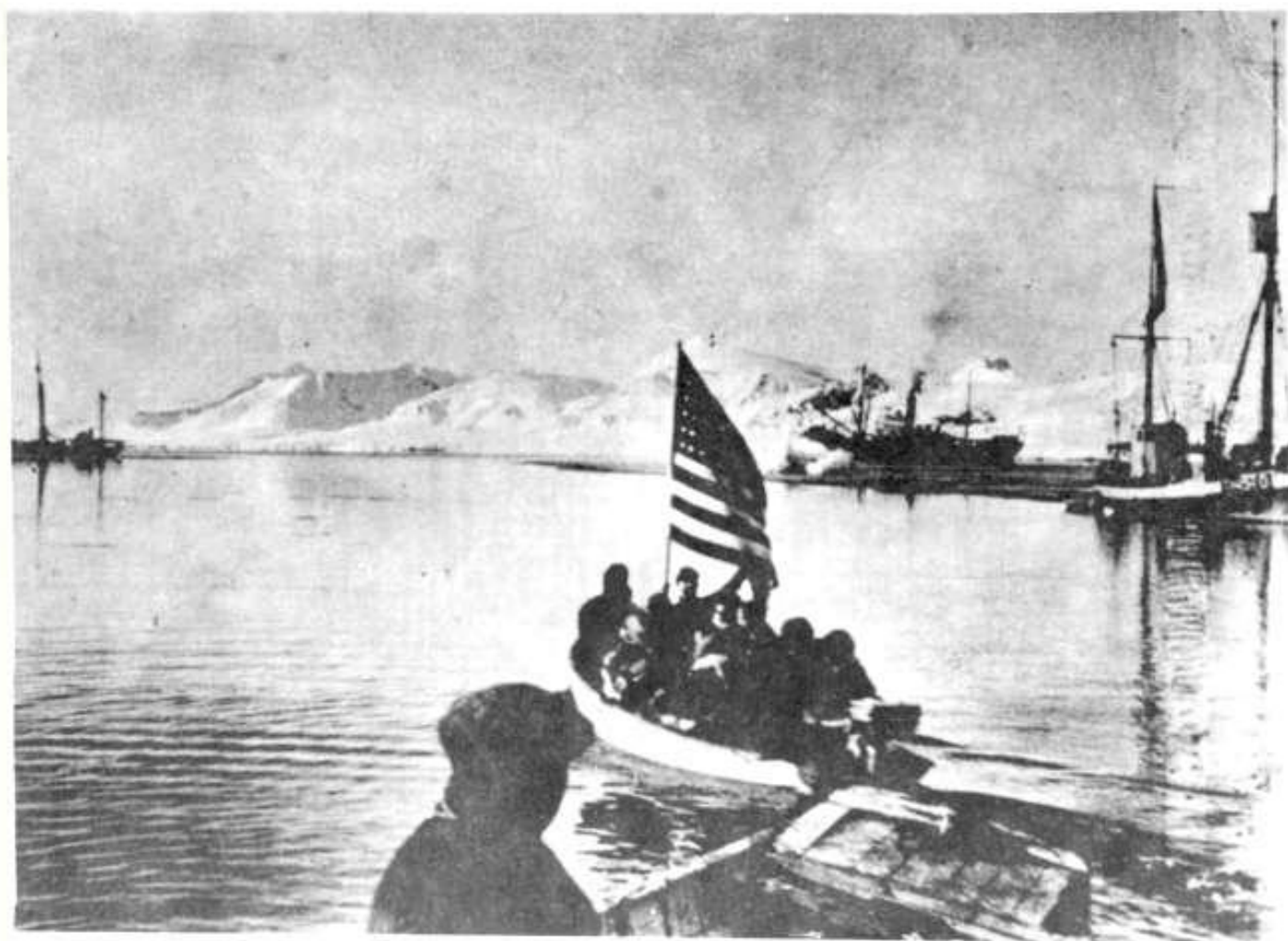


The **ANTIQUÉ**
OUTBOARDER



JULY

1979

The Antique Outboard Motor Club, Inc. is incorporated in the State of Texas as an Educational Institution. The Club is devoted to people all over the world who are interested in the search for, restoration and preservation of old-time outboard motors. Regular membership dues are \$12.00 per year. Other membership information is available on request from Walter Verner, 4304 Harding Road, Nashville, Tennessee 37205, U.S.A.

CLUB OFFICERS AND PUBLICATIONS STAFF

President	Walter E. Ellis 3724 Briarcliff Road Kansas City, Missouri 64116
First Vice-President	
Second Vice-President	Riggs Smith 346 Janice Street Endicott, New York 13760
Vice-President, Technical Services	Eric Gunderson 515 West Main Street Grass Valley, California 95945
Secretary	Milt Moos 369 Ottawa Avenue Westerville, Ohio 43081
Treasurer	John Harrison 1000 Northwest 54 Street Miami, Florida 33127
Membership Chairman	Walter Verner 4304 Harding Road Nashville, Tennessee 37205
<i>Antique Outboarder</i> Editor	Walter E. Ellis 3724 Briarcliff Road Kansas City, Missouri 64116
Newsletter Editor	Chris Eiring 326 W. South Street Oconomowoc, Wisconsin 53066
Historian	W. Jim Webb 2560 North 97 Street Wauwatosa, Wisconsin 53213
Test Editor	Bob Zipps 182 Brentmoor Road E. Hartford, Connecticut 06118
Curator	Richard A. Hawie 31 Hillside Drive Easton, Connecticut 06612
Special Features	James L. Smith 330 O'Connor Drive Toronto 6, Ontario, Canada
Motor Registration	Donald Peterson 710 South McLoughlin Street Oregon City, Oregon 97045



THE ANTIQUE OUTBOARDER CONTENTS

Walter E. Ellis, President (In Memoriam).....	page 2
Letters to the Editor.....	6
First Pull Start by Bob Zipps.....	9
Test Report: 1928 Model TR-40, Bob Zipps.....	10
A Great and Costly Mistake by W. J. Webb.....	12
Safety Tips for High Speed Boaters by Ron Johnson.....	14
Who and What is Over the Hill?.....	17
Museum Exhibits Vintage Motors.....	18
EZ Motor Stand by Emmett Walls.....	20
Martin Motor History by George Martin.....	22
Biographical Notes of George Martin.....	24
Longwood, Florida Meet by Jim Wickert.....	26
Eastern Penna Regatta by Bob Grubb.....	27
Frustration by Le Roi Russel.....	31
Figuring Prop Pitch by Warner Turner.....	32
Something to Do by Tom Glock.....	33
Notes from the Curator, Dick Hawie.....	34

Front Cover: Com. Donald B. McMillen and crew in 1924 Artic exploration -
Picture contributed by Warren Conover

Back Cover: Walt Ellis, 1976 Second National Bicentennial Meet trophy
presentation

The Antique Outboarder

Volume 14 No 3

JULY 1979

Published quarterly by The Antique Outboard Motor Club, Inc.
Publication offices—3724 Briarcliff Road, Kansas City, Missouri 64116

Single copies: \$2.00 except as included with Club membership.

Change of address should be forwarded two weeks in advance and zip code number should be included.

© A. O. M. C., Inc., 1979. All rights reserved.



Walter E. Ellis, President

In Memoriam



This picture of Walt with his grandson, Peter Wall, was taken by his daughter, Phyllis, at a farm show in February 1979.

Walt's death due to heart failure in St. Luke's Hospital on April 12th, 1979 was certainly not in his plans. He had made plans to move June 1st to a larger home that had a large basement to hold his motor collection. There were two large lakes on the forty acres on which to test his engines.

He expected to continue as president of the AOMCI, keep THE OUTBOARDER coming out on time and give Chris Eiring help with the newsletter. He wanted to attend as many chapter meets as possible and display his new car license plates - "AOMCI #1". And, of course, have a little time for motor restoration.

During his two and one half years as president it was very important to Walt that AOMCI not merge with any other organization, that the club remain non-profit, that advertisements, with decals an exception, be published in the newsletter, that club members help to keep outboard engine prices from escalating, and that the club work continue on a voluntary basis.

Walt joined the Navy in 1942 and served as an electrician's mate on a floating dry dock in the New Hebrides Islands. After the war he returned to his job with United Motors Service, but soon joined the sales force at Delco Products, Division of General Motors.

Walt had retired from Delco Products on March 1, 1979 where he held the position of Western Zone Manager. As a sales and service representative of industrial generators for Delco, he had traveled extensively from top of oceanic oil platforms to depth of Minnesota iron mines. He was well

know and liked by his co-workers and customers around the country. He was a friend of top personnel as well as those working in the shop.

His son, Ron, who is a geologist, was at first a recipient of rocks Walt gathered during his travels. After Ron and Clarence Sitton organized the MAPS Chapter, Walt gathered larger rocks --- outboard motors which between Ron and Walt total about 170!

Walt bequeaths his collections of outboard motors, motor parts, boats (including Warren Conover's canoe), tools, and guns to Ron.



1974 Spring MAPS Chapter Meet at the Lake of the Ozarks - Walt Ellis holds down the hydroplane while the driver, Casey West patiently waits for Ron Ellis and Gene Yonker to make adjustments.



1977 Fall MAPS Chapter Meet at Lake Taylorville - Walt receives a special trophy for Walt's and Phyllis' efforts in publishing THE OUTBOARDER. Walt is wearing Gert Van Vleet's stocking cap while Ray Hatton and Charles Kozelsky enjoy the fun.

Recollections by Walt "Ron" Ellis

It all began back around 1946 as I recall. This was just after the Big War (W. W. II) which, according to my father, Red (later to be known by many as Walt Ellis), was won by the United States Navy almost single-handedly. As my uncle, Clayton Ellis, had also won the war in the Navy, I was a thoroughly convinced nine-year-old Navy "man".

I remember being in my uncle's basement with my dad and uncle working on a mysterious outboard engine. It had two cylinders with a knob on the flywheel. The consensus of opinion was that the knob had to go; we had to become modernized and use a "pull string". Well, the old girl was modified with a pulley attached to the flywheel and the Ellis's first Elto was ready to go. The engine was used successfully many times except for those few instances when the string was pulled and the timer was in the wrong direction. Usually, I learned a few old Navy terms from my father when this occurred.

As the family fishing trips advanced further into northern Minnesota and Canada, a more powerful engine was needed and, sin of all sins, the Elto was sold and Dad bought a used Mercury Rocket. I remember two things about the Mercury: Dad worked on it a lot; and it was once dropped into the lake while removing it from the boat, whereupon Dad jumped in, retrieved it, clamped it to the transom, and fired it up. I always thought my dad was a master mechanic, but that was far out! He decided to fish a lake called Yellow Girl one day and after what seemed an eternity to me, he turned the Mercury toward home after only 12 miles of a 28 mile trip. I think he had some doubts about the Mercury's ability to make the journey in one day.

Next came the Scott Bail-a-Matic, 1954, his first new engine. He would try anything once! We had three, all the same year - my father had a great deal of patience. We still have the third one, and used it every year until 1974 when we retired it.

After the Scott, came a succession of Johnsons and Evinrudes, Lyman and Thompson lapstrake boats, and his old favorite Evinrude Sport 16.

Being a gregarious sort, a builder and a dreamer, he naturally became an old iron collector and restorer, which of course led to his association with the A.O.M.C.I. The association of old iron and old boats led to the final tally of 175 engines and 10 boats. I remember telling him, "Dad, you need to be a little more selective", and his answer would always be, "Son, that engine was just sitting out in the weather and some one in the club can use the parts".

He later became your club president and with his life-long First Mate Phyllis edited and published The Outboarder and finally, both the magazine and the Newsletter.

His positive attitude about the future, and his love of family, work, people and all aspects of life have affected all who knew him. His work and ideas will be carried on by his family, and the back hills of Missouri will still echo the sound of his old iron. Now, if we could just find an old Johnson hull!

We miss him and I know many of you will miss him also, but let me assure you that wherever he may be, he is reminding some one that he still needs a Giant Twin and a Cross Radial. If he had one regret, I know it would be that he did not get to meet and associate with more of the fine people of the A.O.M.C.I.

Below are included just a few thoughtful messages from AOCMI members.

Walt Ellis is going to be missed a great deal by all of his many friends in Antique Outboard Motor Club, especially those who knew him well. Personally, I did not know Walt for much over a year, but riding to Clayton, New York with Walt, his wife, Phyllis, Mrs. Conover, and Ron Ellis, Jr., it really seemed that I had know Walt for many years. I am sorry that I did not have the pleasure of meeting him some years earlier in my life while I was more active in boats and motors.

Walt was one of those rare individuals - knowledgeable, reliable, sincere - whom one does not meet often during his entire life span.

Walt will certainly be missed by not only his family but by his many, many friends. The numbers of those friends are a tribute to Walt. He will be sorely missed. There is no doubt that Walt left his friends, his family and the place in general better for his having been there.

John Harrison

I certainly enjoyed corresponding with Walt, though we never met except on the pages of our letters. I hope that you will take some comfort in knowing that Walt will be missed by a lot of people who are just names on the bottom of windy letters about outboard motors.

Richard Hawie

* * *

To the members of AOMCI:

I am very saddened and shocked to learn of the sudden passing on April 12th of our leader and friend, Walter Ellis.

Walt's efforts to the club were long-time and continuous. His contributions were many. He provided the necessary leadership. He and his lovely wife, Phyllis, provided us with many fine issues of THE ANTIQUE OUTBOARD-ER magazine. He gave us our Second National Meet. He and Phyllis gave us recent issues of the AOMCI Newsletter. He answered tons of mail. Most of all - he came to the Third National Meet which gave us the privilege of meeting him in person. What a guy!

Walt and Phyllis did so much that the void is overwhelming. With lots of help from the various members within AOMCI we will have to spread Walt and Phyllis' efforts around, probably over five states and fifteen members. I do hope to assure that the AOMCI club activities are carried on in the fine tradition that Walt and our past presidents have established.

My sympathies are extended to Phyllis, Ron, his wife Lydna, Walt's daughter Phyllis Louise, her husband John Wall, and three grandchildren.

Riggs Smith, AOMCI Acting President

* * * * *

Table of Content's pictures- Upper left to right: John Van Vleet and Walt Ellis at MAPS 1977 June Meet; Phyllis and Walt at 1976 National Meet Banquet. Lower: Two of Walt's boats, Evinrude Sport 16 and Lyman.

CHAPTER PRESIDENTS

Yankee Chapter	Dick Fuchs	New England
Knuckle Busters	Tom Luce	New Jersey Pennsylvania
Mid-West Chapter		
Florida Chapter	John Harrison	Florida
Long Island Ancient	John Gustaffson	Long Island, N Y City
Outboard Mariners		
San Francisco Chapter	Eric Gunderson	California
Twin Cities Chapter	Bob Peterson	Minnesota
Mid-America Prop	Ken Ponciroli	Missouri and others
Spinners		New York State except
New York State	Sam Vance	N Y City & Long Island
Texas Chapter	Ted Bieber	Texas
Central Ohio Chapter	Milt Moos	Ohio

LETTERS TO THE EDITOR

From Ron Johnson's wife, Linda, Minneapolis, Minnesota....

As this project progresses, it gets bigger. It's going to take more than one stamp to mail it. When you suggested to Ron that he write an article, I thought to myself that that should be quite a project and take awhile. Well, it did take quite awhile, but not as long as I would have thought because Ron broke his leg in December and had the extra time to think on it. He's going back to work on Monday, so we thought we better wrap it up.

I personally think it is very funny that you should ask him to do the article. It's sort of like asking a pyromaniac to do an article on fire safety. Almost everything in the article he has done wrong with the obvious results. Bob Peterson caught it on film the time that he wrapped the steering wrong and sunk a boat. The time he was caught without a fire extinguisher was a little panicky from what I understand. We've had cables come loose, the motor plate on the transom come half the way off and various things happen. It tends to make life exciting, if you like that kind of excitement. I hope that the article will help other people so that they won't have to learn by experience. (See Safety Tips, p 14)

From Sam Vance, Unadilla, New York....

I have many projects to be worked on but not enough time allocated right now. I took the flywheel off my 1931 Super C and let the high school machine shop teacher clean it up. He made it a project for his class. I asked him to cut a skin cut off the surface, just enough to clean up the pits. Boy, he did such a terrific job of polishing the surface that it doesn't even need replating. Now I have to restore the bal- of the engine. I'm going to dig out a few more flywheels for resurfacing

From Bruce Rippeteau, Denver, Colorado....

While on archaeological business, I visited the Vancouver Maritime Museum on the sound, in Vancouver, B. C. and was able to meet the Director, Michael Duncan.

The Maritime Museum has some 60, largely unrestored, antique outboard motors, only 2 of which are on display. One is an unrestored Evinrude, apparently of the 1920's era and circa 5 hp, which is displayed on a little dory. The other is on their outstanding display of a Royal Canadian Mounted Police arctic boat where this outboard motor was used for coastal and ice work. This good-condition, antique outboard motor is a rare Bendix "Eclipse" (air-cooled), of 1935-36 manufacture according to conversation with the guide.

Mr. Duncan has invited us to consider holding an AOMCI meeting at his museum on the sound. Vancouver was a glorious place with small craft freighters, and mountains leaping out of bright water. We ought to look into a future meeting there, at the Maritime Museum, with our Canadian friends.

From Bob Thornton, Castleton, Virginia

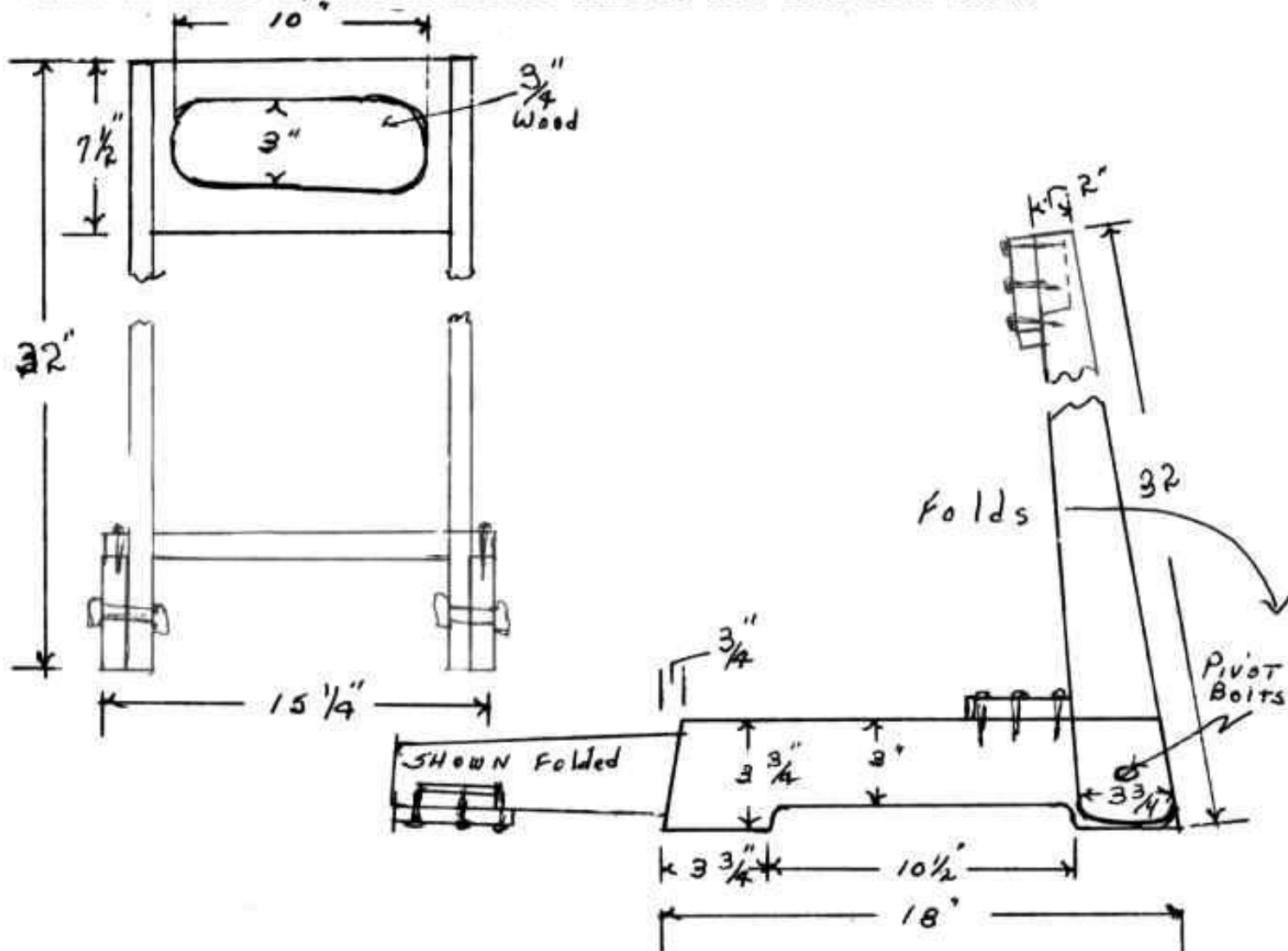
After a long time in development, after making the outside belt driven mag. and an extra heavy drive shaft, the PR has started to show the promise that I always knew it had. Next year with a new lighter boat some prop testing and a little motor tuning, I feel that it will again be in contention. Even as it is now just running me, it put on a rather

to the Editor continued -

good showing in the last two weekends of racing this year. (See "Who and What is Over the Hill?")

From Tom Glock, Allentown, New Jersey....

Here is a sketch of a motor stand that I got from an original Lockwood - Ash, Lockwood and Elto Dealer in Lakewood, New Jersey. He is 80 plus years young. It is made of hardwood and the base folds up and is rugged enough for engines to size Class "B". He says it was a Lockwood-Ash stand c. 1924, and that he used it (strapped it and engine on running board of Model T) and exhibited same at New York Boat Show.



From Harold Polk, Amityville, New York....

If you haven't heard any good finding of rare motor stories lately, see how this one grabs you. On Sunday, March 18, 1979, the following ad appeared in the New York Times:

"Circa 1925 Elto Superior light twin outboard motor designed & built by Ole Evinrude in the orig. wooden box & tool kit. EXCEL. cond. 215-247-7558"

I read this ad with great interest, but being a true Yankee trader and experienced AOMC wheeler and dealer, decided to let it cool awhile.

The following Friday I had my son call from his office, saving me a toll call, and he got the particulars. The man was very friendly and told the following story:

"He drives around town picking up discarded articles (probably on

to the Editor continued -

garbage pick-up days). One day he stopped in front of a certain house and a little old lady ran out and asked if he would be interested in an outboard motor? He wasn't particularly interested, but agreed to take a look. She invited him into the house showed him the above described gem. She said all she wanted was to get it out of cellar and he obliged, for FREE. Having no use for this hunk of junk, he advertised it as above. A man named Arvid Myhre from Flemington, New Jersey (phone 201-782-5150, in case anyone is interested) bought it".

The only other story that I have actual knowledge of occurred in a neighboring town. An old gent died and his estate called in the local Johnson dealer to help them dispose of his marine holdings. The dealer found an old rowboat tied out back with a Johnson J-25 attached. The deceased liked that model so much that he had another J-25 in the attic still in the packing case. Needless to say the dealer latched on to it, removed one side of the case and put it on display in his showroom, where it still resides to this day (some 10-15 years later). I have inquired as to a possible purchase, but the dealer says he wouldn't take \$1,000 for it and he doesn't have to worry about getting that much from me.

In closing, I would like to suggest that you include a paragraph in OUTBOARDER or Newsletter telling members to whom the dues should be sent. I had a problem last year in this respect.

EDITOR'S NOTE: Send dues and address changes to --

Walter D. Verner, Membership Chairman
c/o Ingram Barge Co.
4304 Harding Road
Nashville, Tennessee 37205

From Riggs Smith, Outboard Chairman, Shipyard Museum, Clayton, New York..

A fun-filled long weekend of August 17 thru August 19th, 1979, will probably be the most remembered of all of the past antique boat shows at the Shipyard Museum.

There are more activities being planned than ever before. There are classes for the outboard motor, demonstration events, and even a cruise again this year to Grindstone Island. The committee expects the flea market to be larger, also.

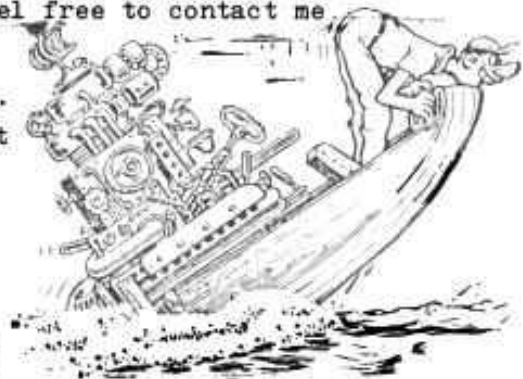
All AOMCI members and friends are welcome to attend and bring out their antique outboards as well as their boats. If you don't own an antique outboard boat, just bring your old motor. Antique outboard motors on modern boats will be welcome to participate in the wooden boat cruise.

For further information, please feel free to contact me

From Walt Verner, Nashville Tennessee ..

Here's a picture of another rig that C.B. Hassenboehler and I put together. You can see, this one tops everything and couldn't have been assembled without club help.... reversible crankcase obtained from John Toprahanian, automatic cylinder head from Ron Ellis, swivel pistons from Bill Salisbury, radar borrowed from my barge line, coffee maker from Charles Hansen and the stomach pump from Dr. Walter Otto.

Thus, another really great project that would not have been possible without our organization!



PLENTY PURPOSE POWERPLANT

Although it weighs only 993 pounds, this exciting new outboard motor boasts such features as a reversible crankcase, automatic cylinder head, swivel pistons, radar, coffee-maker, and stomach pump. Not for children

First Pull Start

by Bob Zipps

This wasn't just any one of those hot, lazy, Saturday afternoons in early August. This one was full of excitement. I had just pushed the boat away from the dock. My son was in the bow and I was in the stern. On the transom hung a real giant of a motor, the model TR-40 Johnson Giant Twin.

The reason for all the excitement was that this was the Third AOMCI National Meet, and my motor was about to be judged.

I had spent countless hours restoring the motor and I had finished the restoration the same morning that my family and I were going to leave for Clayton, the site of the National Meet. So the Giant Twin went right from my workshop and into my car without being test run.

The model TR is a motor that I had wanted ever since I joined the club in its first year. No one was ever happier than I was, when the day came when I was to get the motor. But getting the motor was only half the battle, next came the restoration. Now as it turns out, my motor does not have the original tower housing and lower unit, and I thought quite a bit about it before getting the motor. But the more I thought about it, the more it became obvious to me that the Johnson Factory recommended using the Model "P" lower unit as a substitute, since the original design was so weak. In fact, the Johnson Factory made adapters to mate the Giant Twin powerhead to the Model "P" lower unit. Since the factory favored it, why shouldn't I go along with it? So I did.

With that behind me, I went to work selecting a lower unit to use. I was going to use the Model PR lower unit (without the passage for the underwater exhaust) because the "TR" has a muffler with above water exhaust. But I looked at several photos of "TR" Giant Twins that had substitute lower units and they all had the Model "P" regular service model lower unit (with the passage for the underwater exhaust), so that is what I used.

After a complete restoration from flywheel to skeg, and a decal from John Harrison, I was ready!!!!

We paddled the boat to deeper water to be clear of the weeds. The motor had been gased up on shore with a mixture of one pint of oil to a gallon of gas. When we cleared the weeds, I tilted the motor down. The judges peered down from the dock with their clipboards and scoresheets ready. I turned the shut-off valve below the cast aluminum gas tank and the enormous float bowl began to fill. When the pin stopped rising, I held it down slightly with my finger until the float bowl overflowed, which primed the motor. The boat was a deep, rugged, 13 foot aluminum boat, but was a feather compared to the size of the Giant Twin. My son Dave sat as far to the bow as he could to offset the combined weight of me and the motor.

The needle valve was opened $1\frac{1}{2}$ turns - as I had no other instructions, I used what was written on John Harrison's decal. The magneto lever was over the carburetor, and the carb lever was all the way down in the choke position. Now, had I forgotten anything??? I went over everything in my mind; I even checked the transom clamps one more time to be sure that they were tight.

I slipped the knot in the rope sheave and wrapped the cord around. The moment had come! Bracing myself on both the rear seat and transom, I gave a hard pull on the starter cord.

What happened then was beyond my expectations, and I still find it hard to believe. The Giant Twin leaped to life on the first pull!! The First Pull!! Since I didn't expect it to start on the first pull, I had my hands full when I realized that almost instantaneously the light aluminum boat was on a full plane. The boat was running along like a scared rabbit, and the motor was pounding out the most beautiful sound you could ever imagine. I was half looking where I was going, and half playing with the needle valve and throttle. I didn't want the motor to die while it was being judged.

After making a couple of roadrunner-versus-the-coyote type passes at the dock, I hit the kill switch on the magneto handle and brought her in. I just couldn't stop saying, "What a ride!! What a ride!! And starting on the First Pull too!!"

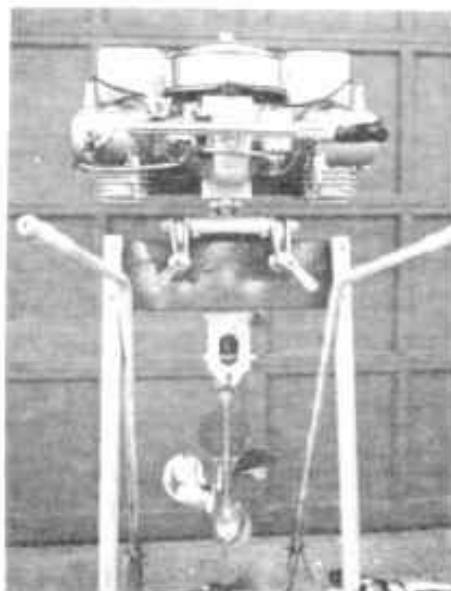
As you can imagine, the Third National Meet is one I'll never forget

* * *

TEST REPORT: 1928 Model TR-40 JOHNSON "GIANT TWIN"

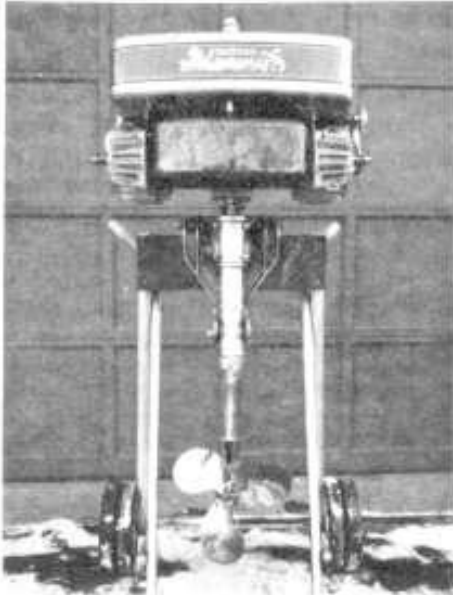
contributed by Bob Zippa

LAKE TEST #1



Front view of the Mightly Giant Twin. Note the compression relief linkage, which was introduced by Johnson in 1928 in this model.

LAKE TEST #2



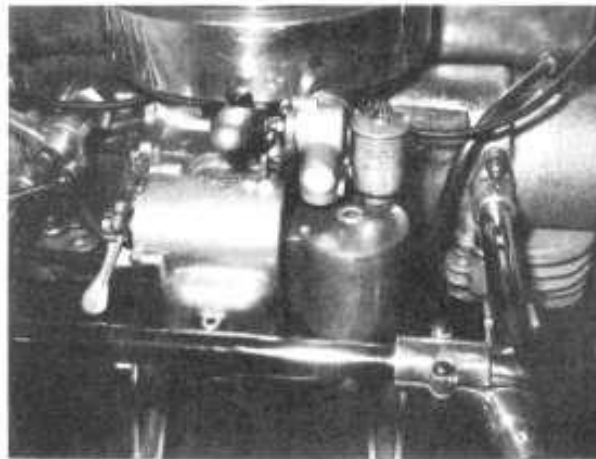
This is the view of the Johnson Giant Twin that all other outboard boaters had during the summer of '28.

LAKE TEST #3



Side view of the Giant Twin which shows the "P" lower unit adapted as recommended during the Giant Twin's hay day.

LAKE TEST #4



This is to give you an idea of the size of the Giant Twin. See that trinket resting on the float bowl cover? It is a complete model "0" carb from an early Johnson Lightwin.

A Great and Costly Mistake

by W. J. Webb

Every outboard manufacturer that I ever knew of had some closet skeletons that did no one any good and were best forgotten by all who made or bought them.

Evinrude produced one of these clunkers in 1916 - a twin cylinder, 4 cycle monstrosity that only a real marine engineering expert could run. The picture makes it look like a trim outfit, but the motor never ran like the picture. It developed a claimed 4 horsepower, weighed close to 90 pounds and sold for \$125.00. It was call the Big Twin.

The 1916 Evinrude catalog had this to say about it:

"The Evinrude Four Cycle Twin combines with the opposed-cylinder construction, the well known efficiency of the four cycle principle.

"A motor of the 4 cycle type makes one explosion to every two revolutions of the flywheel, whereas the two cycle motor makes an explosion to each revolution.

"Four horsepower is developed, permitting the use of a larger boat, f desired, and providing a reserve store of power for emergencies.

"Speed of 8 to 10 miles an hour can be obtained on a round bottom row-boat or skiff - 10 to 12 miles per hour with a canoe.

"Vibration is eliminated by the opposed cylinder construction which takes up all reciprocating motion. (Webb Note: The guy who wrote that copy couldn't have been near the motor when it ran!)

"Starting is easy and the motor 'picks up' quickly and runs with a smooth hum.

"The control of speed, or flexibility, is striking. By means of the 'butterfly' valve in the carburetor, the Twin can be throttled down to a speed as low as one mile per hour.

"Lubrication - the same system of mixing the lubricating oil with the gasoline as employed in the single cylinder models is used.

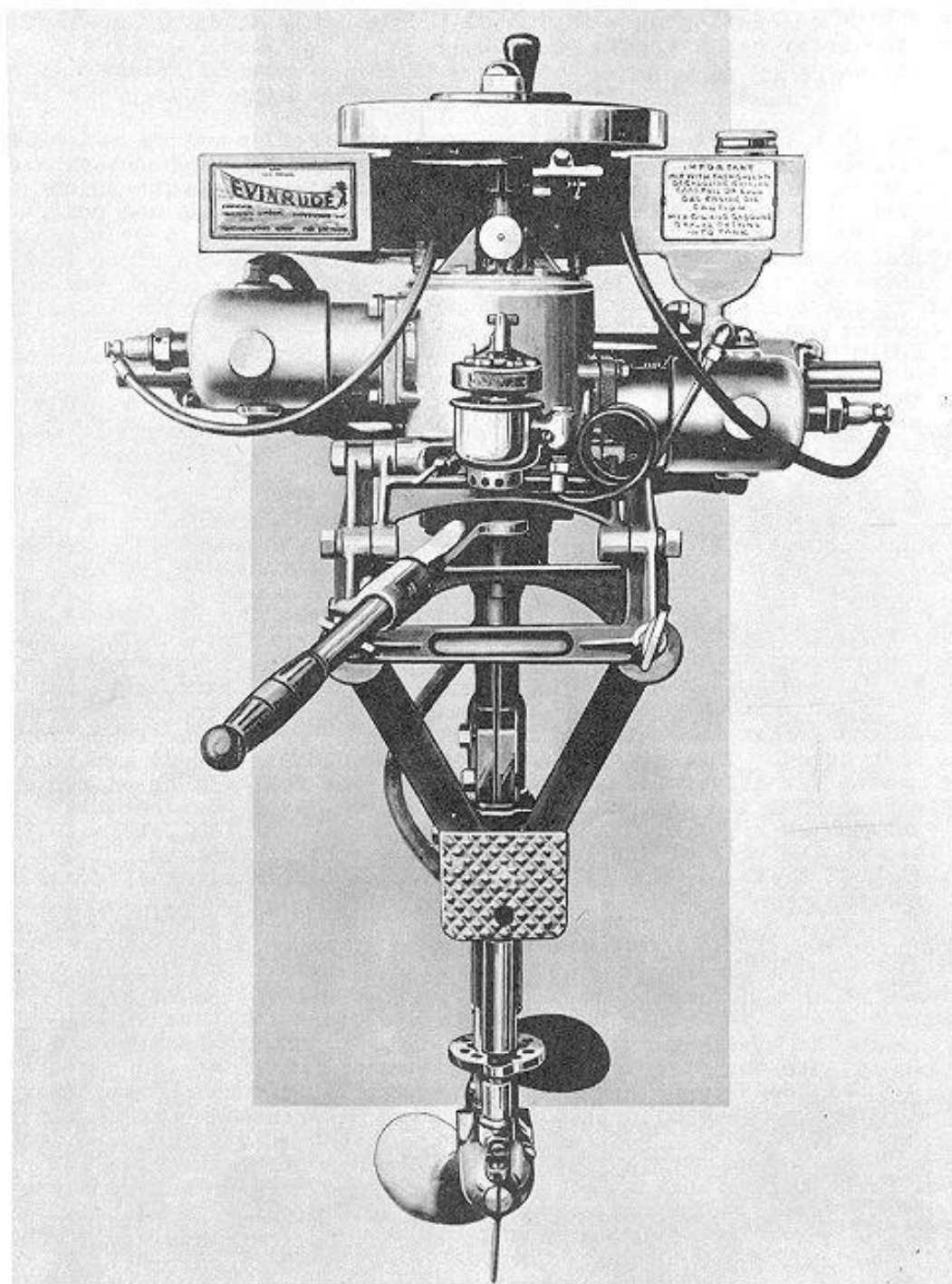
"Gasoline consumption - less fuel per horsepower hour is required than in the single sylinder type. The fuel efficiency of the 4 cycle motor is a well known fact.

"Self draining - the cylinder jacket is self draining when the hose (Webb Note: hose from plunger pump to cylinder) is removed - a convenience when the motor is used in cold weather.

"The Automatic Reverse and Evinrude Magneto are used on the 4 cycle twin models. This two cylinder motor is provided with a distributor so that the full strength of the spark goes to fire the charged cylinder and then alternately to the other charged cylinder."

Any ad man who wrote catalog copy like that today would be out of a job quite soon, but in 1916 that type of copy writing was right in style. Good thing too, as far as the 1916 Evinrude Big Twin was concerned! Needless to say, the 1916 Big Twin was not a success!

1916 Evinrude Big Twin



Safety Tips for High Speed Boaters

by Ron Johnson

It was pointed out to me by Walt Ellis, that there is a need for some safety tips on setting up a fast boat. This could apply to any outfit where the motor has a remote control.

****THE KILL SWITCH****

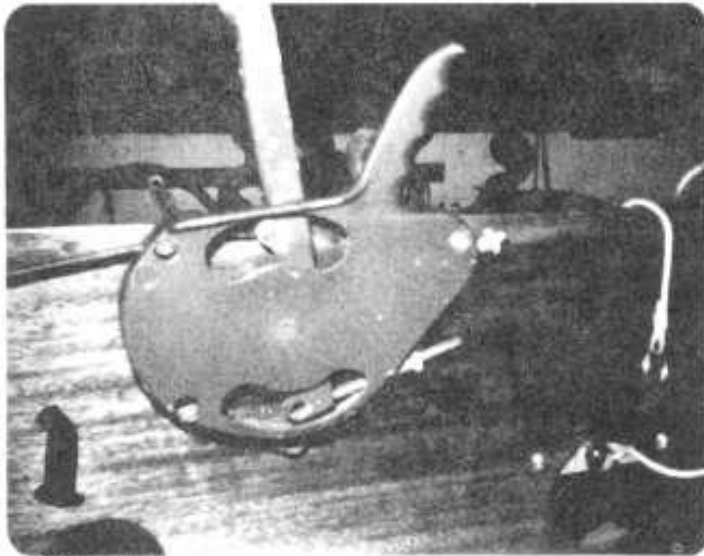
If you have a big set down type runabout, an on/off switch is fine, but for a raceboat you should have a breakaway switch so if your boat and you part company, your boat will stop and wait for you. There are companies that make these switches for boats, snowmobiles and motor-cycles. You can make a switch from a set of car points, a 3" piece of $\frac{1}{4}$ " plastic tube, 3' of cord and a small snap. Fasten the car points to the inside of the cockpit near your deadman's throttle. Run your coil wires to the points. Tie a cord around the piece of plastic tube, fold the plastic tube over one inch from the end and tape it together. This will leave about an inch of plastic tube to slide over the movable arm of the points. Tie the snap to the other end of the cord. Snap the cord to your life jacket; this is one way to shut off your big iron. (See picture #1).

****SECURING THE MOTOR****

When you set your motor on your boat's transom, you screw the clamp down and you're ready. Right? No! Wrong!! Care is used when the motor is secured to the transom. The clamps are not overtightened and strained. On the bottom of the stern bracket there is a hole or a slot. Run a lag screw through the hole into the transom. This will help keep the bracket in place in a rough turn. There's a pair of handles or 2 eye bolts on the outside of your boat's transom. Tie a rope to one handle, run the rope across the back of the motor's torque tube to the second handle. This will keep the motor from tipping up and coming into the boat if you strike something in the water or if your motor stops running at a high speed. This tying down of the motor doesn't just apply to race boats. At Silver Lake, Wisconsin, we were making a speed run with my Big Four when the deadman's throttle was released accidentally. That Big Four jumped right off the transom, taking a $\frac{3}{8}$ " lag bolt with it, and laid in the back of the boat while it was still running. I was only traveling 35 M.P.H., which will prove you don't need a lot of speed to get into big trouble.

****THE RIGHT STEERING BAR****

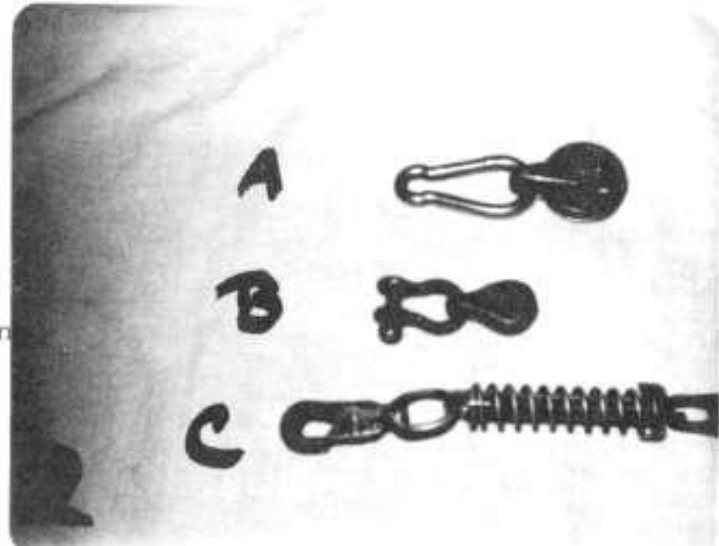
The ends of the bar should be parallel with the pivot point of your motor. Now when you steer from stop to stop there will be an even tension on the steering cable. Safety wires or a self-locking nut should be used to hold the steering bar to your motor. With the correct steering bar there is no need for those springs to take up the slack. Without springs, your cables will hold your motor steady when water gets rough in those turns. I use the indirect method of steering. I anchor the cable to the outside of the cockpit about 3' from the transom. I prefer to bolt this anchor because it will be stronger than wood screws. You could use two cable clamps on the end of the cable if you like. From this anchor the cable is strung back to the steering bar, around a pulley and then to in front of the boat. Fastening this pulley to the steering bar can be troublesome and requires care. Don't use "S" hooks, snap hooks, pulleys with a swivel (See picture #2; B and C) or something



PICTURE #1

that will come unscrewed and fall apart. Use a safety type fastener and a good strong pulley (See picture 2-A). Now the cable is run to the front and around a pulley to the steering wheel. Inspect this pulley to make sure it is fastened safely and check the condition of your steering wheel. How strong is the dashboard? Is the wheel bolted down? Does the cable reel on and off without climbing over itself?

Always check your steering by turning the wheel from stop to stop. Does the cable stay at an even tension? Does your motor turn the correct direction when you turn the wheel? You would be amazed at how confusing it can be if your steering cable is wrapped in the wrong direction on your steering drum.



PICTURE #2 (A,B,C)

****THE DEADMAN'S THROTTLE****

A deadman's throttle is a must for a raceboat. The throttle must be fastened to your boat, very securely. It doubles as a handle for the driver to grasp; the same can be said for the steering wheel. The throttle should have a strong return spring and work freely. The cable must be long enough so it will not be pulled tightly when the motor is steered.

****THE DRIVER'S PROTECTION AND COMFORT****

A life jacket and a helmet are essential items. First, there is no such thing as a helmet that can, absolutely, preclude all possibility of being knocked semi-or-completely unconscious. A blow which stuns you while wearing a helmet may very well have crushed your skull without one.

The object is to minimize the damage as much as possible. Next, is to wear a life jacket, not just any life jacket. If you're knocked unconscious, in less than a second you will be floating face down in the water. Frightening? It's up to your life jacket to do its job of rolling you over and supporting you with your face out of the water. It would be a good idea to get in the water and test your life jacket. Will it roll you over? Are the leg straps loose enough to allow the jacket to travel upward in the water to provide the head support required to keep your face out of the water? Even the best life jackets must be fitted and properly worn to do the job. To make things a little more comfortable, you can wear knee and elbow pads. Build a pad to install in your boat to kneel upon.

THE FLYWHEEL GUARD

Race engines have been known to break the crankshaft due to their high RPM's or due to metal fatigue. When the crankshaft breaks it will break at the flywheel. This leaves the flywheel free to fly overboard, into the boat, or possibly to do bodily harm to the driver. A guard made of stainless steel can be made to keep the flywheel in place.

THE FIRE EXTINGUISHER

It's a good idea to have a fire extinguisher on hand with any type of boat. Be sure to buy the class of extinguisher for boats and keep it handy. You can't predict when a fire will happen. Your extinguisher won't be much help if you are in your boat and it is in the trunk of your car.

** THE BOAT **

Thinking of putting some shiney, fresh, big iron on a hydro or runabout for the first time? May I suggest that you take a good look at this motor and boat. Is the boat a good design for the speed and weight of your motor? Is there any dry rot or patched holes? Is it a strong and solidly constructed boat? A racing boat is especially constructed. It differs from the ordinary type of boat because it rides or moves on the top of the water, rather than in or through it. There are several types: continuous plane or runabout, single step, multiple step, three point, two point and the hydrofoil to name a few. Be sure the you have a fin on the bottom of your race-type boat. Without a fin, you will not be able to turn your boat at high speeds or when it does turn it will spinout. I will not go into boat type, design, or factors that reduce speed. Raceboats are built in classes such as M, A, B, C and F. An A-B class boat is designed for 15-20 cubic inch motor. It is not a good idea to use a 30 or 40 cubic inch motor on them. The planing area isn't large enough to properly support the additional weight. The boat's balance will be wrong and the handling characteristics will be abnormal.

The Twin City Chapter has the good fortune of having Bill Tenney and his thirty-one years of racing experience that he shares with us. Most of the time Bill had a Johnson behind him. Bill helped us when we ran Glen Ollila's KR for the first time. What a barn burner! This has to be the fastest KR in the club. The gentleman who sold the KR to Glen said that it was clocked at 64½ M.P.H.

You may not agree with all or some of what I've written. The point is to get you to "think safety". The faster your boat, the greater the chance of you running amuck. May we all have a safe and happy boating season.

* * *

* * *

Who and What is Over the Hill?

In September a "classic" hydroplane regatta was held on the Potomac River in Washington. "Classic" because the man who swept his class on Saturday (Bob Thornton) was old enough to be the father and/or grandfather of most of the contestants, and, he did it with an antique Johnson "33-"37?" on the back of an over-the-hill hydroplane!! Asked how he could beat two youngsters with hot new Konig and Yamato engines that turn 4,000 RPM more than his Johnson, he said, "They couldn't get 'em started!"

On Sunday he ran into difficulty. After finishing second in the first heat, a plug fouled in the final heat and he ended up circling the course at 30 miles an hour. Thornton



at 30 miles an hour Thornton finished third for the race and won \$5.00.



Of course, the money isn't why Bob races—it's a certain sweet smell he can't get out of his mind. He saw his first hydroplane race in Philly in 1937. "They had alcohol-burners back then, too," he said. "The fuel they used was called DuPont Dynax and they mixed it with castor oil, just like we do today. It had an aroma I'll never ever forget."

EDITOR'S NOTE: The above story was taken from "Hydroplaning: Just Turn Left and Go" by Angus Phillips in The Washington Post.

Museum Exhibits Vintage Motors

The Catalina Island Museum Society was delighted to be able to present seven of Ray Rydell's antique motors this past summer and fall. The exhibit was a definite treat for the thousands of boating enthusiasts who visit the museum each season.

The oldest motor in Ray's exhibit was a 1917 Evinrude Model A. This motor was the first commercially successful outboard produced.

His second oldest motor was a 1923 Elto Model C, which was also an Evinrude design as E-L-T-O meant Evinrude Light Twin Outboard. The major innovation in this motor was the extensive use of aluminum.

The next motor on display was a 1925 Caille Pennant 5 Speed Twin. Before Caille went out of business in 1935, the company manufactured Caille Outboards, Motorgo for Sears Roebuck and fancy slot machines that are now collector's items.

Ray's 1928 Johnson Model P-40 Big Twin is identical to the motor used on the Sea Sled that won the race around Catalina Island in 1928 - the first ocean race for the area. According to Ray, the race wasn't really around the island - the course had to be changed due to rough water.

The speeds of racing motors increased greatly in the 1930's, and Ray's exhibit for this era was a 1938 Evinrude Racer Model 8005, Class F 4-60. These motors were also used in midget car racing.

Also on display was a 1939 Johnson Model P0-39 Sea Horse 24. This motor was very reliable and popular for boaters, and was also used on World War II assault boats.

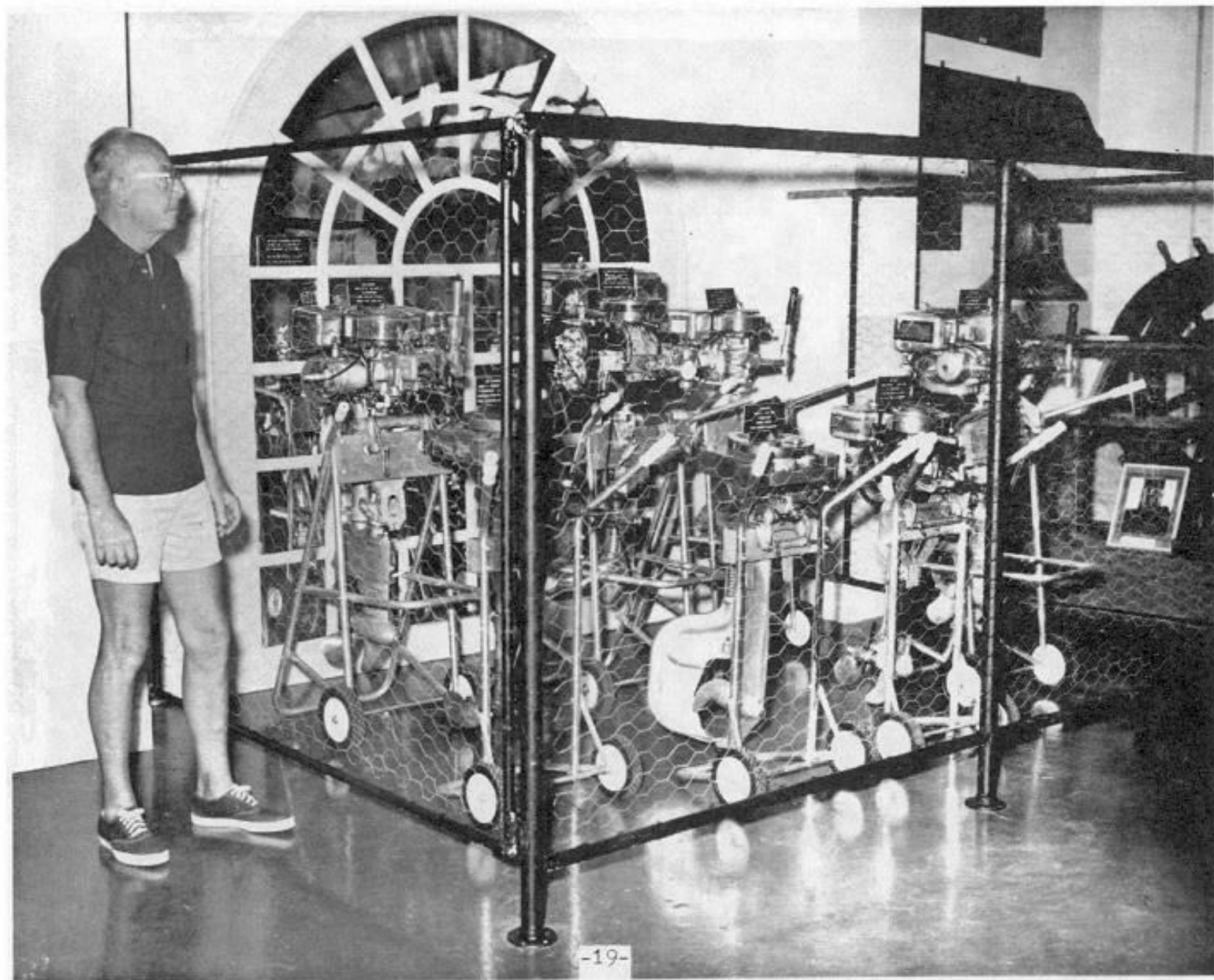
The last motor in the exhibit was a 1940 Johnson Model KA-10 Sea Horse 12. Ray selected these seven motors from his collection of 42 restored antique outboard motors.

EDITOR'S NOTE: This article was condensed from a full page article by P. A. Moore in The Catalina Islander. Ray gave the reporter a wealth of interesting and factual information about each motor. Just reading the article made you proud he was a member of our club.

At the end of the article he slipped in his name, address and two telephone numbers for people to contact him if they had or knew about any antique motors or parts - yep! he's one of us!

** * ** * ** * ** * ** * ** * ** * ** * ** * ** * ** * **

Picture of Ray Rydell and his motor exhibit at the Catalina Island Museum. Left to Right: Ray, Johnson P0-39, Evinrude A, Evinrude 4-60, Johnson KA-10, Caille 5-Speed Twin, Johnson P-40. The bell and the ship's wheel are from the old S. S. Avalon. The wire cage kept out prying fingers.



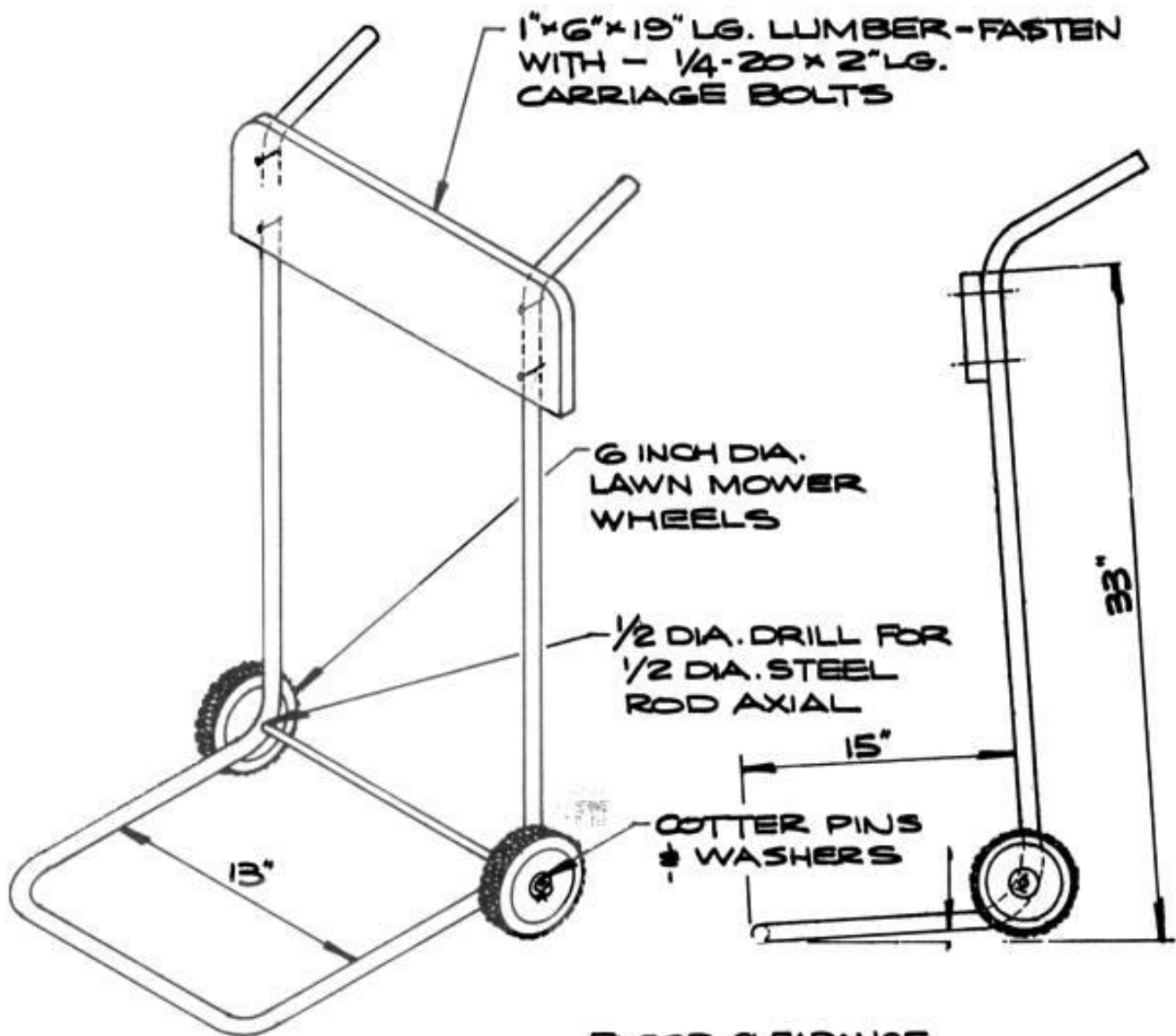


EMMETT WALLS COMPARES SPEEDITWIN AND PO-15 ON
2 EZ MOTOR STANDS - SEZ'S SPEEDITWIN IS BEST!

EZ MOTOR STAND

BY E. WALLS

MADE FROM 10 FT. SECTION OF 3/4 INCH THIN WALL CONDUIT - USE FULL LENGTH - NO CUTTING - RENT OR BORROW TUBE BENDER - MAKE TOE BENDS FIRST - WHEEL BENDS SECOND & HANDLE BENDS LAST.



FLOOR CLEARANCE.
THIS END

Martin Motor History

by George Martin

This is a brief factual history of the Martin Outboard Motor.

The basic mechanical feature of the Martin motor was the mechanically controlled poppet valve. The poppet valve was not new art as it had been used for years and is still used in our finest engines. However, the application of this in a two cycle engine was new and I was able to get a patent with something over twenty claims.

By the late 1930's I had built several engines incorporating the valve and was able to prove the value of this design: an exceptionally good idle, unusually good horsepower, and good starting under adverse conditions.

Shortly after this the war was to curtail any possibility of producing the engine. As the war began to lessen several manufacturers, looking forward to the post-war period, were interested in an outboard and my design. Sometime before the end of the war an agreement was consummated and I was able to start tentative plans for post-war production.

Shortly after the war ended we were able to go into limited production on the Martin 60, an 11 CI - 7.2 HP - 2 CYL outboard incorporating mechanically controlled valves and a number of other new and patented features such as a new simple recoil starter, power head swivel, filler cap, flood proof starting, and new exhaust system, to name a few.

This new outboard weighed approximately 37 pounds, had the weight and idle speed of the better known 5 HP motors and a top performance approaching that of the better known 8 to 10 HP outboards, which gave us a weight advantage of 10 or more pounds. In short, as nationally advertised, "One outboard that would do what you would expect it would take 2 to do."

Our first outboards were produced in 1946. These were to carry the year first and serial number to follow: Example 46-6001. As I recall, we started the Martin 60 with serial #6000, the 20 with #2000, the 40 with #4000, etc.

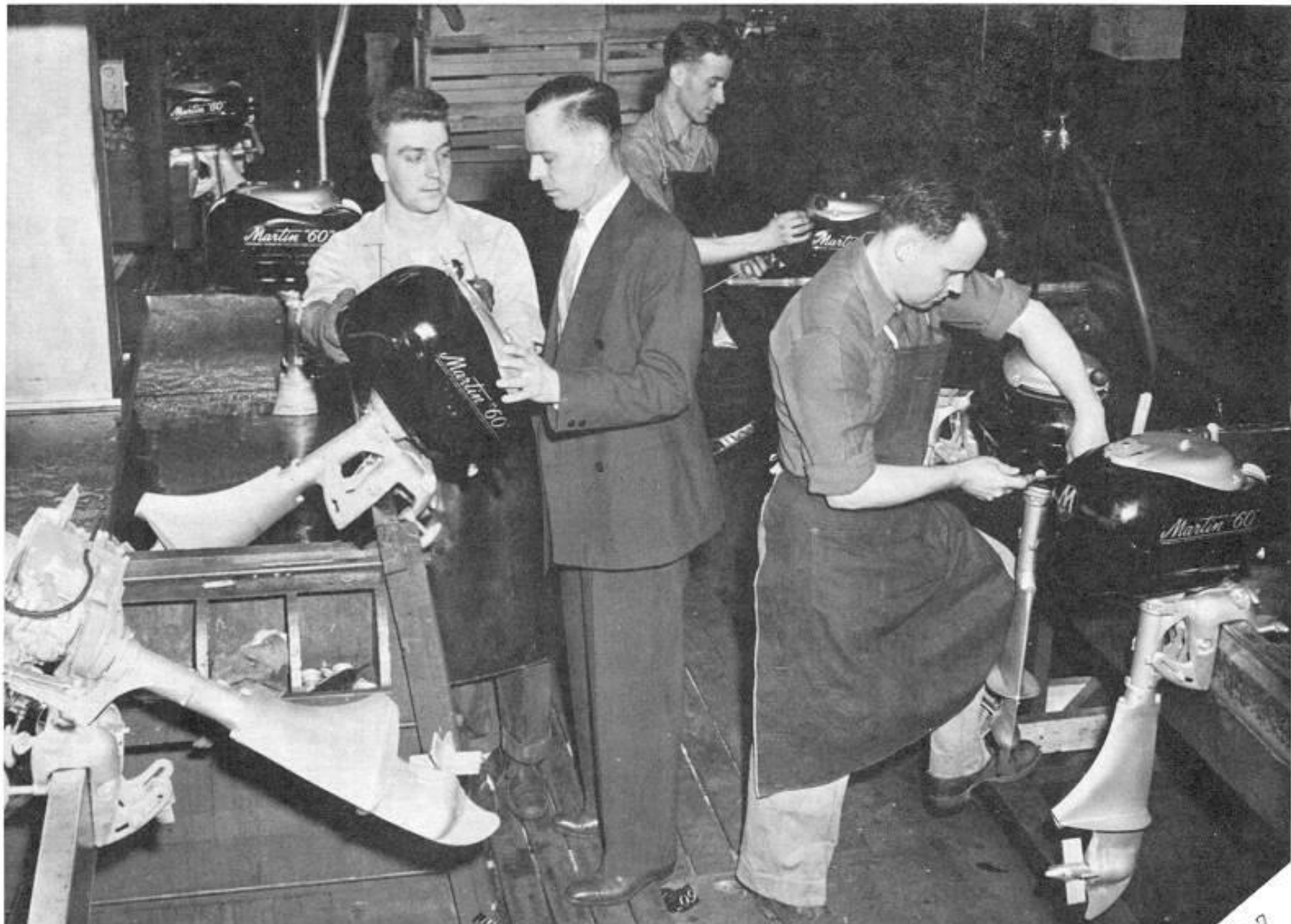
The first production of the 60 was distinctive by an all black top and aluminum lower unit, soon to be referred to as the "black top". Later the color was changed to a combination of black and aluminum top. This was carried through on the new models in later production.

Martin motors were made in sizes - Model 20, single 2 1/3 HP - Model 40, small twin 4 1/2 HP - Model 60, twin 7.2 HP - Model 100, twin 10 HP - Model 200, twin 20 HP.

I left the company in the late 1940's and, as I recall production of all Martin outboards came to a sad end in 1955 or 1956.

MARTIN "60" SPECIFICATIONS

Bore & Stroke.....	2 x 3/4	Propeller Diameter & Pitch...	8 x 8 1/2
Number of Cylinders.....	2	Fuel Capacity.....	1 gallon
Brake H.P. at 4000 RPM.....	Approx 7 HP	Number hours cruising.....	2 1/2 hours at cruising throttle
Weight.....	Approx 42 lbs	Gear Ratio.....	13 to 20
Piston Displacement..	11 cubic inches		



PARTIAL VIEW OF THE FINAL TEST AND INSPECTION BAY
SHOWING SEVERAL OUTBOARDS READY FOR SHIPMENT

1946 - 1947



GEORGE MARTIN, CIRCA 1947, AND DISPLAY OF THE MARTIN OUTBOARD MOTORS

BIOGRAPHICAL NOTES OF GEORGE MARTIN

No one in the outboard motor field can match the unusual record of George Martin, head of the Martin Motors Division of the National Pressure Company and designer of the revolutionary outboard motors bearing his name.

As a boy in Indiana, George started 'foolin' with motors' and he personally adopted the two cycle as his own. He's raced outboards, built outboards and worked with outboard motors for twenty-five years. Acclaimed as 'the most consistent outboard racer' in a poll of leading magazines, George has won hundreds of trophies.

All this experience, plus the investment of his life's savings and three years of concentrated work, resulted in his own motor. Odd parts and baling wire were combined with George's undying confidence that mechanically controlled valves could work in a two cycle outboard and would revolutionize the motor's performance. They have.

In 1943 George demonstrated his motor to officials of the National Pressure Company. The Martin Motors Division was the result. Six months after a plant was secured, the first Martin was produced. The motors caused a sensation at the New York Motor Boat Show in 1947. Ever since outboard enthusiasts have kept George's production line straining to keep pace with demand. Already George has outgrown his first plant and Martins are now made in a fine new plant at Presto, Wisconsin. A second plant is under construction at Wallaceburg, Ontario.

Three sizes are now being produced, the "60", "40", and "20", which will be available in 1948.

George's little motor has now become a mammoth enterprise. But George hasn't changed. When he isn't winning a bet that he can start a Martin first spin off the production line, he's out on the test course plowing over sandbars, snags and deadheads putting Martins through their paces.

This material was contributed by George Martin. It was written by S. Richard Stern for Martin Motors Division of National Pressure Company



1946 CHICAGO BOAT SHOW

Longwood, Florida Meet

February 3 & 4, 1979

by Jim Wickert

The weekend of our meet is past and I think it was reasonably successful; at least most of those who showed up seemed to enjoy themselves. We had



"MUSCLE POWER"

Mike Kolat, Alan Phillips, and John Van Vleet

but also to push him off the stand in the water after he gets going. Unfortunately, the lake temperature is around 60 degrees so he had problems

10 members, most with their wives, all but the Kolats, Van Vleets, Ottos, and Biebers from Florida. Several other members called and said they would be there, but didn't show. The weather on Saturday was pretty good. Sunday it stayed cloudy and cooled off, which kind of slowed things up a little bit but not too badly. Neither John Harrison nor Jim Johnson made it. So, Ted Bieber was the only one with racing equipment, although Dick Jones brought his Quad Rod in addition to a beautiful PO and ran both on a round bottom runabout which didn't really let the Quad Rod perform as it might have.

Ted Bieber spent a couple of hours on Saturday limbering up his Hexhead by rope pulling. We tried to convince him there were better ways of doing it. After he changed the coil and got the sand out of the gas tank and carburetor he made a respectable showing. He needs an awful lot of help, not only to carry the boat and motor into the water



Left: Ted Bieber and his Hexhead about ready to run. Right: Ted Bieber and his Hexhead digging out of the hole with the help of Dick Jones and Walt Otto -- note the good doctors outfit - white shirt, tie and suit pants. That's dedication!

finding people to get into that cold water almost waist deep and then get a cold shower as he took off.

We didn't have as much equipment as I'd liked to have seen. In addition to Ted and Dick, only John Schutzenhofer showed up with a boat and motor, his Feathercraft with a beautiful PO 38 on it.

Everyone seemed to have a good time and if we're still in Florida at the end of the year I think we'll plan another one.

I added two motors to my collection. I bought Dave Reinhartsen's Speedi-four and Speeditwin, both in good condition. Fortunately, Ted Bieber was able to bring them along so I saved the shipping.



Above left: Jim Wickert's KA-10, and above right: Mike Kolat working on John Van Vleet's Martin 100.

Below left: Ted Bieber rigging his Hexhead with Walter Otto and Ed Baird as spectators, and below right: Dick Jones working on his PO-15.



Antique Motors Alotta EASTERN PENNA Regatta

by Bob Grubb
photos by Ralph Yost



TOM LUCE and 1907 WATERMAN



MARK WRIGHT and 1928 SPEEDSTER

Saturday, July 29, 1978 was a beautiful day for my sixth antique outboard meet. We had eleven members, other than myself, in attendance, plus families and friends. One new member, Amos Shaner, was signed up at the meet. To keep things simple and fun, I just asked that any motor to be eligible for a trophy be run some time during the day.

We had relatively few brass motors this year, but what we lacked in quantity we made up in quality. Tom Luce brought his Circa 1920 Hansen Pirat 2-cyl opposed German built rowboat motor which he has fully restored; and of course, it runs well. Ed Gera brought his always dependable and good looking 1911 Evinrude. Galloway Morris brought his square tank Caille Liberty single which developed fuel leakage. But, the most exotic of the brass motors had to be Tom Luce's 1907 Waterman which is also fully restored and runs well. This motor took the Oldest Running Motor trophy easily.

The Mint Condition Brass Motor trophy also went to Tom Luce for the Hansen Pirat.

In the aluminum motors, under 20 cubic inches, we had six very fine entries. They were a '28 Elto Speedster owned by Tom Glock, a '24 Caille Pennant owned by Tom Luce, a Thor opposed twin owned by Dick Schaber, a

DICK SHABER'S HARTFORD and THOR TWIN --- DICK WITH HARTFORD AND CIGAR



'28 Elto Speedster owned by Mark Wright, a Hartford Sturdtwin owned by Dick Schaber and a K 50 Johnson owned by Dick Fuchs. The ultimate winner here was Mark Wright for his freshly restored '28 Speedster.

This year we had more big iron entered than ever before. Cheston Morris (Galloway's son) John Buonocore and Tom Glock all brought P O Johnsons. John Buonocore also brought his 1949 Evinrude Speeditwin, and he acquired a beautiful Evinrude Speedifour at the meet. Ed Gera entered a very nice 1928 P 40 Johnson. The decision here went to John Buonocore for his Evinrude Speeditwin.

We also had a better than usual turnout in the shrouded motor category. Ed Gera brought a Lawson Twin and a 1937 Evinrude Scout. John Buonocore had his 1946 Mercury KD 4 and Kick Fuchs brought his trusty Mercury KFS Super Ten. Ed Gera's Lawson took the nod in this category.

We again held our predicted log events which are aimed at getting everyone to "run what you brung". The first one was won by Dick Schaber running his 2 cyl opposed Thor. His guess was 20 minutes, and believe it or not, he took 20 minutes and 3 seconds! This race also had what I believe to be the largest field ever. With our Lemans start we had nine boats starting almost at once. The second race was won by the new member Amos Shaner with a 1 minute and 4 second error.

Much to my surprise, I also received a trophy for holding a good



Above left: JOHN BUONOCORE, LOUISA GRUBB, TOM GLOCK, and BOB GRUGG AT TROPHY PRESENTATION.

Above right: THE AWARDS

Below left: DICK FUCHS and K 50, and right; AMOS SHANER, CHESTON MORRIS with JOHNSON PO



meet. Each year my wife, Louisa, makes ceramic trophies (plates, cups, etc.) of which I have become quite proud, but am never eligible to receive---so now, I have one for myself!

To break up the monotony Galloway Morris brought some military items. One of the most interesting was a British folding paratroop motorcycle on which Dick Fuchs took a test drive.

After trophies were awarded and everyone had their gear packed, we started the caravan to our house where Louisa had prepared a meal for us. This gave everyone a chance to rehash the day and see my motor collection. I think a good time was had by all. I hope you can all make it next year.

Below left: ED GERA, 1911 EVINRUDE and right; CHESTON MORRIS, JOHNSON PO



Special Interest Groups

Here's a list of the different Interest Groups intended to help focus on your needs for literature, information, parts and fellowship regarding your favorite motor or subject.

Giant Twin - Don Peterson
Class "F" Owners - Dave Reinhartsen
Johnson PO - Bill Salisbury
Johnson V Series - John Harrison
Johnson A Series - Bob Zipps
Antique Boats & Equip. -
Mercury - Bill Kelly
Unusual & Rare Motors -
Inboards - P. S. Brooke, Jr.

Racing - Eric Gunderson
Watermans - Dick A. Hawie
Research - Dick A. Hawie
Clarke - Phil Kranz
History - W. J. Webb
Eltos - Sam Vance
Cailles - Walter Weidmann
Lockwood
Martin - Frank Zadonick
Detroiter - Wayne Schoepke

Notice that not all of the groups have leaders - volunteers are needed! Write to the V. P. of Technical Services: Eric Gunderson, 515 W. Main, Grass Valley, California 95945.

Frustration

by Le Roi Russel

About a year ago I got the antique outboard collecting bug. After a little time and a lot of letters I found there are a lot of nice guys who have been stricken by the same bug.

"Old iron" wasn't too hard to find at a reasonable price, so I wound up with various engines to restore. This proved to be challenging and a lot of fun. Most of them had a part or two missing and that led to more hunting - Parts Sources. After a lot of correspondence and time (due to the slowness of these Parts Sources in answering), I finally wound up with eight restored antique engines.

Then came the fun in finding out how many would run! The first five I tried ran beautifully, and then the weather turned bad. Winter came on - yes, we have winter here in Arizona - so no more trying to start the other three until spring and the weather is good. FRUSTRATION #1.

Now, people are finding that I like to buy old outboard engines to restore and the prices are going sky high! FRUSTRATION #2.

I have two boats. One has a 35 H.P. engine and the other has a 70 H.P. engine, and as I only collect old engines of 10 H.P. or less, my boats are too big and heavy for these little examples of "old iron". So, I'm hunting for a small light boat about 8 or 10 foot long and no one makes one that small - no JON-BOATS, please. FRUSTRATION #3.

Now, for the Crowning Glory of Frustrations! Along comes my birthday and knowing of my interest in boats, my darling daughter gave me an 18 inch model kit of the Atlas Van Lines U-71 Unlimited Hydroplane. This kit is composed of a heck of a lot of little mahogany boards about 1/32 inches thick.

The first thing you are supposed to do is read the directions completely. Then you check all the parts to see they are all there. After buying four different kinds of glue, plus wood filler and paint, you are in business.

These old fingers are getting on the clumsy side, so the first thing that happened was the breaking of one of the ultra-thin boards. Oh, boy! Now you have to glue it back together! After a month of glueing these little boards and tying them together with rubber bands until the glue dries, you wind up with a pretty solid model of the U-71.

Now you can either put a gas or electric powerplant in it. After a month of cussing the guy who invented models, the 1/32 inch thick boards and myself for even starting this damn thing, I decided to leave it powerless. So, I painted it and put on the decals, and I have a good looking model of Atlas Van Lines U-71 . . . or should I call it "Russel's Folly"?! Anyway, never again, as I'll stay with restoring old outboard engines.

But, I'm a stubborn ol' coot, so maybe some of these days I'll buy the 36 inch kit and build it for radio control!

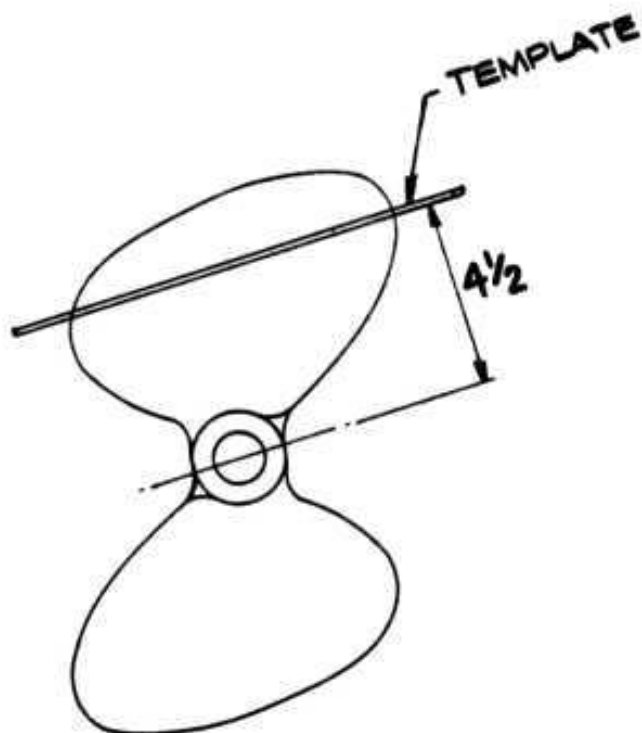
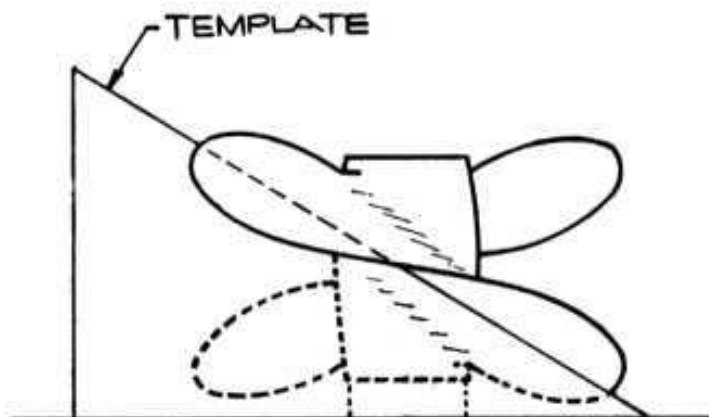
FIGURING PROP PITCH

written by Warner Turner
drawings by Emmett Walls

The way to find the pitch of a propeller by simple means of basic math and a cardboard template is demonstrated in the following paragraphs. The pitch is the advance a propeller or screw makes in one 360 degree revolution.

First, place the propeller on a flat surface, supported by the hub, to prevent the blades from touching the flat surface.

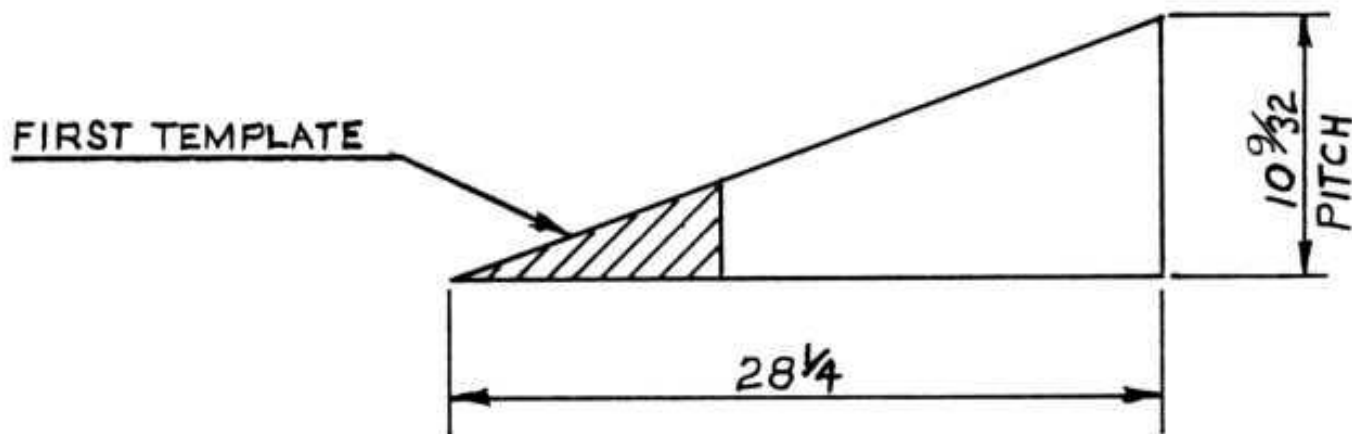
Second, cut a cardboard template to approximate the pitch angle as shown. This measurement should be the average thrust angle halfway between the inner and outer edge of one blade.



Third, record the radius where this measurement was taken. Now, double the radius ($4\frac{1}{2}$ inches) to give you the diameter (9 inches). Multiply 9 inches x 3.1416 to give you the circumference of the pitch circle. This comes to 28.274 inches.

Cut a second template in a triangular shape using the angle established by the first template, and measure the base side of the triangle as established by the circumference.

If all goes according to plan, a fairly accurate measurement can be expected.



Something to Do

by Tom Glock

While putting together a "parts engine" Elto Senior Speedster (something to do on a rainy day), it occurred to me that the original gravity fuel system could be converted to a remote set-up without too much difficulty and returned to original at a later date.

The float bowl cover had deteriorated as is usually the case with pre-1930 Eltos, so I replaced it with a small adaptor plate to mount a high-pressure needle and seal from a KA series Tillotson carb as used on four cylinder Mercurys. These also incorporate a bronze fuel filter. Two gaskets were needed - one on either side of the adaptor.

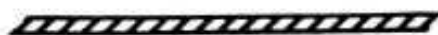
After removing the drain plug from the carb "bowl", I substituted one with a small diameter brass pin, which was soldered in its center, and on which the float (KA series) would slide. Next, a small orifice was drilled through the crankcase via port side carb mounting hole without damaging the threads. Using a piece of threaded rod, the same size hole was drilled through the entire length - this would facilitate mounting the carb and also connect to the pressure line. When this stud was installed in the case, a gasoline resistant sealer was used.

A Z-line pressure gas tank from an early Mercury was used. One more modification had to be made, and that was to install a one-way or check valve in the pressure line between the crankcase and the gas tank.

Basically this type of modification could be made on almost any two cycle engine, but instead of a pressure system one could use the crankcase pressure to activate a "modern" outboard fuel pump and thereby eliminate the pressure tank.

I had made a similar conversion on a Mercury gravity system (KG 4) back in the racing days for an up-coming marathon, except that I had "adapted" a fuel pump directly to a port cover.

It would be interesting to know how the old time marathon racers (re)fueled their rigs.



Refueling at Ed Kant's 1970 Meet - Photos contributed by Warner Turner
Left: Warner Turner and couple that salvaged 1929 S-45 Johnson for \$5.00
Right: Gene, Will Yonker, and 1932 Sport Four

RICHARD A. HAWIE

NOTES FROM THE CURATOR



When the club was formed back in 1966, I was afraid that we would run out of things to write about after a few years. Three or four diligent members would exhaust all subjects by 1970, or so I thought. Here it is 1979, and no end is yet in sight; in fact, it seems that research uncovers a need for more research.

I've done some research on the Johnson Model "K" series, and though I've developed enough material to do an article, I've still quite a few unanswered questions about the Model K motors and Johnson motors in general. However, if we waited until every possible question was answered before writing an article, not many articles would be written.

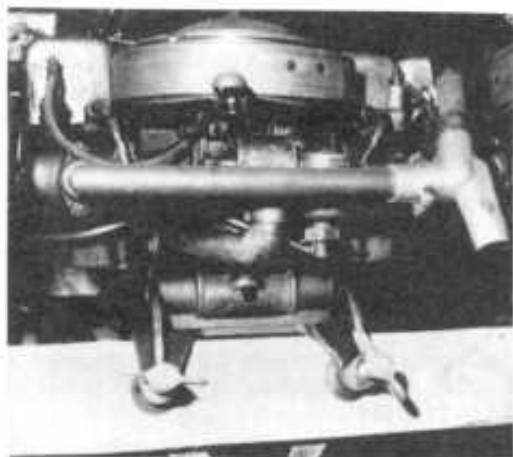
Granted these aren't earth-shaking questions - but did you ever wonder why Johnson used the model designations that they did: A, J, P, K, S, V, T and X? If a logical sequence were used, the models would be A, B, C, D, E, F, G and H, corresponding to the piston displacement of the various engines. The single cylinder model was called Model J. I wonder why it wasn't called Model S for single?

The Model K motors made before 1930 have no similarity at all to the 1930 and later Model K motors. In fact, to the unpracticed eye a 1929 K-45 doesn't look like it's been made by the same manufacturer as a 1930 K-50! Why the letter K was continued in 1930 for a motor of different bore, stroke and firing order, I can't guess. It certainly makes motor identification harder. If, for instance, you mention an Evinrude Speeditwin I know you are talking about a 30 cubic inch, twin cylinder, opposed piston engine having a bore of 2 3/4" and a stroke of 2 1/2". Motors designated as Johnson Model K motors have three different bores and strokes and two different firing orders.

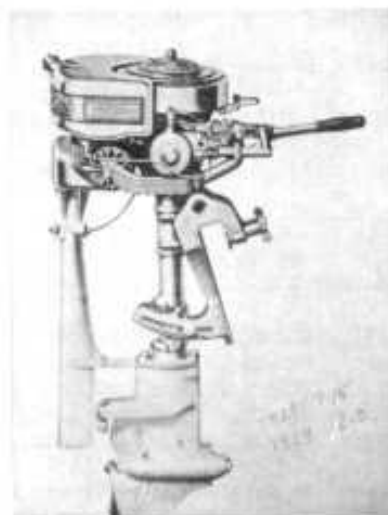
The pre-1930 Model K motors were opposed piston engines. The 1927 Model K-35 had a bore of 2 5/16" and a stroke of 2 1/16" for a 17.32 cubic inch displacement. The horsepower in standard trim was 4.8 H.P. at 3000 R.P.M. In "racing trim" it was rated 6.45 H.P. at 3500 R.P.M. This wasn't a special racing model; "racing trim" meant with the exhaust cut-outs open and the hot air tube to the carburetor removed. This was before the days of underwater exhaust, and the muffler obviously was not too efficient since by-passing it gave 33 per cent more power. These horsepower figures are from the 1927 Johnson Sales Catalog, which has a power curve, believe it or not! The 1933 Johnson Service Manual lists the K-35 power as 6 H.P. at 2750 R.P.M. I don't know for sure why there is this discrepancy in power ratings. I suspect that the 6 H.P. rating is in "racing trim", but the R.P.M. given is 2750. The sales catalog's 6.45 H.P. was at 3500 R.P.M. I would be surprised if

the K-35 could develop 6 H.P. at 2750 R.P.M. It, like the 1928 and 1929 K series, had offset connecting rods, the centerlines of the two cylinders coincided, so some of the force developed was thrust, not rotational force. A minor matter perhaps, but it does point up the fact that you sometimes have to be flexible when working with motor specifications and part numbers. You do run into many discrepancies.

In any case, if you have a K-35, it is an unusual motor for that it is the only year that Johnson made an engine with that bore and stroke. In 1928 the K-40 model had a bore of $2 \frac{3}{8}$ " and a stroke of $2 \frac{1}{4}$ " for a 19.93 cubic inch displacement. There was a standard K-40 model and a racing KR-40. The K-40 was rated as 7.15 H.P. at 3500 R.P.M. in standard trim, and the racing model KR-40 was rated a 9 H.P. at 3700 R.P.M. in standard trim. No discrepancy between the sales catalog and the service manual for these motors. The KR-40 had different cylinders and pistons, but the same crankcase, crankshaft and lower unit as the K-40. The racing cylinders had a higher compression ratio and high speed port timing.



Powerhead of the K-35



The K-45 - the exhaust pipe could be mounted on the K-40 as an accessory

The 1929 K-45 model motors retained the same bore and stroke: $2 \frac{3}{8}$ x $2 \frac{1}{4}$ ", but some confusion might exist if you were looking at model specification. The "S" model motors also having a $2 \frac{3}{8}$ " bore and $2 \frac{1}{4}$ " stroke were introduced in 1929. There was no similarity between the S-45 and K-45 motors except the fact that they were twin cylinder engines of the same bore and stroke. The K-45 model was of basic three port design; Johnson called it four port because there was a window in the piston which shortened the inlet passage. The exhaust ports faced downward toward the water. The S-45 was an external rotary valve engine. The exhaust ports faced rearward, parallel to the water. The cylinders were offset so that the connecting rods were straight. If you looked at the two motors side by side it is easy to see that they are not alike. Even the piston rings are a different width; you can't use them in the K models.

There were two models, the K-45 and the KP-45, made in 1929. The K-45 had an underwater exhaust, actually an aluminum casting which carried the exhaust from the muffler underwater. The KP was referred to as

"full pivot". It didn't have the underwater exhaust which prevented the K-45 from pivoting 360 degrees. We tend to forget that one of the features Johnson stressed in those pre-gearshift days was that reverse could be accomplished by pivoting the motor 180 degrees. This was a thrilling manuever with a small motor on a round chine runabout; with the larger motors it was downright frightening. The boat would rock from side to side, then start to go down by the stern as water splashed over the transom. It was not a feature that was often taken advantage of.

The K-45 was rated 7.15 H.P. at 3500 R.P.M., same as the K-40. The underwater exhaust was the main difference between the K-40 and the K-45. Where complications arise in motor identification is the fact that an underwater exhaust kit was available to make the K-40 and the KR-40 underwater exhaust too!

There were long shaft models for the basic models too, KL-45 for instance; but the motors did not differ from the basic model except for the parts which made them 6" longer.

No racing model K-45 was produced because the service model S-45 produced 13 H.P. at 4000 R.P.M. compared to the K-45's 7.15 H.P. at 3500 R.P.M., an 82 per cent increase in power! A racing version of the S-45, the SR-45, was produced, and it was rated 16 H.P. at 5200 R.P.M. The K-45 was strictly a "fishing" engine.

For 1930 Johnson introduced two alternate firing twins, the A and K series. The A-50 was a small twin; bore 1 7/8", stroke 1 1/2", 4 H.P. at 3500 R.P.M. The K-50, and succeeding K models through 1948 - the last year of the series, shared the same bore and stroke, 2 1/8 x 1 31/32", for a displacement of 13.96 cubic inches.

There were also racing versions of the K models, but let's stay with the service models for now. The only thing to note about the racing models is that after World War II a lot of the war surplus Navy "Handy Billy" water pumps, which used Johnson K powerheads, found their way into the hands of racing drivers who used them for parts. It is hard to find a factory-equipped KR, especially one that was still raced in the 1950's.

In 1930 the K and its little brother, the A-50, were the only alternate firing twins available from an American manufacturer. They were rotary valve engines, but the rotary valve was on the crankshaft, not external like the S, V and P models of 1930.

The model designations and power rating for the K models are:

1930-32	K-50	.8 HP	3500 RPM
1933	K-65	9.2 HP	4000 RPM
1934	K-70	9.2 HP	4000 RPM
1935	K-75	9.3 HP	4000 RPM
1936	K-80	9.3 HP	4000 RPM
1937	KA-37	9.3 HP	4000 RPM
1938	KA-38	9.3 HP	4000 RPM
1939	KA-39	9.8 HP	4000 RPM
1940	KA-10	9.8 HP	4000 RPM
1941-42	KS-15	9.8 HP	4000 RPM
1941-48	KD-15	9.8 HP	4000 RPM

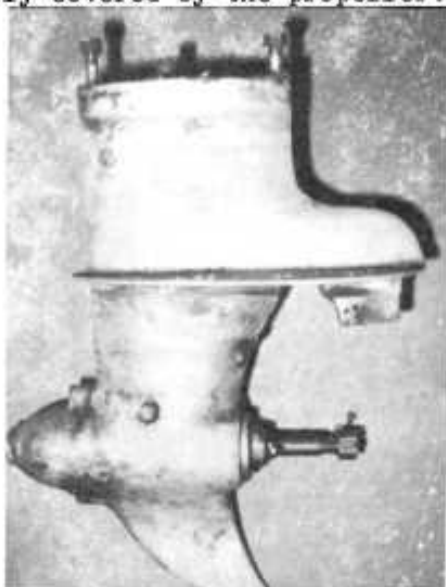
The KD-15 had an automatic rewind starter; the KS-15 did not - otherwise the motors were the same. The 1932 K-50 was offered with a "Ree Koil" starter (Johnson's spelling, not mine) at a slight extra cost, but I think after that the K had a regular rope sheave, no rewind starter.

If you are wondering why not a nice round 10 HP (surely .2 HP could have been squeezed from the engine), the answer lies, I think, in the fact that many lakes were restricted to motors under 10 HP. A 9.8 HP motor would fill the requirement comfortably.

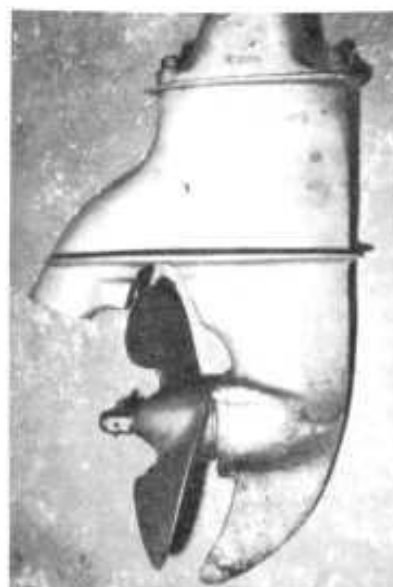
I have four K motors in my collection, and while doing research for this article I found out that two of mine didn't have all the parts I thought they should. You might run into the same problem. A model that has been in production for 18 years can cause an identification problem as to which year the motor actually was made. If, for instance, you had a 1934 K-70 which needed a new cylinder block in 1948, you would probably get the 1948 KD-15 block from the dealer. The K-70 replacement blocks would be long gone. The new block will fit and run, but now the antiquer finds he has a hybrid K-70/with KD-15 block. Remember - be flexible! Almost any hybrid engine can be rationalized after a study of the repair parts catalogs.

Through the 18 years of the K series, external changes were made which help identify the model years. I tend to approach motors from the identification viewpoint which is my specialty. With a strong flashlight and the following guidelines you can determine if the "K" in the dark corner is factory stock or a hybrid. It helps when dealing with an owner if you can tell him, "No, that's a 1932 motor with a 1939 block. It's been modified. I will buy it but it's not worth as much as a factory stock engine."

The lower unit was changed in 1937 with model KA-37. Pre-37, the lower unit had a front bearing cap held by two screws. This cap extended forward of the leading edge of the unit, and had a set screw and nut in the center of it to adjust the gear mesh. The KA-37 through KD-15 lower unit is smaller, more streamlined, and has a rear bearing cap which is nearly covered by the propeller.



Lower unit on K-50 to K-80

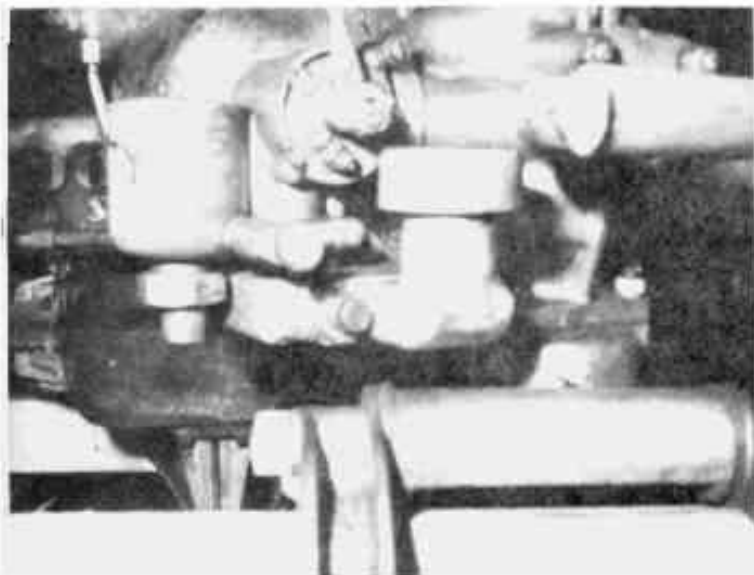


Lower unit on KA-37 to KD-15

Two cylinder blocks were used on the engines, the change coming in 1939 with the KA-39. The K-50 through KA-38 cylinder had port side mounted spark plugs. The KA-39 through KD-15 cylinder had spark plugs mounted in the center of the head. The spark plugs were 18 mm. A problem arises in using the cylinder block as an identification point because the newer cylinder block was used as a replacement part for the early one. My K-70 was bought from a dealer who had repaired it in 1954, and it has the newer cylinder. The cylinder was cast iron, and salt water could do quite a job on it.

Three crankcases were used, and formerly the number cast on the port side just above the bottom flange was the part number. This isn't always so, more often than not the numbers on a part are casting or mold numbers; meaningful only to the foundry that made them. Two crankcases were used on the K-50. Crankcase number 27E86 was used up to motor number 135073. Crankcase number 27E3 was used on motors above serial number 135073, through model KA-37 in 1937. Crankcase 27E250 was used in 1938 for KA-38 and continued through the KD-15.

There are two basic carburetors that were used, though if you look up part numbers you will find part numbers for five carburetors listed. All the K series used carburetors with barrel valves rather than the more common butterfly valve.

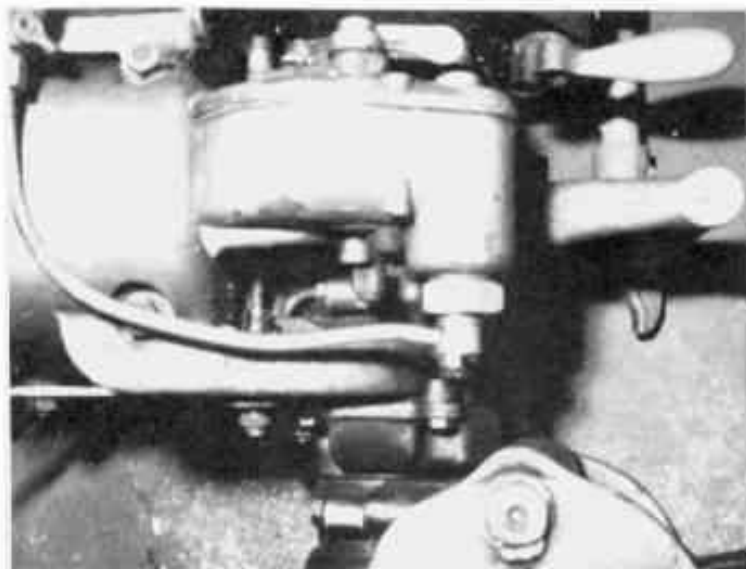


The K-50, -65, and -70 used a carburetor with a horizontal barrel valve. The 65 and 70 had a control arm from the magneto to the barrel shaft, so that the carburetor opening was synchronized with the magneto advance. The K-50 didn't have this feature; the carburetor opening was controlled independently. The carburetor air intake is unusual; at first glance it seems that the carburetor is connected to the exhaust manifold! In fact, a separate air passage was cast in the exhaust manifold to heat the

Unusual air intake system on the K-50 to K-70

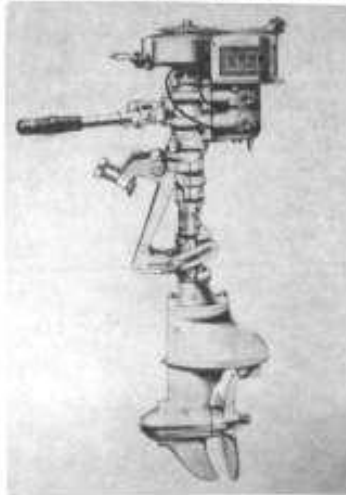
air before it went into the carburetor. The air passage shared the exhaust manifold, but there was no opening from the exhaust to the carburetor.

The K-75 and later models used a carburetor with a vertical barrel valve. Externally they all looked similar, but were different enough internally to carry different part numbers. Actually they looked like aluminum boxes rather than carburetors, for the air intake

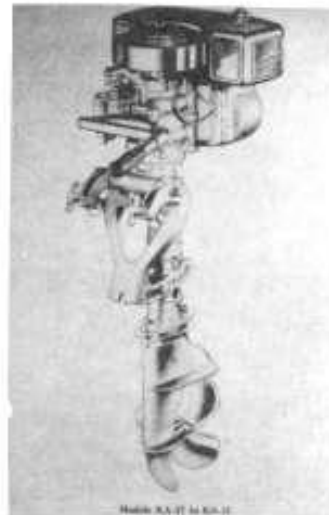


Unusual carburetor used on the K-75 to KD-15

was not visible. The air horn was cast at an angle so that hot air was taken from the outside of the exhaust manifold; the passage cast in the manifold was not used on the K-75 and later models. The part number for the carburetors were: K-75 - #28-118, K-80 and KA-37 - #28-134, KA-38 through KD-15 - #28-171. I don't have all these carburetors so I can't say what the differences were internally; I am sure that externally they were similar for identification purposes.



K-50
Side mounted spark plugs used to
KA-39



KA-37 to KS-15

Restoration has not been my main interest. None of the K models I have have been touched except to take off parts to photograph them, but I think the restoration should not be a difficult one. Many of the parts were used in all the models which means that a "basket case" or parts motor would supply many parts even if it wasn't the same year as the motor you are restoring.

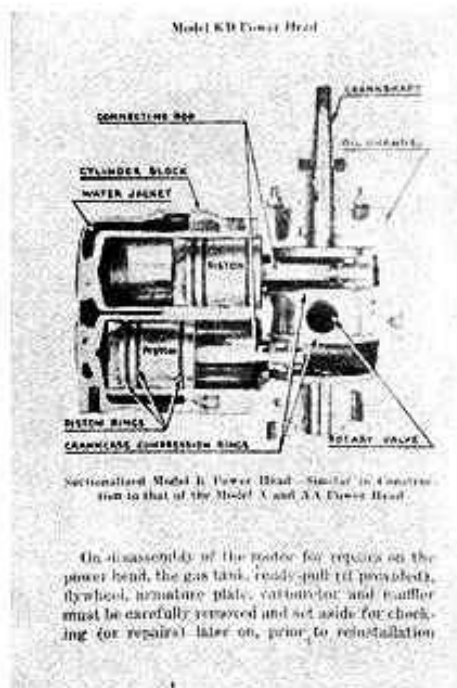
One of the pleasant surprises when you get inside the engine is that the same crankshaft was used in all the models. It is unusual in that it is a shaft built up from three pieces, rather than forged in one piece. Not too many American outboards used built-up shafts. The rotary valve is actually a hole drilled in the thick center disc. The two crankpins are pinned into the center main block.

The newer crankcase 27#250 has crankcase seals which look like giant piston rings. They seal the rotary valve from the crankcase chamber. They are similar to the seals used on the crankshaft of a modern O.M.C. V-4. The older crankcase 27-E-3 did not have the seals. Leakage by the internal rotary valve was a problem if the clearance between the valve and crankcase got too large.

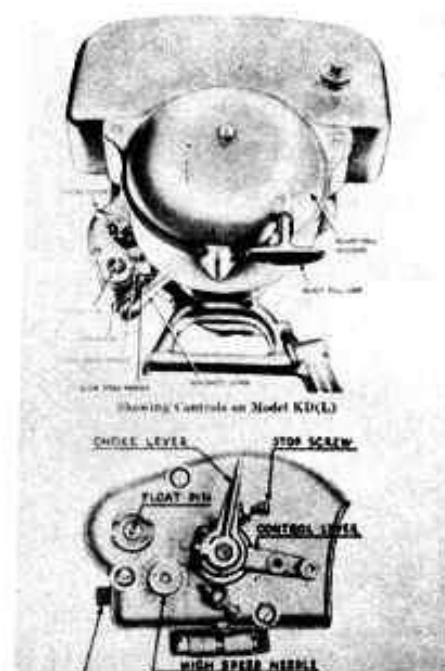
The K-50 used a two ring piston. From K-65 on a three ring piston was used; the third ring was on the piston skirt. The basic ignition parts, coils, condenser and breaker points were the same on all models. Different magneto numbers are listed for the various models because they required different control linkages due to the changes in carburetors from model to model.

The early lower unit had a propeller shaft measuring .625". The later unit had a prop shaft measuring .738", so the propellers are not interchangeable without some machine work on the holes.

For the future I hope to develop enough data on the racing versions for an article on them.



Cutaway view of KA-39 to KD-15 powerhead

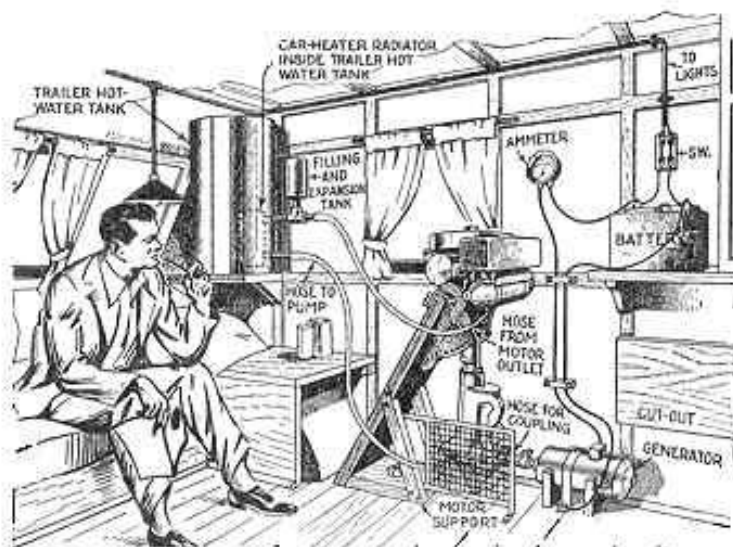


Top view of KD-15 powerhead and K-75 to KD-15 type carburetor

"Popular Mechanics Shop Notes" - 1943

Outboard Gives Lights and Hot Water in Trailer

A small outboard motor can be used to provide electricity and hot water for use in a house trailer. And it takes but a few minutes to remove or replace the motor when it is wanted on a boat. If possible, the installation should be made at the rear of the trailer, outside the living quarters. The best unit includes a small, high-speed motor, a heavy-duty auto generator and a large size radiator core from a car heater. A hardwood motor support should be bolted to the trailer floor. Keep the motor as low as possible so that the skeg, or propeller guard, just touches the floor. The generator is lined up with the propeller shaft, and the two shafts connected with a piece of water hose clamped in place to serve as a flexible coupling. Cooling of the motor and heating of the water is accomplished as follows: Inside the hot-water tank of the trailer is mounted the core of the hot-water heater. This serves as a radiator for



the motor and at the same time heats the water in the tank. It is connected to the motor by auto-heater hose. Only one detail needs special attention. This is the arrangement of a combined filling and expansion tank, which has its top slightly above the height of both the motor and the water level in the hot-water tank. Wiring is conventional, there being an electric cutout on the generator.

—C. E. Packer, Chicago.

DECALS

Decals add that finishing touch to your restoration. These are to original specifications and in color.

Evinrude Single 1921 to 1928 \$4.95 @
 Elto rear tank, any thru 1928 \$3.95 @
 Water applied type.
 Robert Brautigam 2316 West 110 th Street
 Bloomington, MN. 55431

Johnson Light Twin, 1921-1927, plus A35.
 With start and oiling decals. Exact duplicates
 of originals. Water applied \$5.00 @
 Bob Zipp 182 Brentmoor Road
 East Hartford, CN. 06118

Johnson Sea Horse 32, fits V65, V70, VR's
 VE's. Johnson Sea Horse 25, fits all
 Giant Twins, V45, V75. \$10.00 @
 Evinrude Speedifour & Big Four. Modern.
 John C Harrison 1000 N W 54th Street
 Miami, FL. 33127

For Evinrude Scout, 1937, and others with
 similar tear-drop tank. Complete with oiling
 and operating instructions. \$6.00 @
 Bob Grubb 1368 Meadowbrook Road
 Pottstown, PA. 19464

Metal name plates for front of gas tank
 Fits all ELTO Ruddertwins \$5.95 @
 George Loeb 7037 Suburban Avenue
 Norfolk, VA. 23505

Johnson Sea Horse 16 or 24, also fits
 early P and S models. \$7.00 @
 Evinrude 4-60 \$8.00 @
 Eric Gunderson 515 West Main
 Grass Valley, CA. 95945

Johnson K, from P/N 27-227 with S and O
 Instructions, also fit OK55, OK65. \$6.00 @
 Water applied
 Johnson alternate firing A models
 from P/N 25/244 also fit K35, K40,
 K45, KR40, A35, A45, and OA65. \$6.00 @
 Vinyl type, self stick. \$4.00 @
 P/N 11-124-J, model 100 and others. \$4.00 @
 P/N 41-213 fits LS 37, 38, 39 and more \$4.00 @
 P/N 29/151 Fits PO with Sand O inst. \$7.50 @
 Johnson A35, A45, and Sea Horse 3
 from P/N 13-576 Water applied \$7.50 @
 Charles Hansen 1326 Starratt Rd.
 Jacksonville, FL. 32218 all postpaid

For Lauson motors, state single or twin.
 Give model number if possible. \$10.00 @
 E. Walton-Ball 1940 Ellesmere Road U 8
 Scarborough, Ont. M1H 2V7

Neptune 2 HP 1935-1946 \$4.50 @
 3.2 to 9 HP 1930-1947 \$5.50 @
 Evinrude Foldlight 1929-31 \$6.50 @
 ELTO Foldlight 1929-1931 \$6.50 @
 Evinrude Sq. tank, 3 sizes, 1933-41
 2" x 15" or 2 1/4" x 18 1/2" \$6.50 @
 3 3/4" x 26 1/2" \$7.50 @
 Evinrude Models 9035-9038 etc.
 2 1/2" x 35" tear drop tank. Specify
 Dark Blue Green or Silver Gold color. \$7.50 @
 Evinrude 3.3 - 9.7 HP, 1938-1949
 4267-4395 etc. , tear drop tank. 1 3/4" x 26"
 Dark Blue Green or Silver Gold color. \$6.50 @
 Johnson DT 37-38-39-10 \$6.00 @
 Johnson HD 39-10-15 \$5.50 @
 Johnson TN Models, red letters white trim \$7.00 @
 Champion 1926-1938 and 39D3D only \$6.00 @
 1941-42 3.6 HP, S4G, D4G, S1G \$4.60 @
 Blue Ribbon 1947-52 and some later ones. \$6.50 @
 Waterman exact duplicate C16, fits others \$5.50 @
 Terry Kilcoyne 3231 Nicollet Avenue
 Minneapolis, MN. 55408

Publishing Office:
3724 Briarcliff Road
Kansas City, Mo. 64116

Address correction requested
Return postage guaranteed

_____	Bulk Rate
_____	U S Postage
_____	Paid K C Mo.
_____	Permit # 1730



The Antique Outboard Motor Club Inc.



AOMCI 14TH YEAR