a few bits and pieces but more importantly, with some pictures of it in all its glory. I have to say then and there I knew it was going to find a home with us . . . it was fate. After a couple of weeks and a bit of negoti-  
ation, *Half a Chance* was ours - straight to the factory to plan its total reconstruction. First things first - we had to see Keith Simpkin and Keith Simpkin had to see the boat.

Steven had spoken with Keith a couple of times and to make sure all would go together well we needed his advice and expertise. We headed over to his place for 'show and tell'. A slide show ensued with the first picture up unbelievably being *Half a Chance*. Amazing. There it was in the early 1970's, with a very dark green, almost black hull, trimmed with a mustard deck line to match the mustard colour trailer. Very groovy!

After a very informative and lovely visit, we left with the knowledge that all was not lost with *Half a Chance* and that it could most definitely be brought back to life. It was a very good feeling.

Back to the factory, work commence first with the trailer - a full makeover, new brakes, replacement stays, and to be honest, if the boats looks half as good

as the trailer when it is finished, it will be absolutely magic. Steven has kept is fairly original, adapting to adhere to regulations and safety requirements but changing the colour to black. The aim is the same for the boat. At the Sanctuary Cove boat Show we found some fantastic gauges and ideas for the trim.

Being an Engineering Patternmaker by trade, Steven is absolutely meticulous and never takes a shortcut. The deck is now stripped, the hull waiting to go to Pompeii's for a full repair, rivet tightening and recork followed by a planned trip to Peter Adcock to replace the deck as soon as we can get to it.

It just takes time and money - isn't that what they say?

Work has slowed on *Half a Chance* recently,

## Lisa Gilbert

with a new home coming along, renovation taking priority and a couple of other projects running simultaneously, but once the new year comes in it will be back on track.



The day the boats was picked up - cav plate torn off and holes in the transom

I thought we should change the name but Steven said absolutely not - so *Half a Chance* it stays!

I just have to keep saying to myself, as the bank account gets drained once more, it will be fantastic when it is finished.

Steven and Lisa will update us occasionally with the progress reports on the restoration of *Half a Chance*.



Hull stripped and ready for restoration



## Hotting up the Holden for marine use

**This guide will help an amateur with a knowledge of basic mechanics to double the Holden output to 130 bhp plus.**

Australia's own engine, the Holden, has been developed to an extraordinary degree in its brief 13 year history.

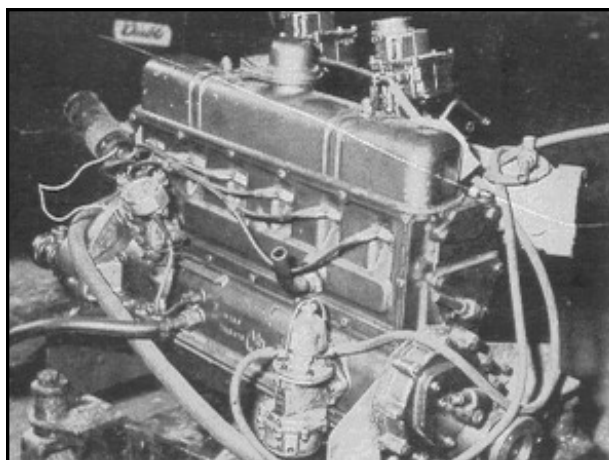
This article, in two parts, will help the amateur and professional to increase the output of the standard "iron head" Holden from a basic 60 bhp or 75 bhp at 3800 - 4200 rpm to 130 bhp plus. A maximum of 202 bhp has even been achieved but this is beyond the amateur with limited equipment.

All modifications that we suggest will give an increase in performance but should not detract from the reliability of the engine. The Holden has many advantages over engines of similar capacity - between 132 cu in and 138 cu in. It is far cheaper, for example, than the Alfa Romeo, Ferrari and Maserati. Among its many other qualities is the availability of spare parts, the simplicity of components and the ease of modification. It is also ideally suited for marine use.

To obtain a greater output than 130 bhp a hot head can be fitted. The extra cost, upwards of £160, is worth the 50 bhp increase if racing is considered.

All this indicates the great potential of this relatively small engine.

There are several marine conversion kits with various components for marinising the Holden now available. The kits contain such items as water cooled manifold, multiple carburettor manifolds, re-styled sumps, thrust unit and water pumps. Prices vary with the components in the kit.



The original front end has become the drive end and the propeller drive wheel can be seen lower right with the thrust unit. The loose lines are for oil, fuel and water.

In addition there are firms which produce their own converted and modified Holden. These cost up to £1500 each.

This article can be applied to all seven standard Holden engines. The first Holden was produced in 1949, the FJ and FE were launched in the middle fifties and from 1960 up to the present the FB, FC, EK and EJ models have been made available.

The last four are the "big bore" engines of 138 cu in which are ideally suited to high speed modifications.

Before 1950 the Dodge Six and side-valve Ford V8 were the most popular engines fitted in high-speed boats.

The Holden which races in the under 155 cu in motor class, quickly became popular with enthusiasts with a limited budget. Compared with the Fords and Chryslers the Holden is not a big engine but fitted to a boat it will pull two skiers easily and is more economical to run.

To get detailed and accurate information on converting and modifying the Holden, SEACRAFT went to top Holden engineering shops for information. The advice they offer is given here.

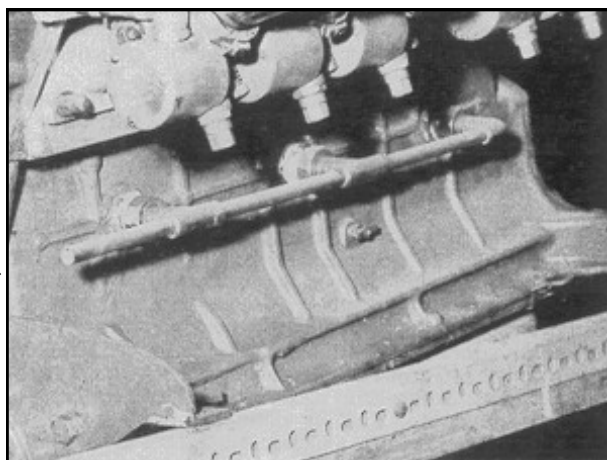
A 1954 FJ Holden engine can be bought as cheaply as £45 second hand and in good order. They can be bought out of wrecked cars or stripped from a going car. The second hand engine in good condition will prove highly satisfactory and reduce costs considerably. A new EJ model will cost about £240.

The second hand engine will probably need reconditioning to a degree and the engine will have to be stripped before conversion can begin. As soon as this has been done the

engine is ready for some of the first of many steps in bringing it up to the required 130 bhp.

First item on the agenda is the removal of the standard GMH timing cover and replacing with an aluminium casting thrust

assembly. This



One of the most popular methods of ensuring constant cooling and an even temperature around all cylinders is to use the welch plug holes as water inlets and join the three by a common line.

be bought as a unit. It costs approximately £23 and contains oil seals and thrust bearing. The thrust assembly eases the load of the propeller shaft from the crank shaft and reduces flexing in the crankshaft.

The next important step is to either widen or deepen the sump. This is done to increase the oil capacity of the sump thus keeping the oil temperature at a minimum and assist in high speed lubrication. This is called the "wet" sump. Widening or deepening depends on the position the engine will be mounted in the boat.

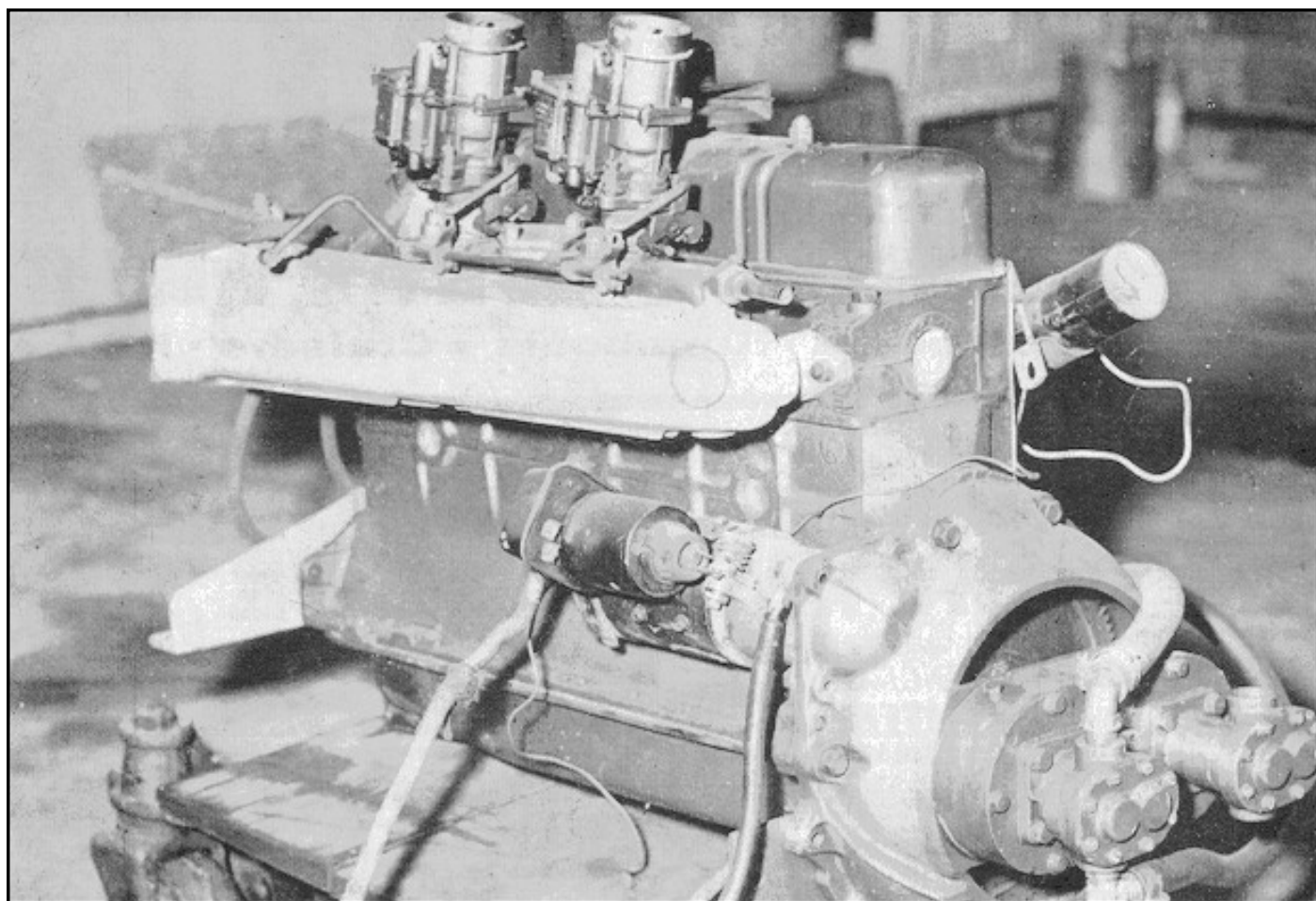
Whether widening or deepening, the capacity of the sump should be increased from the normal six pints to 1½ to 2½ gallons. Widening the sump is preferred by most speedboat men because it allows the engine to sit lower in the boat, distributing weight more and decreasing the height of the engine box. At present there are no larger sized sumps marketed as a stock accessory and the work will have to be done privately or by any of the expert speed shops.

The "dry" sump is a necessity on the out and out racer and will be discussed later.

After altering the sump, the oil pump pick up will have to be adjusted to pick up oil at the lowest point of the sump - usually the thrust end of the crankshaft. A gauze filter will have to be fitted to prevent filings or foreign bodies entering the lubrication system.

Special front and rear engine mounts will probably have to be manufactured to suit the thrust of the engine, although standard Holden engine mountings could suffice. Some firms market front and rear engine mounts as an integral unit of their converted Holden.

## Gordon Sinclair



A converted Holden ready for fitting into a ski boat. This one is capable of 130 bhp with the twin carby setup. As is normal, the original aft end of the engine becomes the "front end". At the new "front end" can be seen twin high powered oil pumps connected to the sump.

Also, nylon timing gears are recommended for all except the flat-our racing machine. They cost £4 / 7 / 6 each.

The standard fuel pump will work quite satisfactorily if the vacuum wiper section is blocked off. A Chevrolet fuel pump will bolt straight through to the block because it has no vacuum wiper bottom half and can be used in place of a standard pump.

It is not considered wise to raise the oil pressure above 40 lb because it will result in excessive wear on the distributor and oil pump drive.

### COOLING SYSTEM

After lubrication, the next important step is the "hotting" of the cooling system. Common practice in marine engines is to run the salt cold water (or fresh as the case may be) into the block as low as possible with the outlet as high as possible on the head to prevent steam locks.

Some owners have utilised the standard water inlet of the Holden at the forward end but one of the most popular methods is to use the three welch plug holes in the middle of

the manifold side of the block as water inlets. Copper pipes approximately 1 in in diameter are fixed to a plate fitted over the plug holes. The advantage of this method is that the water is kept at a similar temperature around all cylinders.

There are also various suggestions for the outlet flow of water. One of these is to drill and tap the head at its highest point and water is removed through copper tubing.

The common method used on Holdens is to knock out the welch plug at the rear of the head and fit a copper tubing and plate.

If the boat is going to be used for a general purpose runabout or skiboat, the belt driven water pump is strongly recommended. This is because at slow speeds the water will not circulate through the system quickly enough to cool the engine adequately and severe damage could be caused.

A water temperature gauge is an important item sharing equal importance with the oil pressure gauge. Both should be in the boat driver's clear view. A system popular in Queensland is the use of two inch diameter red warning light for oil pressure. The tail

light from a car is ideal because then there'll be no mistaking a fall in oil pressure in the heat and pressure of a race.

With the above work carried out, the motor would easily tow two skiers but to obtain more torque, special attention to the head will be required.

Shaving the head of the FE Holden by .060 in will raise compression to nearly 8:1 and on earlier models will raise it to 7.25:1. For general skiing work there is no need to go above 8:1 compression.

### PORTING AND POLISHING

A tremendous increase in performance will result from careful work on the head, including combustion chambers, and the inlet and outlet ports.

The whole basis for streamlining and polishing is for the improved gas flow and "breathing" which is hampered by roughness and sharp corners.

A coarse grindstone or steelcutters fitted on a high speed drill can be used for the first part of the job. The second and final part involves using carborundum impregnated