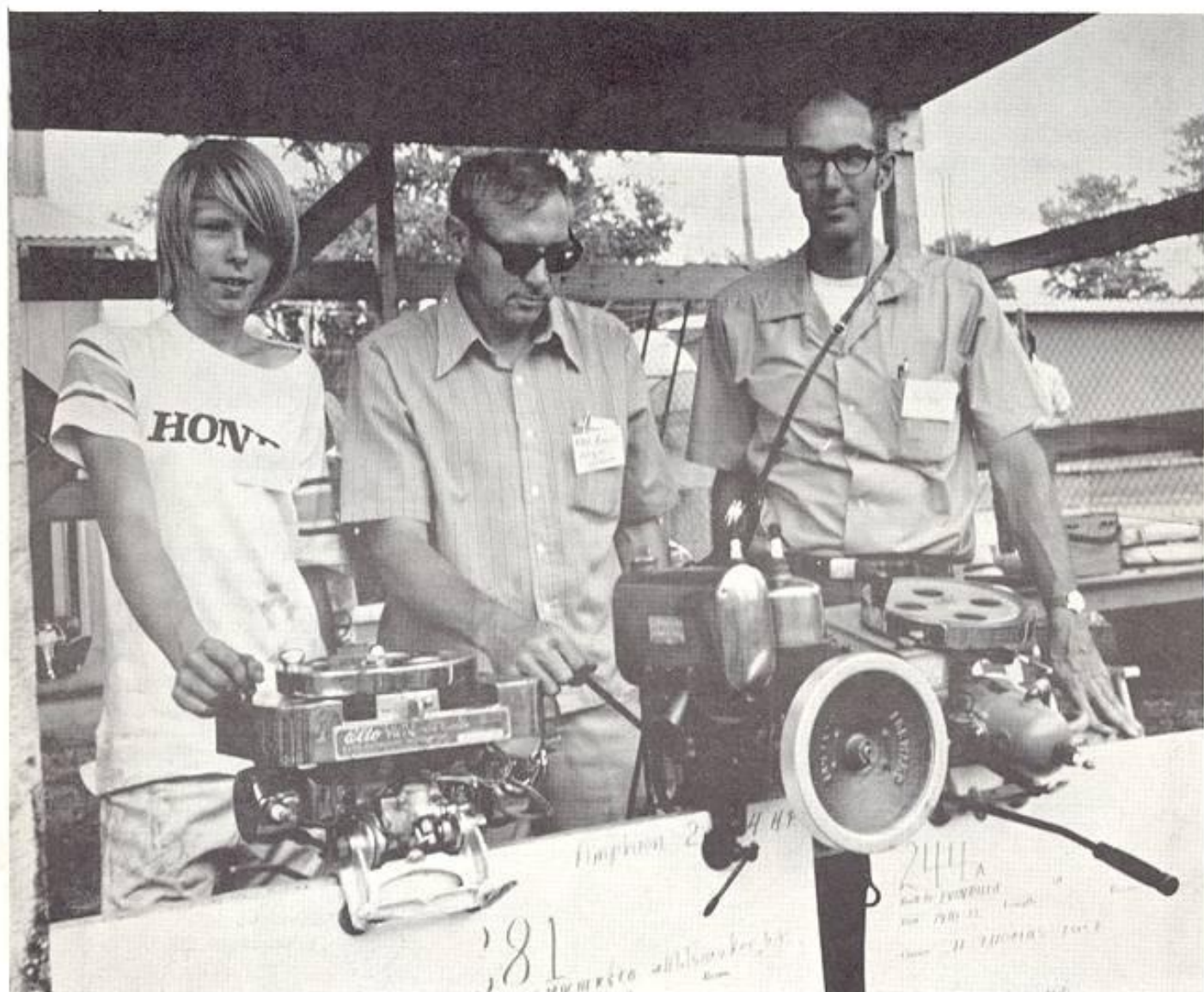


The **ANTIQUÉ OUTBOARDER**



The Pioneering Authority



Hunter-Trader-Trapper, June, 1916.

October

1975

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 \$9.00 per year. Other membership information is available on request from Jim Nixon, 4781 Fifth Avenue, Youngstown, Ohio 44505, U.S.A.

CLUB OFFICERS AND PUBLICATIONS STAFF

President	Robert W. Brautigam 2316 West 110 Street Bloomington, Minnesota 55431
First Vice President	Bob Zipps 182 Brentmoor Road East Hartford, Connecticut 06118
Second Vice President	Walter E. Ellis 3724 Briarcliff Road Kansas City, Missouri 64116
Vice President, Technical Services	Eric Gunderson 515 West Main Street Grass Valley, California 95945
Vice President, Publications	Ron Ellis Route 5 Jefferson City, Missouri 65101
Secretary	Milt Moos 369 Ottawa Avenue Westerville, Ohio 43081
Treasurer	John C. Harrison 1000 Northwest 54 Street Miami, Florida 33127
Membership Chairman	Jim Nixon 4781 Fifth Avenue Youngstown, Ohio 44505
Newsletter Editor	Ron Ellis Route 5 Jefferson City, Missouri 65101
Historian	W. Jim Webb 2560 North 97 Street Wauwatosa, Wisconsin 53213
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 2884 Southeast Francis Portland, Oregon 97202



THE ANTIQUE OUTBOARDER

CONTENTS



Johnson

Sea-Horse Motors and Hulls Complete Outboard Motor Boats



Johnson SEA-HORSE Features

	Page
Letters to the Editor	2
Cover Credits	12
Interior Restoration of Fuel Tanks	13
Knuckle Busters News	14
Dudley Davidson Has a Houseful of Vintage Marine Engines	16
Of Historical Interest	19
1975 Nationals	22
Sam's Scrapbook	24
Dynax -- Outboard Racing Fuel of the Thirties	26
The Koban Twin 1914-1926	30
How's This for a Hard Way to Solve an Easy Problem?	34
Canoes, Row Boats, Motor Boats, and Detachable Motors	38
1975 Eleventh Annual Antique Boat Show	43
Motor Registration (MR) News	45
"Puttering" with Antique Outboards is Man's Hobby	46

Automobile Starting Ease by new ALTERNATE FIRING in Sea-Horses "3" and "12" and famous RELEASE CHARGER in Sea-Horses "3," "10," "16," "25" and "32."

World's Lightest Motor—Sea-Horse "Single," 27 lbs.

World's Fastest Motor—Sea-Horse "25," 28.4 hp, p. 5.

World's Finest Class B Motor—Sea-Horse "12," 42.47 hp, p. 5.

Alternate Firing of "3" and "12" introduces 2 impulses per revolution in a twin-cylinder outboard with smoothness hitherto unknown.

Rotary Valve achieves delivery of full, even gas charge to each cylinder.

Water-cooled Underwater Exhaust frees passengers of noise and fumes.

Automatic Back-pressure Relief.

Full Pivot Steering.

Pressure-vacuum Cooling System.

§ At the 25th Annual Motor Boat Show, New York, January 17th to 25th inclusive, Grand Central Palace, visit the Johnson exhibit, Space 409, 4th floor, and also entire lobby of the Astor Hotel, 45th and Broadway. §

JOHNSON SEA-HORSES & BOATS

World's only manufacturer of outboard matched units, and largest maker of outboard motors. Originator of Water-cooled Underwater Exhaust and Release Charger

Pacific Motor Boat,
January 1930

LETTERS TO THE EDITOR

AN HONOR AND A PLEASURE...

It is my pleasure to acknowledge, with many thanks, receipt of your 1975 Calendar. We deeply appreciate your kindness in sending this material to the Library of Congress, *Nathan R. Einhorn, Chief, Exchange and Gift Division, The Library of Congress*

FIRST OUTBOARD...

This is the first time I have dropped you a line, but I found this little bit of information in the April 1975 *Sports Afield* and thought it might be of interest to all in the AOMC.

Honors for building the first true outboard motor go to a Frenchman, Gustave Trouve. In 1881 he exhibited an electric model that drove a three-bladed propeller by means of a chain. Power was supplied by bichromate of potash batteries. When the fully portable machine was attached to a boat it propelled the craft at almost three miles an hour with four or five persons aboard. Exactly how many such motors were built is uncertain, but the machine was apparently never in quantity production.

That honor went to the American Motor Company of Long Island City, no relation to the present-day auto manufacturer. This company built a stationary gasoline engine for commercial use and in 1896 adapted it to be used as a portable outboard motor. The motor was extremely lightweight, cooled by a wire coil, rated from one to two horsepower with a 3.25-inch cylinder with four-inch stroke. RPM was 400 to 600. It is thought that some 25 of these motors were built prior to the company's dissolution in 1924.

An excellent study of early outboard motors and the companies that built them is available. Called *The Pictorial History of Outboard Motors*, one of the authors, Jim Webb, comes by his outboard interest naturally. He joined the Elto Outboard Motor Company shortly after college and rose to become General Manager of the firm that had by then changed its name to Evinrude.

I will have a chance in about a month to buy a number of parts for Evinrude and Johnson. Most of the parts are for 10-22 h.p. engines made between 1933 and 1949. Do you think members of the Club would be interested in them? All I want to do is get the money back that I will have to pay for them, but I don't want to get stuck with a lot of old parts that I have no use for. I have not seen all the parts, but there are about 20 coils, 5-6 lower units, gas tanks, carb parts, props, gaskets, and a number of other things—I guess about one to two hundred dollars' worth. Is something like this worth getting into, or should I back off? I have been out of the outboard mechanic business since 1951, so I don't remember what engines most of the parts go to. Got any ideas?

I am a Stout State College grad. Stout is in Menomonie, Wisconsin, and I get back to your area about once every three or four years. Next time I am in Minnesota I will try to drop by. *Herb Riebe, 108 Montecito Crescent, Walnut Creek, California 94596*

COMMENTS PLEASE!!!...

I've had a lot of members ask about a model/year guide for engines. I've referred them to the model/year guide for Evinrude and Johnson, and the *Outboarder* for others, but many members say that the OMC literature is not available, and the same with old issues of the *Outboarder*.

Why don't we develop our own model/year guide, by requesting permission from OMC, and using the information in past issues of the *Outboarder*. We could feature Elto, Evinrude Johnson, Caille, Lockwood, Neptune, Lauson, Mercury, Cross, Koban, Waterman, and quite a few others.

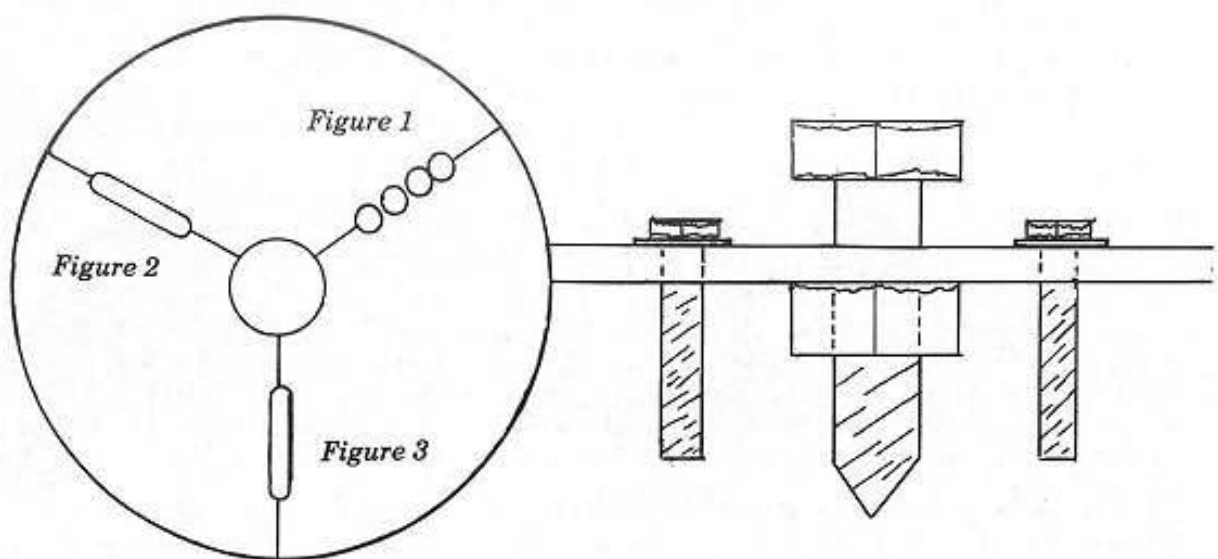
Spiced up with a few photos of the rarer engines, I think this would appeal to many of the members. It shouldn't cost much more than the Parts Sources Manual. Anyway, I'd appreciate your comments. *Don Peterson*

WHAT A TREASURE!...

I just purchased what I believe to be the largest stock of outboard racing motors and parts and boats in the world. For the midget motor I have anything anyone would need, both new and used, and I mean *anything*—you name it. Also two complete and good midget Evinrude racing motors, with extra propellers. Also some Johnson "A" motors, Johnson "B" motors, an Johnson PR-60 "C" Class motors, one brand new Swift "B" boat still in the crate, and two midget three point boats in perfect condition. *Jim Altman, 1815 Fourth Avenue, Arnold, New Kensington, Pennsylvania 15068 phone 412, 335-3112*

SOME POINTERS FROM CLAUDE...

Here's something I made up the first flywheel I tried to get off. Saw or turn a four or five inch disc (I used aluminum) 1/4" thick. Drill a 1/2" hole in the center. Lay out three 1/4" slots equally spaced 1/2" from the hole. Drill a series of 1/4" holes the length of slot you wish. With flat file remove the stock left from drilling *Figures 2 and 3*. Turn or file a 30 degree taper on 1/2" bolt three inches long. With three 1/4" x 20 bolts two inches long and washers, you're in business. See below. *Claude Foss*



CAN SOMEONE HELP RAY? . . .

I have to admit it was fun to see myself on the AOMC calendar, and I also was interested to see that reprint appear.

I hope we can do something appropriate regarding the Bicentennial celebration. I am giving a Johnson J to our museum to recall the '20's and '30's. Of course, the museum had little chance to refuse it, since I'm a member of its Board and co-chairman of our Bicentennial Committee here. But it's created some interest already.

The other day, I "found" a 1929 Quad and bought it. That's the one in Michigan that I think you told Les Stevenson about—which I appreciate very much. I'm not sure what it's really like, but it sounds good—*except* that the spark plug covers are missing, the best part! Have you a spare set? I've written already to the most obvious possibilities, such as Sam Vance, Jim Cason, etc. I'd be very thankful for your help. To trade, I have a set of polished Speedifour spark plug covers, a number of trading motors, some props, etc. And money.

Keep up the good work. The *Outboarder* is real good. *Ray Rydell*



Ray's TR Johnson



NEW LIFE FOR AN AIRSHIP . . .

The Airship in the photo is being written up by me for a Sunday newspaper. It's very fast with a 1966 6 h.p. Johnson. Weston Farmer says use no more than 10 h.p., and I am inclined to agree. It looks much better than the picture now. I'll send a snap of it in action.

You say you-all are not professional writers, but your graphics are very good. Glad to help you out, but my knowledge of particular outboards only goes back to Neptune, the old Sears 2 h.p. air cooled, and the 1/2 h.p. Evinrude, and that crazy canoe motor with no bevel gear and a long connecting rod and crank under water.

I need to know restoration standards for the Airship. In particular I'm curious about whether the wheel and rope steerer in front cockpit is authentic. I found pieces of a Bowden cable throttle in the bottom. No shift of course.

Trailing the boat is a problem, since the cleat is only screwed to the front deck. It really belongs in a museum.

The phenomenal performance of the boat is the real surprise. It looks real crazy right up on top of the water pushed by a 6 h.p. That narrow hull is efficient; should be copied in glas for today's boats. It uses about 1 gallon per hour with 3 people at 15 to 20 miles per hour (estimated). Tippy, though—only 48 inches wide.

Thank you for your help regarding the 22 h.p. Johnson. I know a funny story about one of those. A cousin had to move a 150 foot barge across Boston Harbor. All tugboats were on strike. So he attached the big Johnson somehow and took it across under its own power at about 1/2 m.p.h. All the other boats stopped to give assistance, thinking the barge adrift. As I remember (I was a kid then), the Johnson weighed about 150 pounds. It also moved a 45 foot sloop once. *E. H. Romney*

CAN ANYONE HELP? . . .

Maybe you can be of help to me. I am very interested in antique *inboard* boats, especially Chris Crafts and Centurys. Are there any magazines, etc. about antique inboard boats? If so, I would like to know whom to write. I have written the Chris Craft Antique Boat Club. And is there a magazine called *The Wood Boat*? Thank you in advance for your help. *Jack B. Stroud, Box 1347, Athens, Georgia 30601*

ALL THIS, AND A GOPHER TOO...

This article represents the only other publicity for the "Oldest Motor Contest." The '16 was judged the winner.

However, oh happy day!, an unexpected lead on another old motor in nearby Williamsburg, Ohio turned out to be a Gopher single from the University of Minnesota. The motor is complete except for the muffler. Believe it or not, \$25 bought it. The motor has a straight back type of drive like the Caille Liberty.

I contacted Jim Webb, and he couldn't tell me much about it; however, later he came up with two xeroxes. The two pages are pretty informative except for serial number and date of construction. Mine is a Model B, which I suppose is the second type. My serial is 2774. Simple logic (and high hopes!) lead me to believe that this is the 74th motor of the 1927 class.

Looking back in the *Outboarder* I see, in the October 1970 issue, that you and John Koonce have Gophers too. If you have any other information about the Gopher, I'd appreciate hearing from you. And do you know of any of the forward-pointing Gophers? *Bill Horst*



Enquirer (Mark Treitel) photo

Al Benzinger With '16 Vintage Motor

. . . it's oldest operating motor in Enquirer contest so far

Got An Old Motor?

If It'll Run And It's The Oldest You Could Win A New One Sunday

BY BOB RANKIN

Enquirer Outdoors Editor

Albert Benzinger of Milford thinks he has the oldest outboard motor in the tri-state in running order. If so, he'll win a prize at the 12th annual Tri-State Outdoor Show Sunday at the University of Cincinnati Armory Field House.

Approximately a dozen persons have entered the contest to find the oldest operating outboard in the area. Anyone attending the show Sunday is eligible. First prize is a new motor.

Benzinger said he thought the motor he has was purchased more than 50 years ago for the 14th birthday anniversary of a relative, Victor Schuhard, now deceased Schuhard's son, Samuel Schuhard of Jackson, Ohio, turned the motor over to Benzinger.

"We used it on Lake Cumberland three years ago and broke the spark plug, it cost \$17 to make a new one. Last week I found a brand new plug at a local farm equipment store and it cost me only \$1.35," Benzinger said.

We took the serial number from his motor and found it had been manufactured by Ollie Evinrude in 1916. "If you can find one that goes back to 1909,

Ralph Evinrude, chairman of the board of Outboard Marine Corp., will give you a fortune for it." Jim Jost, public relations director for Evinrude said.

Both Evinrude and Johnson Motors are owned by OMC and Ralph is head of the company.

Meantime Jerry Nardiello of the Middletown, Ohio, Journal has come up with one that was made in 1917. It is owned by James Kinser, who operates an auto body shop in Middletown.

E. J. Schlueter of Shade-tree Dr., Cincinnati, has one with a serial number that dates sometime after the others.

William F. Welland, Mt. Healthy, has an old Evinrude but someone has knocked the serial number plate from it.

"Martin Lang, senior, checked it out for me many years ago. I am trying to find some part on it with a number so we can check it at the factory," he said.

The person who shows up with the oldest motor that still runs, during the afternoon session of the show Sunday, will receive a brand new Evinrude fishing motor. Call Bob Rankin, Enquirer sports, if you think you have a winner.

STILL LOOKING FOR OLD IRON...

DEAR, Mr. Brautigam,
How are you? I am fine,
Do/ you know where I can find
either A twin or a single,
battery ignition Eclipse?
And I would like to know where
I could find any kind of "KNUCLE BUSTER".
Have you seen any RANGERS lately?
(EVINRUDE rangers that is!)
Next time I, in minnesota I will visit
you and your motors.
By the way, you wouldn't happen to
have an EVINRUDE sportwin that you ~~don't~~
don't want? Or how about any ELTO
motors/ or any CAILLES? OR how about
any LOCKWOODS? ETC.....ETC.....

Sincerely,

Mike Hanson

MIKE HANSON

P.S. I, ll write again!

A SUGGESTION FROM CAPTAIN CARBONE...

Enclosed is my ten dollar contribution to help your admirable doings with the old outboards.
Sorry it's a bit late.

If I may, I would like to make a suggestion. I think your magazine should have a mailbag column
which would cater to the likes of me (and I'm sure we number in the hundreds of thousands):
namely, owners of present-day outboards who are only interested in old outboards and do not
collect them.

What we need is advice about doing repair work on the new engines. Since it is getting harder
and harder to find anybody who knows much about them—and that includes the dealers who sell
them—I feel this might bring many new members to the Club. The column could be something
like Tom McCahill's *Mechanics Illustrated* column. *Captain Peter Carbone*

A NOTE FROM OUTBOARDS UNLIMITED. . .

It's been some time since I've sat down and written a letter just for fun. Since my last letter ran in the magazine, I've been overrun with calls, letters, and visits. John Schubert was here a couple of weeks ago. I found him a Mark 55 block for his racer. He in turn found me a KR and the man to see about the OMC inventory system. I'm finally going to get this stuff in order!

Bill Rose was here Sunday. Seems he hasn't left for good yet, but is semi-commuting between here and Arkansas.

I've been thinking for some time about parts reproduction, and I don't think that it is something I can get involved with right now. But maybe there is someone in the Club who is in a better position for a venture like this. So, to that end, I'd like to offer the loan of any part I have in stock, including decals, to anyone wishing to reproduce same, with the stipulation that enough be reproduced to satisfy both current and anticipated Club members' needs. I've already sent a bunch of decals to Charles Hanson, but it's not right that one member should have the financial burden. I'd like to see it spread around. I've got a bunch more original decals that deserve reproduction, mostly Evinrude, and I'll list them if you feel that this project has merit. I've also got at least one example of every carb top, lever, needle, etc. ever used by Johnson, Evinrude, Elto, plus one of every rope sheave, transom screw, pad, and most any other vulnerable part. If there is anyone in the Club willing to take on any part of this task, my inventory is open to him. I'll even loan parts off my motors, if necessary.

We've found out that Jim Ross's '29 Quad is actually Ralph Evinrude's racing engine!! The story goes: Ralph built this one special, the only one to mount dual Tillitsons on dual poppets. It hung in the Engineering Department at Evinrude until about 1943 or '44, when they *threw it out!!* Nick picked it up for parts. *Jim Cason*

THE *POLITICIAN*. . . .

The photo below shows the AOMCI *Bullet* hull built for me by Dick Rees, Pottstown, Pennsylvania, from plans in the April 1970 *Antique Outboarder*. Dick changed the plans a little, putting the transom in at an angle. This picture was taken at the 1975 Collingswood, New Jersey meet.

The motor is my 1929 SR-45 Johnson. The boat handles this motor very well. I ran a very similar boat in local races in 1929 and 1930, powered by a worked-over 1928 Model H 12 h.p. Fastwin in Class "B."

The name *Politician* was selected, as the outfit puts out much more noise than action. *Mori Daller*



Dear Mr. Braunigan:

My late husband had many gas powered outboard motors which he loved dearly, and was always fussing over. Most of them ran and look to be brand new. I still have these motors today and would be glad to give them to anyone who would "love" them as my husband did. They all look brand new, having been carefully covered and stored for several years. I have talked with an outboard motor store, but they told me they are just junk. I considered giving them to a museum, but if they even wanted them, they would not take care of them and use them, only put them on display. I am 87 years old, and even though I can no longer write do to my shaking hands, thank the good Lord, I can still type, and Dr. B. says it is good exercise for my fingers. I have listed below the motors that are tagged and a description of each, as best I can. In addition there are many more motors not tagged and about 50 wooden boxes of parts. He also had many books, catalogues and files, which I still have.

TAGGED MOTORS

kr55 Johnston 2 sparking plugs in back, one on top of the other
1 gas-air mixer in front

vb50 or vr50 can not tell for sure. Johnston
4 sparking plugs, 2 on each side
2 gas air mixers in front one over the other

4378 Evinrude this has covers over sparking plugs and gas air mixer
Zepher, is on the gas tank this is not as big as the
others and he used it for fishing.

Evenrude Speeditwin 6008 2 sparking plugs not sure on gas air from my notes

4-60 Evinrude 4 sparking plugs 2 on each side, 1 gas air in front

Evinrude ~~200~~ 6042 Hexhead 2 sparking plugs, 1 gas-air (i think)

Evinrude Midget 1 sparking plug, 1 gas-air mixer (smallest motor)

Evinrude speedibee 2 sparking plugs, 2 gas-air mixers 1 on each side,
2 gas tanks 1 in front, 1 in back, 1 arm on each side

sr55
~~kr55~~ 2 sparking plugs Johnston

xr5? (can not make out last number) Johnston 4 sparking plugs 2 on each side
1 gas air mixer

If you know anyone who might be interested, please have them contact me. All I ask is that they take them all (it will take a large truck). I do not want lots of people parading through my house and garage and taking just 1 or 2 motors at a time. Also I expect them to be cared for.

Very truly yours,

Lottie Andover
(Lottie Andover)

NO ADDRESS

FROM NORTH OF THE BORDER...

I always enjoy the monthly *Antique Outboarder*, as it contains so many interesting articles and information as to what is happening with old outboard motors. I was quite surprised at the number of members you have here in Canada.

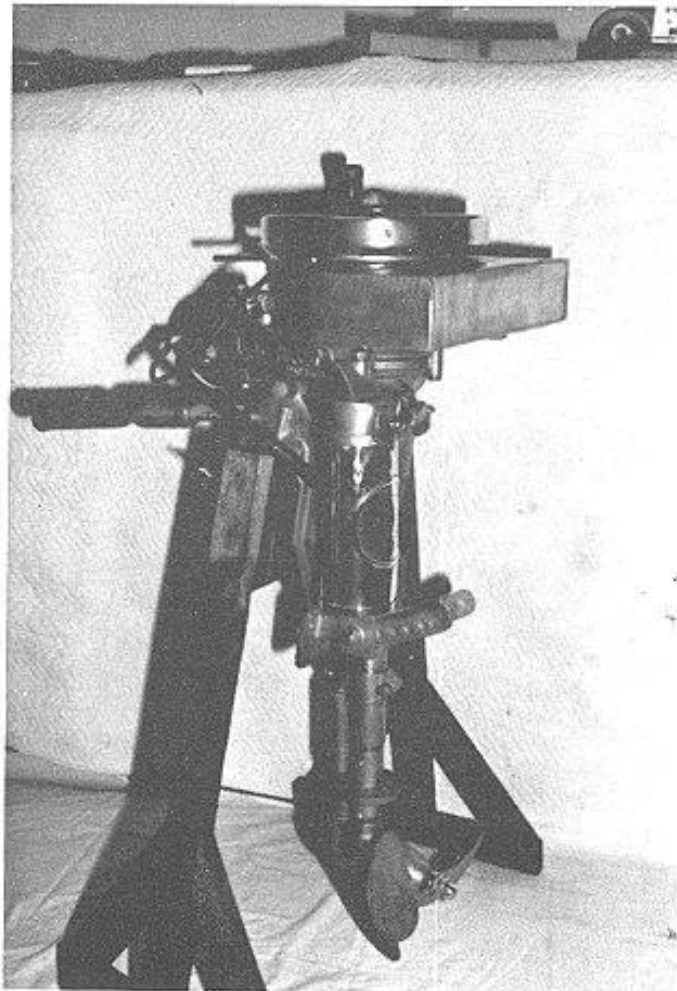
I am looking for a couple of parts, and I would appreciate it if you would be good enough to publicize my needs in a forthcoming issue. I need these gas tank caps:

Neptune AOB 100-17

Johnson #42-23

OMC 195850

In your April issue on the back page you list various decals that are available for OMC engines, and I thought it might interest some of your members to know that I still have a small supply of decals for the old Lauson Air-Cooled Series, both for the Single and Twin, at \$5.00 per set.
Eric Walton-Ball, Box 404, Don Mills, Ontario M3C 2T2



Don Holmberg's Evinrude Model C, 60295.

BETTER AND BETTER AND BETTER . . .

Having been involved with the AOMCI since 1966, I've seen a long, slow, and definite improvement in the quality of antique engines members bring to the meets. Most of them run better than in the earlier days. Cosmetics are well beyond the early days, also.

The members themselves seem to have sorted themselves out to types who don't mind getting their hands dirty and are, in many cases, rather fine mechanics.

Believe me, I am really pleased at having gone to two meets this year—and I haven't won anything! It used to be too easy. Now we have more and better competition in all quarters, which is what the Club is really all about—restoration and preservation of the old timers. This means more people are getting involved and there are more of the better restored and better running engines around than ten years ago.

I'm pleased to have participated in the more formative years and contributed to standards then that today are resulting in better antique engines. *Marcus S. Wright, III*



FRONT COVER

Phil Kranz and Tom Luce continued their strangle hold on prizes in this year's Antique Boat and Motor Show at Clayton, New York, but young Scott Janowski of Rochester, New York broke into the ranks when he won the trophy for the best restored outboard motor with a spotless Elto Light Twin.

Kranz won with a rare Amphion Twin, built by Machek & Co. of Milwaukee, Wisconsin that featured a horizontal crankshaft and two sets of gears to the propeller shaft. Luce won the trophy for the oldest motor exhibited with a 1.5 hp Evinrude.

The 1975 Clayton show attracted a record field of entries, and the new permanent facilities of the Museum insure that this Thousand Islands area attraction will continue to grow.

Photo courtesy of Armand A. Hauser, Vice President of Customer and Industry Affairs, Mercury Marine, Division of Brunswick Corporation, and the Public Relations Department, Mercury Marine, Fond du Lac, Wisconsin.

BACK COVER

Glenn Ollila visits Ray Rydell at Ray's home in Avalon, California. Engine is a Johnson Giant Twin.

Interior Restoration of Fuel Tanks

by Mark Wright

Two problems seem to be the ones most frequently presenting themselves inside our antique engines' tanks: (1) cleaning, and (2) leak stopping.

Cleaning the inside of a fuel tank can, with the tank removed, often be done with a length of chain or several handfuls of crushed driveway gravel. Put these items into the tank with a small amount of water. As if you were shaking a proper cocktail, give the tank the same action, with a frequent water change to flush out the loosened residues as they break up.

Tanks having very heavy concentrations of gum and old fuel varnish may need softening with methanol soaking for a length of time. You might also try sloshing a strong paint remover in that filthy tank to soften and loosen those residues. If the tank's decals and paint are beyond use, in some cases a steam jenny may be employed usefully through the filler opening.

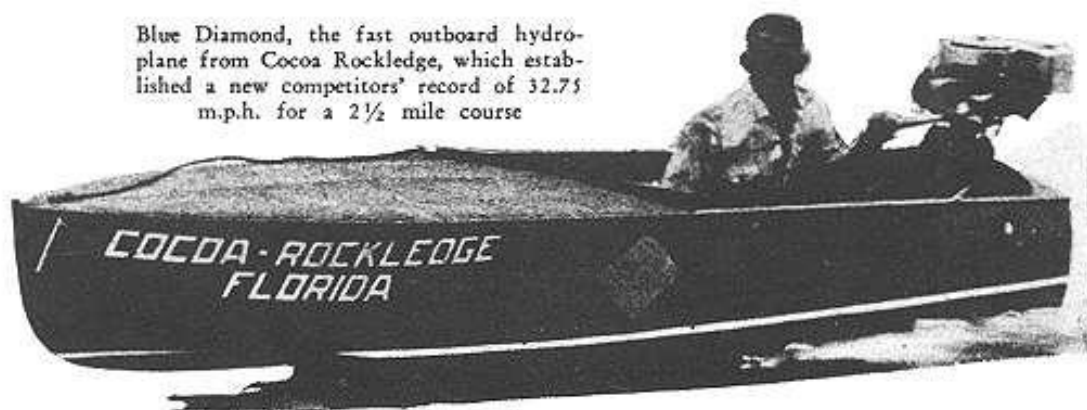
The more patient you are, the cleaner the tank will become.

Many of the older tanks will leak due to corrosion pinholes, bad seams, or the fact that they are cast aluminum. The aircraft industry uses a liquid lining product which works very well to stop old leaks and to insure against new leaks. Sloshing Sealer #802 made by Randolph Products Company, Carlstadt, New Jersey 07072 is poured into the cleaned fuel tank. The tank is moved so the top, bottom, and sides are covered by the liquid. The surplus Sloshing Sealer is poured out, with the resulting coating being allowed to dry. This process is repeated once or twice so two or three coats of the tank lining deposit in the tank. This lining is soft and somewhat rubbery to the touch.

Should you live near an aircraft overhaul facility, you might be able to locally obtain Sloshing Sealer. Otherwise, write the manufacturer direct and ask who stocks it in your area.

These methods will help you salvage and restore tanks to usefulness quite reasonably in your own shop. We have used these suggestions quite a few times in recent years and thought you would like to know about them.

Blue Diamond, the fast outboard hydro-
plane from Cocoa Rockledge, which estab-
lished a new competitors' record of 32.75
m.p.h. for a 2½ mile course



KNUCKLE BUSTERS NEWS

by Mary L. Daller

The 1975 meet of the Knuckle Busters Chapter of the AOMCI at Collingswood, New Jersey on June 7 came off much better than anticipated. In spite of various obstacles which prevented us from using the "Antique Outboarder" or the Newsletter to advise members that the meet was definitely on as planned for June 7, necessitating contacting members in our area individually, we had 14 members attending, with 12 bringing a total of 36 motors.

Registering were: Philip Benedict and his wife, Bert Bauer, Bob Thornton and family, William Andrulitis, Tony Caglione, Bob Grubb and family, Bob Davis, Tom Luce and family, Stan DuBois, Mark Wright, Bryon Shannon, Sam Vance and family, Galloway Morris and his son, and Mort and Mary Daller.

Winners were selected by three judges, none of whom were connected in any way with the motors displayed: Clyde Kreider, representing CRC Chemicals (who furnished the awards); Wes Jones, an old time outboarder and alky racer; and Joe Schmutz, another old time alky racer.

Awards were made as follows:

Oldest Running 1 cyl. service motor
Oldest Running 2 cyl. service motor
Oldest Running 3-4 cyl. service motor
Best Restored 1 cyl. service motor
Best Restored 2 cyl. service motor
Best Restored 3-4 cyl. service motor
Oldest Running Racing Motor

Tom Luce, 1910-12, 1½ h.p. Evinrude
Sam Vance, 1921 Elto Ruddertwin
Sam Vance, 1923 Elto Quad
Tony Caglione, 1916 Caille 5-speed
Bob Grubb, 1924 Model A Johnson
Sam Vance, 1923 Elto Quad
Bill Andrulitis, 1929 Class B Caille "Flash"
with tractor lower unit

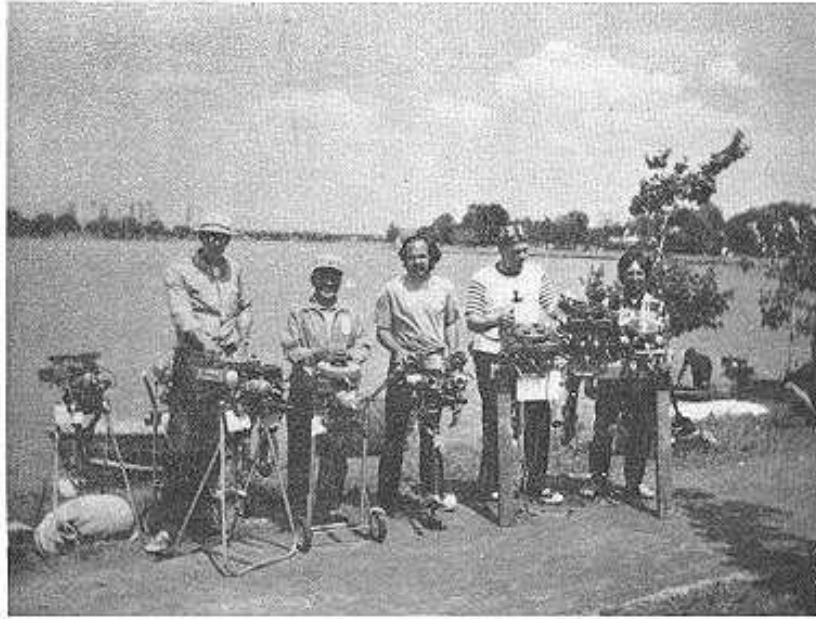
Most interesting Restored Motor (voted on by AOMCI members at meet)

Bill Andrulitis, Caille "Flash" racer

There was one double winner and one triple winner. In picking the best restored motors, the judges advised they considered mechanical restoration *and* appearance.



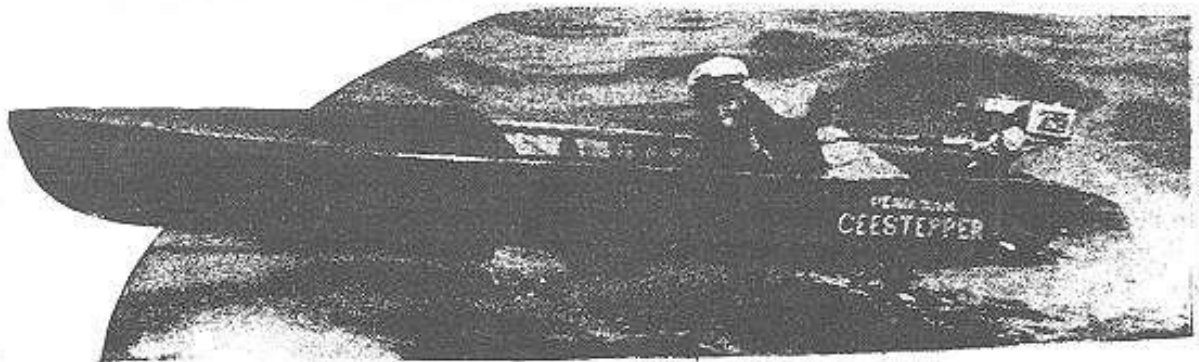
Judges at Collingswood Meet, left to right: Clyde Kreider, Joe Schmutz, Wes Jones



Winners at Collingswood, left to right: Tom Luce, 1910-12 1 1/2 h.p. Evinrude; Tony Caglione, 1916 Caille 5-speed; Bill Andrulitis, 1929 Caille Racer; Sam Vance, 1921 Elto Rudder-twin, 1923 Elto Quad; Bob Grubb, 1924 Model A Johnson.

The meet was held at the west end of the Lake at Collingswood. The sky was clear and the very strong west wind presented no problem. At the other end of the Lake, about one mile away, the Delaware Valley Outboard Racing Association Stock Races were cancelled because of the great number of upsets from the wind which swept down the Lake. Sunday's DVORA race was also cancelled for the same reason. Our only casualties were three banged-up props from an underwater obstruction which we later buoyed off.

When the stock races were cancelled, many of the drivers came and watched the demonstration runs of the antiques. Two stockers asked for, and were given, applications to join the AOMCI.



Dudley Davidson Has a Houseful Of Vintage Marine Engines

Seattle Post-Intelligencer NORTHWEST

Sun., June 15, 1975

by D. P. Bond

Submitted by Everett Reynolds

DUDLEY DAVIDSON has one of the world's largest collections of marine engines in his basement. And in his garage. And in his living room.

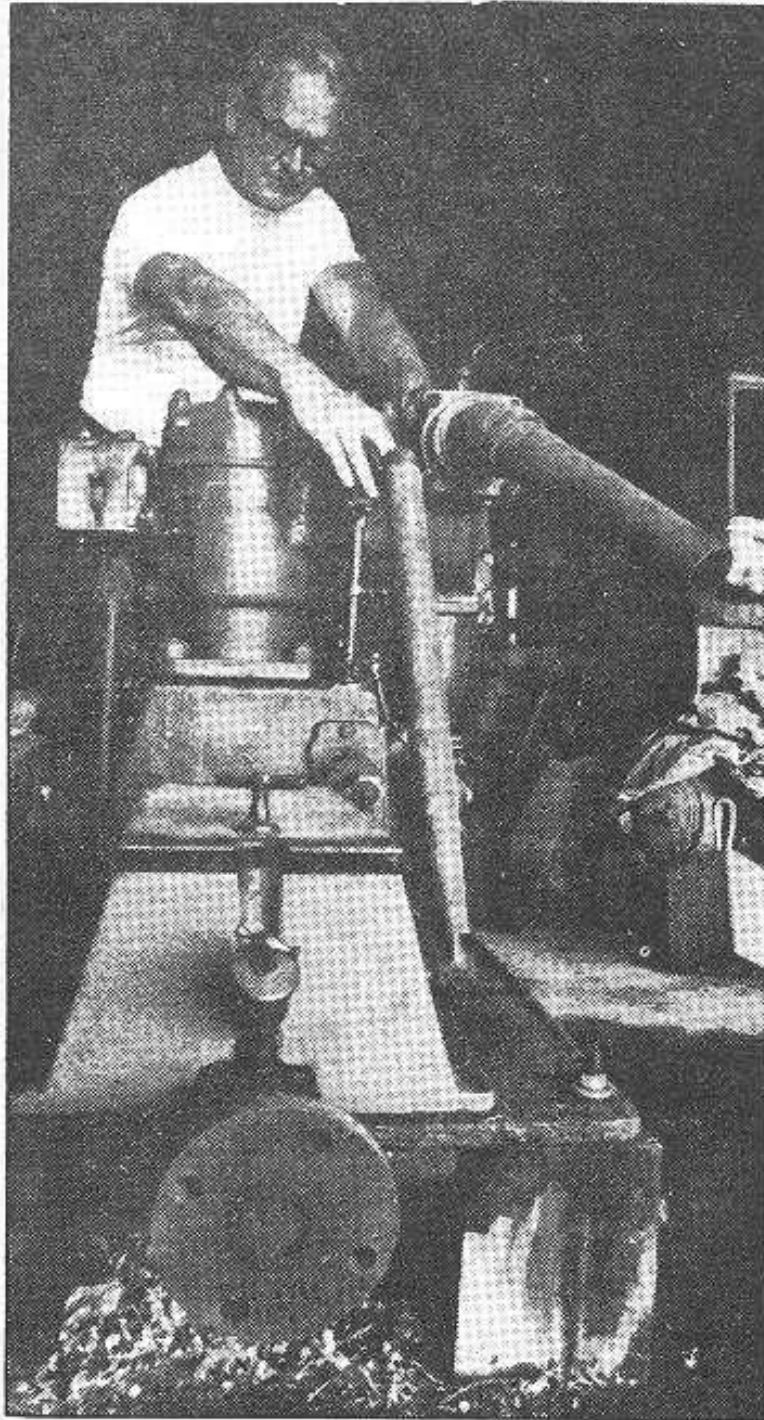
"I should have taken up stamp collecting," Davidson says of his 14-year-old hobby. Since 1961, 92 antique boat engines have found asylum from rust and ruin at his North Seattle home. In various stages of restoration, they represent nearly every attempt to power a small boat from the first decade of this century to the 1940s.

He's not a mechanic, but his business as a boat sander has brought him close to the fascinating facets of the waterfront. He fell into engine collecting out of an interest in machinery and in preserving things no longer made.

His engines range in size from a 50-pound, one and one-half horsepower Cady to a behemoth 40-horsepower Hercules that weighs well over a ton.

Turn-of-the-century inboard boat engines typically were one-cylinder, two-cycle affairs like the Cady and cost about \$70. Engines of this type were common in small launches and open boats, weighed an incredible amount for the quantity of horsepower produced, turned slowly (well under a thousand revolutions per minute) and swung huge propellers and flywheels.

When a manufacturer wanted to increase his engine's horsepower, he simply cast another block and piston, and bolted it onto the first, connecting the two pistons with a crankshaft. This technique kept costs down, and was a popular method of engine construction through the 1940s. As the practice grew more sophisticated, a single casting was made for two cylinders, thus one model of engine could be purchased with two, four or six cylinders, depending on the size of the boat and desired speed.



Davidson adjusts timing on 8 hp Regal, c. 1925

A flurry of powerplant technology during World War I brought an end to the two-cycle inboard engine. The four-cycle engine was born, and a new group of manufacturers grew up.

Although a four-cycle engine involved more moving parts than its predecessor, simplicity still was the key.

Another tie to earlier days was the sheer mass of the engine compared to the horsepower it generated. Because of the crude types of bearings and other high-wear parts available, the four-cycle monsters were equally overbuilt.

"In those days " says Dudley, "they simply didn't have the metallurgy and engineering know-how to build the kind of engine we have today. That's what makes these old things kind of classic. They're heavy and slow but at the same time they don't generate much heat, so they're very, very reliable."

"In general, these engines could and did run wide open hour after hour. You can't do that with a new engine."

Most of the old marine engines were great for their times. But there were a few lemons, like the Dunn.

"The Dunn was one of the cheapest engines ever built," Dudley says. "The complaint was that if you got a brand new one you couldn't get it running and if you got it running you couldn't keep it running. The connecting rod on it was a piece of three-quarter inch pipe. A five horsepower Dunn sold for \$42.50 when \$80 was a more common price."

Although most marine engines were built on the East Coast and in the Great Lakes area, quite a number of reputable manufacturers called the Puget Sound region their home. In Victoria and Vancouver, B.C., respectively, were Vivian and Easthope, the latter of which is still in operation. Cleft engines were built in Bellingham, the Grizzly Bear in Olympia, the Hallin and the Wright in Tacoma, and the N&S in Seattle. All except Easthope were gone by World War II.

Some 40 of Davidson's engines are outboards, and his oldest of that type, a 1907 Walnut, is one of only two he believes still exist in the United States. The Walnut was an early attempt at an air-cooled two-cycle outboard, and enjoyed a short production

run between 1907 and 1909. He also owns one of the first inboard-outboard designs attempted. The engine, mounted inboard, was connected to a shaft and propeller which could be withdrawn into a recess in the boat's bottom, enabling the skipper to beach his boat without damage.

What killed the old engines, outside of the increasingly prohibitive cost of hand labor required to create them, turned out to be not technology, or wear, or anything else that builders might have planned on. It was rust. Nearly all were operated and cooled with salt water, a substance which in time destroys even the staunchest hunk of cast iron. They were replaced by a new breed of noisier, faster, mass-produced and infinitely cheaper machines, so that now only a handful remain which still propel boats around Puget Sound.

Davidson is looking for a building he can buy to more properly display his collection, one that will give him the room necessary to restore all of his engines, a project he's saving for retirement.

"They're backing me out of the house," he said. Recently Davidson dug a basement to accommodate his hobby, but now it, like the garage, is full. And there's no room for that Hercules in the kitchen.



OF HISTORICAL INTEREST

..... *W J Webb*

What Would Happen If ?

A number of AOMC members have been asking questions which boil down to "How would the old pre-WW II racing motors perform if used with today's 'hot' fuels, today's fast boats, today's prop walking designs—what would happen if I should fit a 4-60 or a Johnson XR with reeds—" the list is endless. What I am about to offer in the way of an answer is just my opinion, and I am not about to enter any argument with anyone over it, as any engineer worth his salt can find good grounds for differing with any other engineer on any subject, and, brothers, I ain't an engineer. Besides, I have asked around among people who should know better than I, and the following is how I remember what they said.

First, what about the "hot" fuels in wide use today. Generally, the pre-WW II X's and souped 4-60's, Racing C's, PR's, VR's, etc. would probably have done a few miles better with "fuels" IF the pistons could have stood the extra heat and IF the rods and cranks could have stood the extra pressures of the new fuels that burn faster, almost to the point of detonation, and develop more heat.

In the early '30's before removable aluminum water jacketed cylinder heads with changed piston and head design promoted better cooling and scavenging, piston burning was quite a problem. The removable cylinder heads also let the "souters" play with higher compression ratios by planing off as much of the head and barrel as the motor could stand. Many a motor blew up because someone planed off .010 inch too much. It was largely cut and try, and the boys who could afford plenty of new parts generally came out best.

The most sensible answer to the question is that about the only way to tell for sure what an old X, for example, could do with new fuels would be to try it with pre-WW II fuel on a good boat of pre-WW II design and again, on the same day in the same kind of water and with the same load and ambient temperature on one of the latest type hydros. The new fuels should help some, maybe three to five per cent; the new boats should be plenty faster, maybe ten mph. Then a new design prop should follow. And don't forget that today's oils are better than pre-WW II oils. Trouble is, no one that I know has really tried the old against the new with accurate controlled testing. Most opinions (mine included) are just educated guesses.

The differences between the old pre-WW II motors and today's gems are many. They involve new materials that can stand greater stresses of all sorts, new, more accurate machining processes that produce finishes and dimensions more accurate even than those which a great one like Dean Draper could make by hand.

To name a few of the important change areas, let's start with the carburetor. High-speed photography, like 2,000 frames a second, which wasn't used in the '30's, shows what is really happening in the carburetor, pulsations in fuel flow, effects of movement, air flow and pressure, what was really accomplished by changes in venturi shapes, etc. Before high-speed photography we could only guess and go by the human eye, which isn't fast enough. What we found dictated important performance-improving changes.

Then on to the type of intake. Where we had used crankshaft and gear driven rotary valves before, all, or nearly all manufacturers went to reed valve intakes within a few years after WW II. The old rotary valves were OK, but the reeds in use today offer much better all-round performance possibilities. Before some rotary valve lovers (and there are many) start a flap, I will take a few minutes later on to talk about rotary valves.

The reed valve intake made its first appearance in this country on the little 1½ h.p. Evinrude Sportsman in 1935. That reed was not a complete success at first. Evinrude and the steel reed people still had a lot to learn about just how to build a reed that would not get tired and break, and learn we did, but not before WW II. After WW II, with the aid of high-speed photography, we could see exactly how the reeds operated, how they bounced, bent, sealed the opening, what backing did the best job, and just how the fuel-air mixture acted when passing around the reed and through the reed openings into the crankcase. Naturally important changes followed the high speed picture studies.

Then on to the crankcase with glass windows. High-speed photography showed what the crank was doing to and with incoming charges. Changes in crank and interior crankcase design followed.

Next, the glass-windowed bypass and finally into the cylinder head, where researchers were finally able to see how incoming charges moved in the cylinder head, just what happened with flame propagation from the instant of the spark to the opening of the exhaust port. Incidentally, for flame propagation, 2,000 frames a second wasn't fast enough. Much higher camera speeds were necessary. Such studies resulted in new cylinder and piston shapes, all of which resulted in more efficient heat production, hence more power, better scavenging with smaller loss of unburned fuel, etc.

High-speed photography helped with exhaust tuning. The only trouble with exhaust tuning is that you must decide the RPM range in which the motor will be most likely to run, and tune the exhaust for that range. Otherwise tuning may not help much if the RPM range is too far above or below that tuned for.

Then come ignition and spark plugs, and again, high-speed photography comes to the rescue. It showed that ignition points actually bounce at certain rates of speed, and sometimes for no reason. This caused missed shots. Plugs of the '30's wouldn't last around the block with today's hot motors. The plug has a great deal to do with accurate and consistent flame propagation. From these studies came better plugs, coils, condensers. I won't touch on the new breakerless ignition.

This all adds up to the engine of today being an almost totally different animal than what we had in the pre-WW II days, or even in the first years after the war. So much for the powerhead.

Along with other changes made since WW II, changes in gear housing and propeller design, as well as different concepts of gear ratios, have contributed to higher boat speeds. Again, high-speed photography showed us exactly what was happening to water as it went past the gear housing, and important changes were made. For example, a shape which was just right for 60 m.p.h. would not be best for higher or lower speeds.

Strobe light studies showed that certain designs in propellers would actually produce areas of turbulence, small water spouts or tornados on the backs of high-speed propeller blades that would actually erode holes in the backs of blades, even steel blades. Before stroboscopic studies were available, we used to think that those little holes in the backs of blades were due to faults in the metal. Who would ever think that a little water spout could eat a hole in steel?

The advent of prop walkers, where the propeller is half out of water, dictated important changes in propeller and gear housing design as well as in gear ratios and gear design. Again, strobe and high speed photography helped solve these problems.

I know of no accurately controlled tests which would establish the speed to be gained by the use of a prop walker with proper gear housing as against the pre-WW II housing design with wholly submerged propeller. However, a very knowledgeable pro in the engine tuning business has told me that he thought he gained about 7 miles per hour when he put a prop walking housing on a souped 4-60.

In pre-WW II days not too much attention was paid to the aerodynamics of boats. As speeds rose up to and past 100 m.p.h., boat designers began to compute air lift in different hull shapes and take measures to get help from such lift. But that is another subject, far beyond my abilities even to guess about.

Now about rotary valves versus reeds. No one can say which would be best because no one has ever built a motor and put into it the most advanced construction based on the best knowledge available and then tried that motor or powerhead with a crankshaft rotary valve, a gear driven rotary valve, or a correct set of reeds for intake. Until someone builds such a motor and tests it under the most carefully controlled and identical conditions, no one can say for sure which would be best.

Informed engineering opinion is that under most conditions a motor with the reed valve intake will idle better, develop higher torque, run more consistently, and be more likely to start more easily in the hands of the average user.

Hypothetically, in an engine designed to run at a given rate of RPM, say 6,500, either a crankshaft rotary valve such as Evinrude used in the few Evinrude X's built just before WW II, or a gear driven rotary valve such as Johnson used, would enable that engine to develop as much power as it could with the reed intake. It would not be superior to the reed in power development, but it would be equal to the reed. However, the rotary valve job, either crankshaft or gear driven, would not idle well, and its all-round operation would not be as satisfactory as that of the reed in other than the 6,500 RPM range.

I have been told by people in whose veracity I have every confidence that they have fitted both Evinrude X types and Johnson X's with reeds, and that higher speeds have resulted; but since I haven't seen such motors run, I can't vouch for it.

As far as I am concerned, I will take the reed. It has proved itself to be a thoroughly reliable intake system, it is less expensive to build, and it is easy to service and start in the hands of the novice.



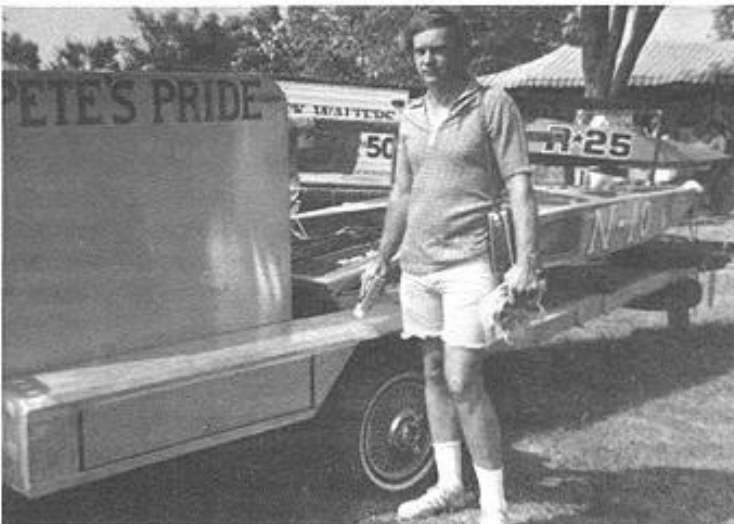
1975 Nationals

Held at Winona, Minnesota
week of August 18 through August 24.

Good weather and a beautiful setting played host to the country's best of drivers and equipment during the A.P.B.A. Nationals. Konigs and Mercurys set the fastest pace, but there was plenty of C service action featuring the older Evinrude Speeditwins.



Typical of the beautiful race gear characterizing the Nationals. Engine is a Konig.



Bob Peterson poses by a rig bearing his nickname "Pete." Just coincidence, but give Pete a little time and he'll probably have his own setup.

AOMCI members known
to be in attendance:

John Herberg, Illinois
Stan Herberg, Illinois
Bill Tenney, Minnesota
Glenn Ollila, Minnesota
Jim Johnson, Ohio,
C Service Class
John Schubert, Florida,
Driver
John Toprahanian, California, F Class Runabout
Ron Johnson, Minnesota
Bob Peterson, Minnesota
Bob Brautigam, Minnesota



Member/racer Jim Johnson of Dayton, Ohio. Jim has both 3 point hydro and runabout equipment.



One of Jim's several Speeditwin race motors.



Ron Johnson and John Toprahanian [under sombrero] discuss the old days. John's motor had ignition problems and failed to make the cut.



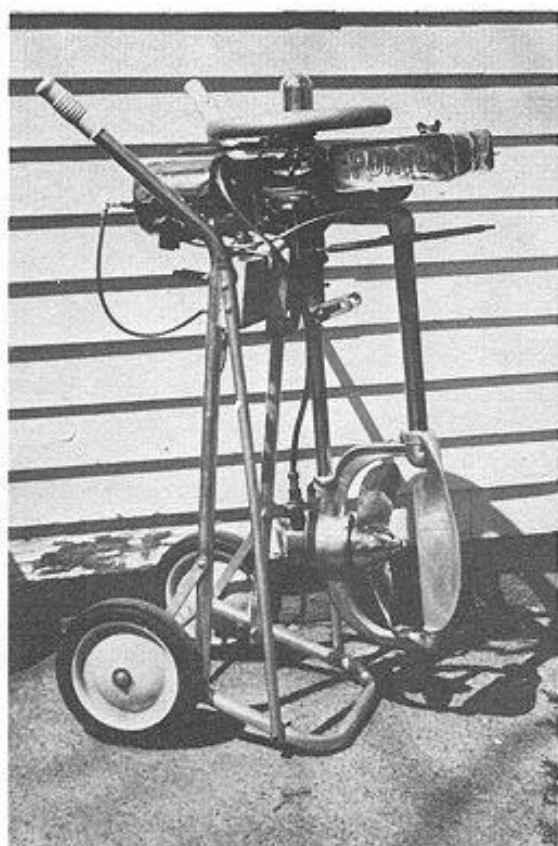
Jan Brautigam, Sherry Peterson, Bob Peterson, and Ron Johnson.

Sam's Scrapbook

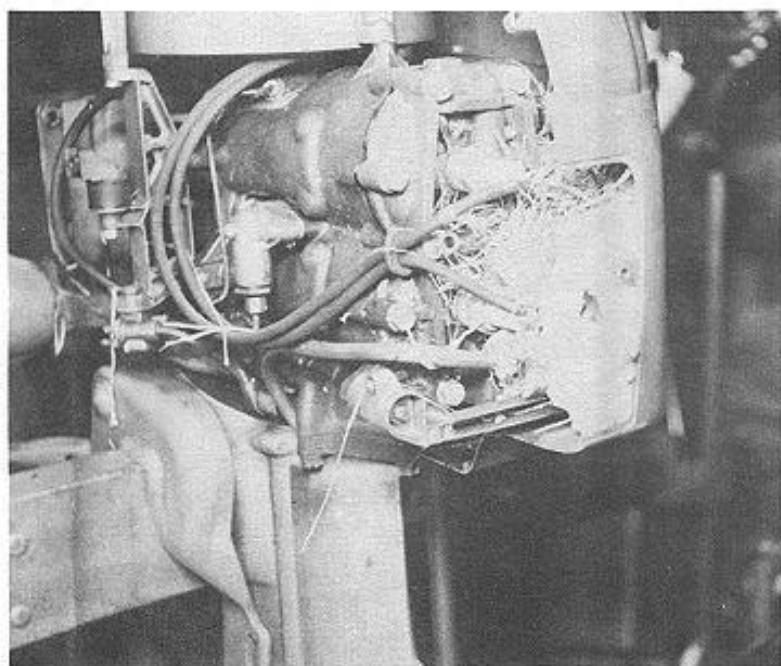
by Sam Vance



1913 Waterman, as received.



1913 Waterman, restored.



1949 SD15 Johnson with "mouse house."

DYNAX—Outboard Racing Fuel of the Thirties

by Dr. J.F.T. Berliner

Jim Webb has been successful in getting the true story of Dynax, the wonder outboard racing fuel of the '30's, from the man who had most to do with its perfection and development, Dr. J.F.T. Berliner. You racing old-timers who were around in the '30's asked many a question about what went into Dynax, and it was chemically analyzed many times, but those who tried to copy Dynax found that what they put together cost more than the Dynax put on the market by du Pont, and it didn't run quite as well either. Dynax, as such, is not on the market now. Before the advent of Dynax, which proved to be the best outboard racing fuel available in the '30's, there were concoctions of every kind for racing outboards as well as every other kind of racing contraption. Motor ether was a popular ingredient added by guess and by gosh by drivers who hadn't the slightest idea of what was really required in a racing fuel. Many a cylinder was lifted off the crankcase, many a connecting rod was bent, and many a hole was burned in pistons by the explosive mixtures. There were other additives used besides ether, and with results less than successful. And how some of them smelled!

Dynax was a highly-publicized and widely-used non-gasoline outboard motor racing fuel compounded to contribute more power (about 7 per cent), increased speed (3 to 5 per cent) and acceleration compared to gasoline. It was a complete, ready-to-use fuel suitable for all sizes of racing motors, as it contained a novel self-generating lubrication system. It contributed easy starting and overall cooler operation. It had the disadvantage of greater fuel consumption, and required some modifications in the fuel system due to its higher density and higher viscosity (slower flow needing increased jet sizes and larger fuel lines.)

How it was conceived: In 1929-1931 du Pont produced substantial volumes of synthetic methanol in a step in the purification of gases for the manufacture of synthetic ammonia. At first, it was considered just a very low-cost* by-product (the accountants had not yet allocated the costs). Du Pont's first thoughts for its disposal included using it as a possible ingredient of automobile fuels. (This concept is now again being actively revived.) To this end it was suggested that a superior racing fuel containing methanol would establish some recognition for its introduction as a gasoline additive. A survey of racing indicated that of all forms of racing at that time, outboard racing consumed more fuel than any other racing sport. It was, therefore, decided to try to compound a super-outboard racing fuel and to try to establish speed records and acceptance in this sport.

The two-cycle engine allows considerable room for improvement of power in that the engine has low volumetric efficiency which can be materially improved by increasing the amount of fuel-air mixture intake into the cylinder per stroke. This can be done either by super-charging or by fuel injection, but more simply by increasing the weight of the air-fuel mixture entering the cylinder by cooling the charge. Methanol has a high latent heat of evaporation; that is, it absorbs heat on evaporation, so much so that carburetors and intake manifolds become covered with ice in use.

*Now methanol is produced in large volume and by several firms, but the price is much higher than it was as a "by-product."

The next objective was to design a fuel that could be used interchangeably in any size motor. Every class or size of engine required a different fuel/oil mix. This goal was achieved chemically through the development of compounds (higher alcohols somewhat like fuel oils) that on burning generated lubricants. Thus the more fuel burned, as in the larger motors, the more lubricant was generated.

The development of this fuel, to be sold under the name "Dynax," resulted in the issuance of a patent (U. S. Patent 2,010,005 applied for April 6, 1932 and issued August 6, 1935). While static tests were made during its development, what was needed was the active cooperation of the manufacturers of outboard racing motors as well as the assistance and acceptance by the racing fraternity in testing and using the fuel.

The fuel contained about 70 per cent methanol, a small amount of benzol to increase flammability of the lean mixture, and a blend of castor oil for crankcase lubrication and the higher alcohols to generate the lubrication on burning.

The earliest tests at Evinrude Motors in Milwaukee were conducted by the Engineering Department, which at that time (1931-32) occupied one large room and was under the guidance and direction of Mr. Finn T. Irgens and Mr. L. D. (Denny) Watkins. The tank tests were made in an open tank, and testing often had to be discontinued to answer the phone.

The tests at Johnson Motors in Waukegan were made under somewhat similar conditions under the direction of their Chief Engineer, Mr. R. Karanzinsky, more familiarly known as "Kary." When the merger with Evinrude took place to form Outboard Marine Corporation, Mr. Clay Conover headed this department.

In the course of testing Dynax at Evinrude and Johnson, it was found that the fuel systems of the racing motors had to be adjusted to adapt the engines to the new fuel. Both firms issued reports on the necessary changes and on their test results. Copies of these reports have been located and are shown below.

The cost of using Dynax was considerably higher than that of gasoline. The needle valves had to be opened two full turns, while with gasoline one and one-quarter turns were sufficient. Also, fuel lines had to be made larger due to the slower flow rate of Dynax. Because the fuel was heavier than gasoline, carburetor floats had to be weighted to maintain adequate flow.

In the course of the tests at Evinrude, the question arose: if methanol, or synthetic wood alcohol, produces such good results, what would ethanol, or grain alcohol, do? This was a good question, and in order to find out, a petition was made to the Alcohol Control Division of the U. S. Treasury Department (prohibition was still in force) to allocate five gallons of pure, undenatured alcohol for these tests. This was approved and supplied. No improvements in motor performance over methanol could be found in the limited (very) number of tests made, but great interest developed in the utilization of the "remainder" of the sample, for further applications. Fresh cherries soaked in the sample were superb.

In the early '30's Evinrude and Johnson were in active competition, and each had a professional racing team making the circuits of regattas. Evinrude's team was headed by Tommy Estlick, and Johnson's by Bill Fry, both very colorful and skilled drivers. Their help was obtained in performance testing of Dynax, and much of the testing was done in the Florida "citrus circuit" regattas, participated in by such great professional racers as Dick Pope (of Cypress Garden fame), Earl Gresh, and many others. Active in organizing races at which Dynax was being introduced was James W. Mulroy. Jim was executive secretary of the Outboard Motor Racing Association, and prior to that had been a well known Chicago newspaper reporter and winner of a Pulitzer prize for his unravelling of the Leopold-Loeb case and for his coverage of gangland

activities which eventuated in the gang slaying of one of his news partners (Lingell). Later Jim became secretary to Adlai Stevenson, the Governor of Illinois. Also active in these early days of outboard racing were Mr. Hugo Biersach, Advertising Manager of Evinrude; Mr. Charles Strang, now President of Outboard Marine Corporation; and countless others.

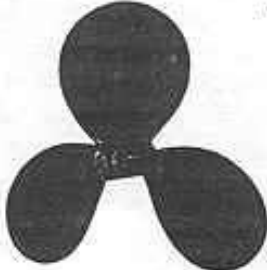
One episode recalled was a regatta under the auspices of the *Chicago Tribune* to be held in the lake front lagoon between what is now McCormick Place and Meigs Airfield. In preparation for the preliminary time trials, arrangements were made with the telephone company for laying a telephone line a mile along the lake front. Soon after the line was in place, a young tough-looking individual asked if the line were "protected." When asked "protected against what," he replied, "against being cut during the night by me." The Chicago police were informed, and they stated that this was out of their jurisdiction, as this was Park property. The Park District police were of no help, as this new section of the lakefront was not yet part of the Chicago Park System. The telephone company denied any responsibility after laying the line. In the midst of this quandary a racing driver, overhearing the problem, offered to take care of the matter. He immediately approached the man threatening to cut the line, and after telling him who he was, ordered him to get out fast, which he did. The driver's name was Jim Lino, reputed to be a Chicago gang associate then known as "The Artichoke King." Incidentally, he was one of the losers in the race event of that day, which was held as a result of his intercession.

Dynax materially increased boat speeds and acceleration, and quickly came into demand because participants had to use it in order to remain competitive. Dynax also became quite widely used in the mid-30's in the then-popular midget car racing events, as many of the cars were powered by two-cycle engines.

Eventually, with chemical shortages and allocations developing with the advent of World War II, Dynax had to be phased out in 1940. During this transition, a new outboard lubricant named "Dynol" was introduced by du Pont. This was the blend of castor oil and the higher alcohols used in Dynax. Its performance was considered good, and it allowed a single low ratio oil/fuel mix to be used effectively with most sizes of motors. However, there was none of the spectacular performance and recognition that had followed the introduction of Dynax. Dynol, too, was discontinued about 1940.

PROPELLERS

That Fit Your Boat and Motor



**Designing and
Repitching
Our Specialty**

ALL WORK IS GUARANTEED

**"No Ship Too Large, No Boat Too Small;
We Build Propellers to Fit Them All."**

Nor. Calif. Distributors, Akerite Marine Rubber Bearings

PITCHOMETER PROPELLER CO.

1900 Park Street

Alameda, Calif.

Pacific Motor Boat, December 1945

The use of DYNAX in Elto and Evinrude Motors

Prepared by Outboard Motors Corporation

The Engineering Department has now completed further boat and dynamometer tests on the du Pont fuel "DYNAX," with the following results:

	F Motor	C Motor
R.P.M. increase.....	125	150
Approximate increase in boat speed.....	3%	3%
Approximate increase in boat speed at 50 M.P.H.....	1½ M.P.H.	1½ M.P.H.
Brake H.P. increase.....	7%	7%

All comparisons in the above table are with common gasoline mixtures.

On account of the increased R.P.M. and the development of greater power DYNAX is naturally consumed in about two-thirds the time required for an equal volume of gasoline.

All of the above is based on our tests with 1932 racing motors, although approximately the same gains should be obtained with 1931 motors that are in good condition and can be revamped according to the following instructions in order to use DYNAX.

1932—4-60 Motors

DYNAX fuel can be used in all motors equipped with Linkert carburetors which have a 14 stamped on float seat. Those which have a 20 stamped on them will have to be drilled out with a No. 14 drill.

If any further restriction develops, strainer screen will have to be removed or replaced with coarser mesh, and gasoline shut-off cock drilled out with a $\frac{3}{32}$ " drill.

The approximate high speed needle valve setting for DYNAX fuel is twice the opening for gasoline. The low speed needle valve will also have to be opened up approximately one extra turn. Use Champion R-11 spark plugs for DYNAX fuel; R-1 spark plugs for gasoline.

[10]

All 1930 and 1931—4-60 motors using either Tillotson or Schebler carburetors will have to replace gasoline lines and carburetors before being able to use DYNAX fuel.

1931—1932—Racing C Motors

Motors prior to Serial No. 6310140 gasoline strainer screen must be removed from strainer body or replaced with coarser mesh. Strainer body shut-off valve must be removed and hole tapped and plugged with $\frac{1}{8}$ " pipe plug. Bronze plug in top of strainer body must be removed so there are two outlet holes in place of one. All gasoline line fittings must be for $\frac{3}{8}$ " copper tubing, using $\frac{1}{4}$ " pipe tap fittings. Replace 1931 float valve seats with the 1932 type having a No. 4 drilled hole. The 1932 float valve seats should be redrilled with a No. 4 drill. Drill out high speed needle valve metering hole with a No. 20 drill. Drill out high speed nozzle with a No. 20 drill.

It is desirable to place a shut-off cock in fuel line. Where strainer has been removed from gasoline line, it is necessary to strain all fuel before filling tank. The approximate high speed needle valve setting for DYNAX fuel is twice the opening for gasoline. The low speed needle valve setting will also have to be opened approximately one extra turn.

Motors after Serial No. 6310140 are equipped to run on DYNAX without any change.

Use Champion R-11-S spark plugs for DYNAX fuel; R-1 spark plugs for gasoline.

From the above it appears that DYNAX represents an opportunity for definite speed increases. Drivers should bear in mind, however, that other things besides fuel enter into the speed of a racing outfit and that no fuel can be considered a cure-all for other things that tend to slow up the progress of a motor and boat. For outfits that are properly tuned, there is no question that DYNAX affords the drivers an opportunity to attain faster speeds than with common gasoline mixtures.

[11]

The Koban Twin 1914-1926

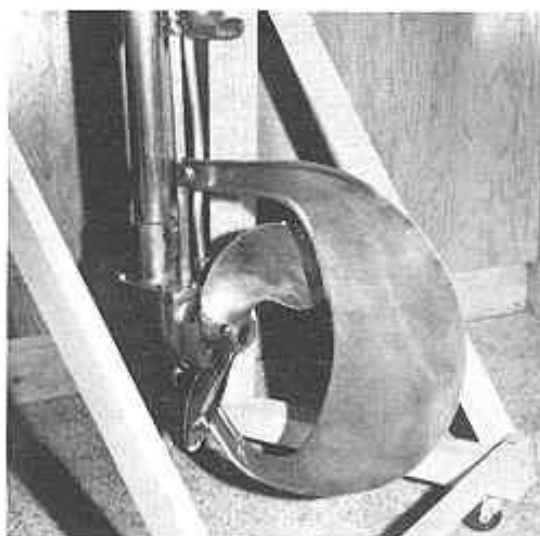
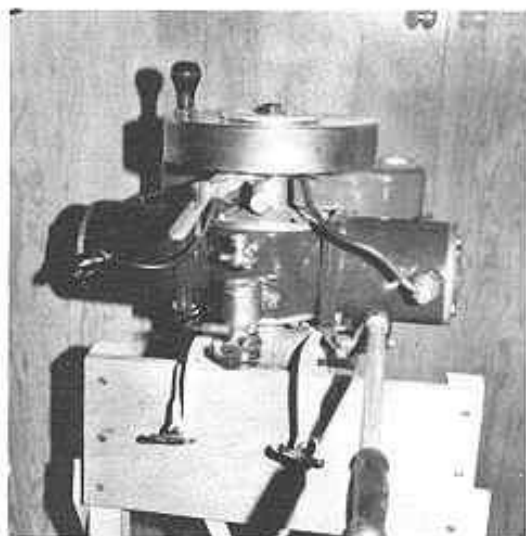
by J. L. Smith

Modern outboard engineers take pride in pointing out the great pains taken to lighten their motors and obtain the most favorable ratio of weight to horsepower. This indeed may well be so, especially with the metals and alloys and engineering know-how available today.

Quite the opposite appears to be the case with the Koban, for no effort has been spared to make it heavier. In many areas solid iron is used, and in others, various grades of bronze and brass in generous amounts. In fact, by 1920 the iron content of the cylinders had been beefed up from the original, and this model weighed in at 85 pounds, although developing only 3 h.p. at 900 r.p.m. Inside those cylinders are solid iron pistons, each piston having two rings about half an inch wide. Extra-sized wrist pins are fitted and the large bronze offset connecting rods are secured to a crank of massive proportions. This is contained within the hefty iron one-piece crankcase. Circular aluminum alloy caps are bolted to the top and bottom of the crankcase and have bronze main bearings pressed into them. The top bearing has the traditional grease cup with an adjustable screw top to maintain pressure of the grease, and in the operating manual owners are admonished to give one half turn to the cap at each outing. These bearing caps have a good diameter to facilitate removal of the crank during disassembly. For those interested in figures, a pair of pistons with their rings, wrist pins, and rods weighed up at nearly four and one-half pounds, the walls of the pistons being five millimeters thick. Each cylinder is bored two and five-eighths inches, and the stroke is two and three-eighths inches. The sheet iron gas tank has a particular form characteristic of the Kobans, having a half oval top and a funnel-shaped base. A heavy bronze filler cap is fitted.

Steering by means of the large bronze rudder is strictly mechanical, the tiller being hooked up to the rudder through a series of linkages and pivot points. Everything below the powerhead and iron mounting bracket is either brass or bronze, right down to the hefty two-blade ten-inch bronze propeller. This motor features a unique adjustment capability for the depth of the propeller in the water. By loosening the nut on the lower end of the bearing plate, the brass drive shaft housing, or shaft sleeve tube as it is called in the instruction book, can be extended a maximum of five inches. This is made possible because of a telescoping arrangement for vertical rudder post, water inlet tube and drive shaft. In addition to this feature, suitable tilt to compensate for transom rake is possible by loosening two large bracket nuts. Serrations are provided for very positive engagement when nuts are retightened.

In its advertising Koban described itself as the world's greatest rowboat motor, without equal, and mentioned prominently that, being built on different lines with opposed two-cylinder construction, it did not shake the boat. It was in fact not the first opposed twin, for Archimedes of Sweden had this as early as 1912. Koch and Bannon devised their motor in the fall of 1913 and set up their shops at 241 South Water Street, Milwaukee, Wisconsin so that the product could be marketed for the 1914 season. The name Koban was coined by a clever abbreviation of both their names. About the same time both Federal and Arrow presented two-cylinder motors, but it is generally thought that Koban released the first practical domestic-made opposed twin in any quantity.



In his excellent and informative article regarding Kobans in the April 1969 issue of the *Outboarder*, Richard Hawie presents pictures of several models and many facts pertaining to them. The 1914 model shown had finned detachable cylinder heads, above water exhaust and battery ignition. The ad mentions weedless rudder and propeller and further describes the motor as having double the power with 50 per cent more speed. None of the 1914 models are known to exist, at least among those registered with the Club. There are substantial changes in the 1915 model shown in the same article. It has a magneto, a rim-type flywheel with no starting knob, muffler with underwater exhaust pipe, cylinders integral with crankcase and smooth cylinder heads with the name Koban cast in. The float feed carb was mounted on the front of the right-hand cylinder facing the motor. Fuel passed to the crankcase by means of a passage cast into the cylinder wall. Evidently from the 1915 models on, underwater exhaust was an option, as our members in a recent survey reported a variety of installations, some above and others below water exhaust. Dick Hawie's 1917 catalog describes it as an option available for an additional \$5.00. The 1915 models could be bought either with battery ignition or magneto, but it is not clear if there was a difference in price. Six motors of this time are registered with the Club, the oldest belonging to Mr. A. Violet, and they all have battery ignition. By 1917 the Model D had a bronze check valve type carb of Koban manufacture located centrally on the front of the crank case. Some of the earlier C models with the offset carb were still available.

A further change was made to the Model D in 1918 when the rim-type flywheel gave way to a brass sheathed conventional appearing type but with the installation of a man-sized cranking handle. This flywheel weighed 14 pounds. Underneath the flywheel, the mag plate was not completely round, but was made in a V-shaped segment. Although described as an aeroplane-type breaker, the whole set-up appears very ordinary with the usual coil, condenser and spring-equipped points operating from an eccentric on the flywheel hub. The carb has a needle valve, and in addition its entire base can be rotated on threads by grasping its knurled edges. This regulates the speed, together with the timer lever, which is set centrally for high speed. For reverse, the operator presses the button on the timer lever, moves the lever about ten degrees to the right, and releases the button again. Evidently grounding the condenser and making the spark come early did the trick. The mag lever would again be centralized and everything done quickly to prevent the motor from stopping. Perusing the book of instructions, it is interesting to note that only one quarter pint of heavy oil per gallon of gasoline was recommended.

Just about all of the post-1915 models registered with the Club are magneto models. The next and final change in design came in 1920 when the motors were made with detachable cylinders. As previously mentioned, the cylinders, while retaining the same bore, were made considerably heavier, about 7/16 inch being added to their diameter; and larger water passages were cast in, although no water cooling was supplied to the heads. It was probably felt that these, being of aluminum alloy, could dissipate the heat readily. It is assumed that the magneto was usual with the later models, although the underwater exhaust was optional. When it was so equipped, a manually-operated shutter in the muffler could provide an above-water exhaust outlet for starting or whenever desired by the operator. The muffler itself is a simple brass tube about three inches in diameter. At each end cast aluminum alloy manifolds connect to the cylinder exhaust ports. A brass priming cup was mounted on the crankcase just above the carb.

A description of the Koban would not be complete without mention of the unusual cooling system. There are two bronze gears in the aft section of the lower unit, the upper being keyed directly on the prop shaft, the lower operating off the upper. Portions of the upper gear are exposed to the open water so that when the motor is running water is "folded in" and squeezed into a compartment either to the left or the right of the unit, depending on whether the motor is going forward or backward. A ball bearing covers the orifice over each compartment, allowing passage of water only one way, again depending on which way the gears are rotating. When one bearing is up, the other will be down, acting as a check valve. The whole system is dependent on relative water pressure, but has dangers, in that the ball bearing may become stuck with corrosion or foreign material may become caught in the gears. Water thus pumped is conducted up by a pipe to the cylinders and exits from the top of each cylinder through a short curved pipe.

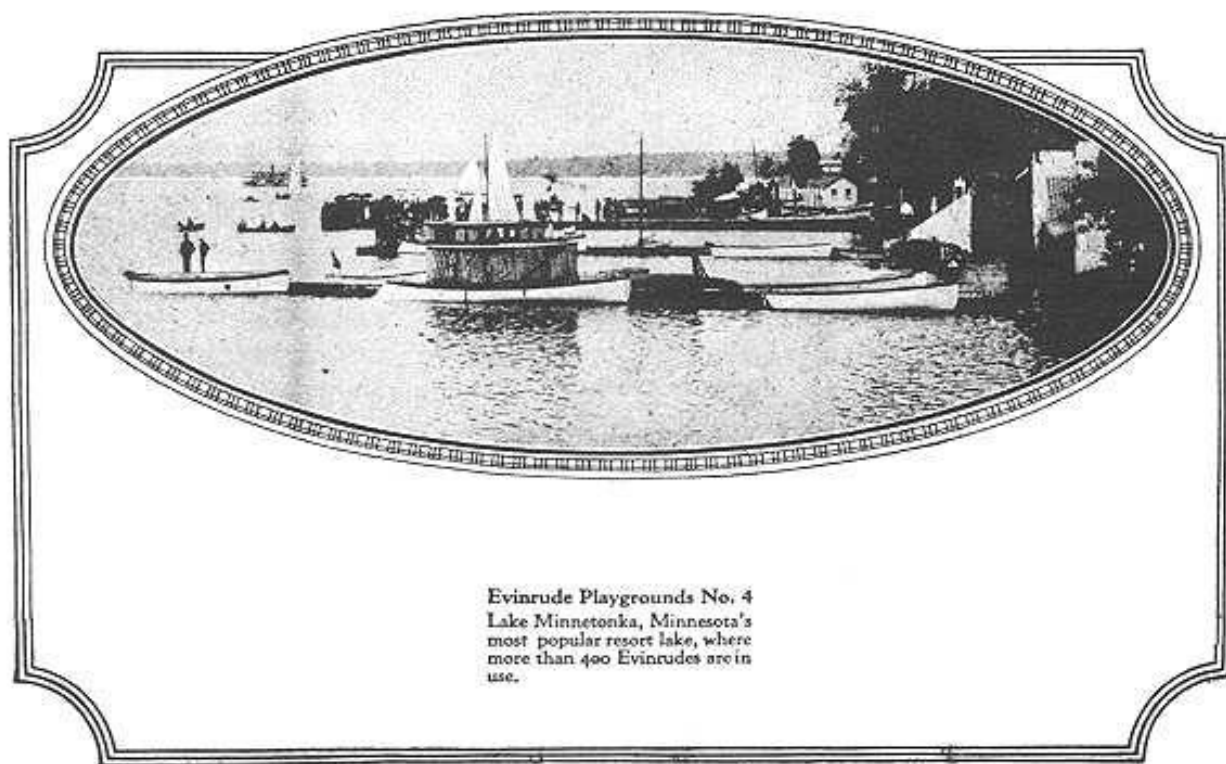


Owners of Kobans registered with the Club were surveyed for information regarding their motors, and responded with great cooperation. There are at least 21 known Kobans in existence and possibly more. From the serial numbers supplied it might appear that Koban used the first

number or two to denote the year and the following numbers for the production of that year. For example, Violet's motor bears serial number 5,543. The first figure denotes 1915, his being the 543rd motor produced that year. The remaining five motors of this period are as follows: 5,570 (Brooke); 5,667 (Brautigam); 5,926 (Strot); 5,949 (Seibel); and finally 5,998 (Weidman), this being the last of that year registered in our Club. Hawie's motor 6,353 would be a 1916 and so on down the list until Seibel's 22,035 would be the 35th motor produced in 1922. The motor pictured with this article, bearing serial number 20,423, would be the 423rd motor produced in 1920. [This interpretation is strictly personal, and any comment from members would be welcome.]

We have no later models than this registered; and while there must have been Kobans produced and sold during the three-year period subsequent to 1922, Koban must have been feeling the competitive pinch from Evinrude, Johnson, and Elto, who were by this time marketing much lighter and speedier machines. The Koban Outboard Company was purchased by Walter O. Hoth and a partner, Otto Schellin, sometime shortly after World War I. These gentlemen are now deceased. The concern was bought out in 1926 by Evinrude. There is no reason to believe that Koban production continued from that time, but the new owners probably supplied service and parts as long as they were available.

The principle of opposed two-cylinder construction for outboard motors is outmoded today, but there is no doubt that Koban put forth an idea that was destined to last for 35 years and made a very real contribution in the search for smoother and dependable machines.



Popular Mechanics, June, 1921.

HOW'S THIS FOR A HARD WAY TO SOLVE AN EASY PROBLEM?

W. J. Webb

The problem: to transmit and convert power generated by an internal-combustion engine to outboard propeller thrust.

Now, the unknown engineer who designed the American Outboard in 1895-96, as well as Edward S. Savage, James Stout, and, a bit later, Cameron B. Waterman, solved the problem with an elemental design still used almost universally in the manufacture of outboard motors, namely, a vertical drive shaft extending from an engine to a more or less horizontal propeller shaft through bevel gears.

But last summer Charley Strang, now President of Outboard Marine Corporation, ran across a most unusual outboard motor while visiting the Volvo plant. Charley took some fine pictures of the motor and described it thus:

"Enclosed herewith are the photos of the strange engine which I saw last summer while visiting the Volvo-Crescent outboard plant in Upsala, Sweden. Thought these might be of interest to the AOMC readership.

"The Volvo people were uncertain as to the age or origin of the engine, although they thought it might have originated in Germany many years ago.

"As you can see from the pictures, it is a single-cylinder affair with the cylinder axis being vertical and a crosshead arrangement beneath the cylinder to function as a scavenging pump. The connecting rod then extends below the water where it joins a crankpin on the forward end of the propeller shaft. There is a water lubricated wooden bearing at this point.

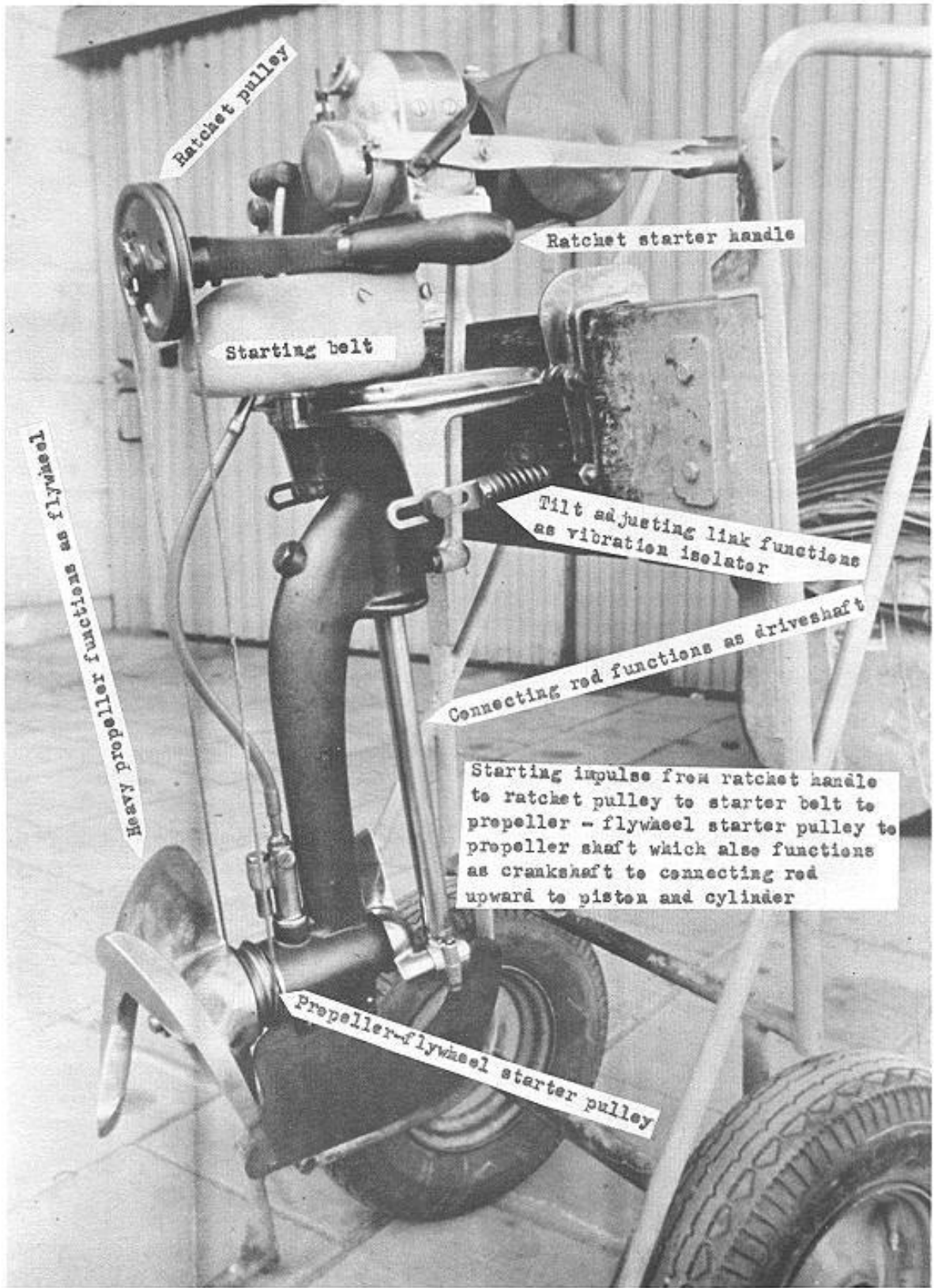
"The propeller also functions as the flywheel and is, therefore, a massive bronze affair of very thick blade section.

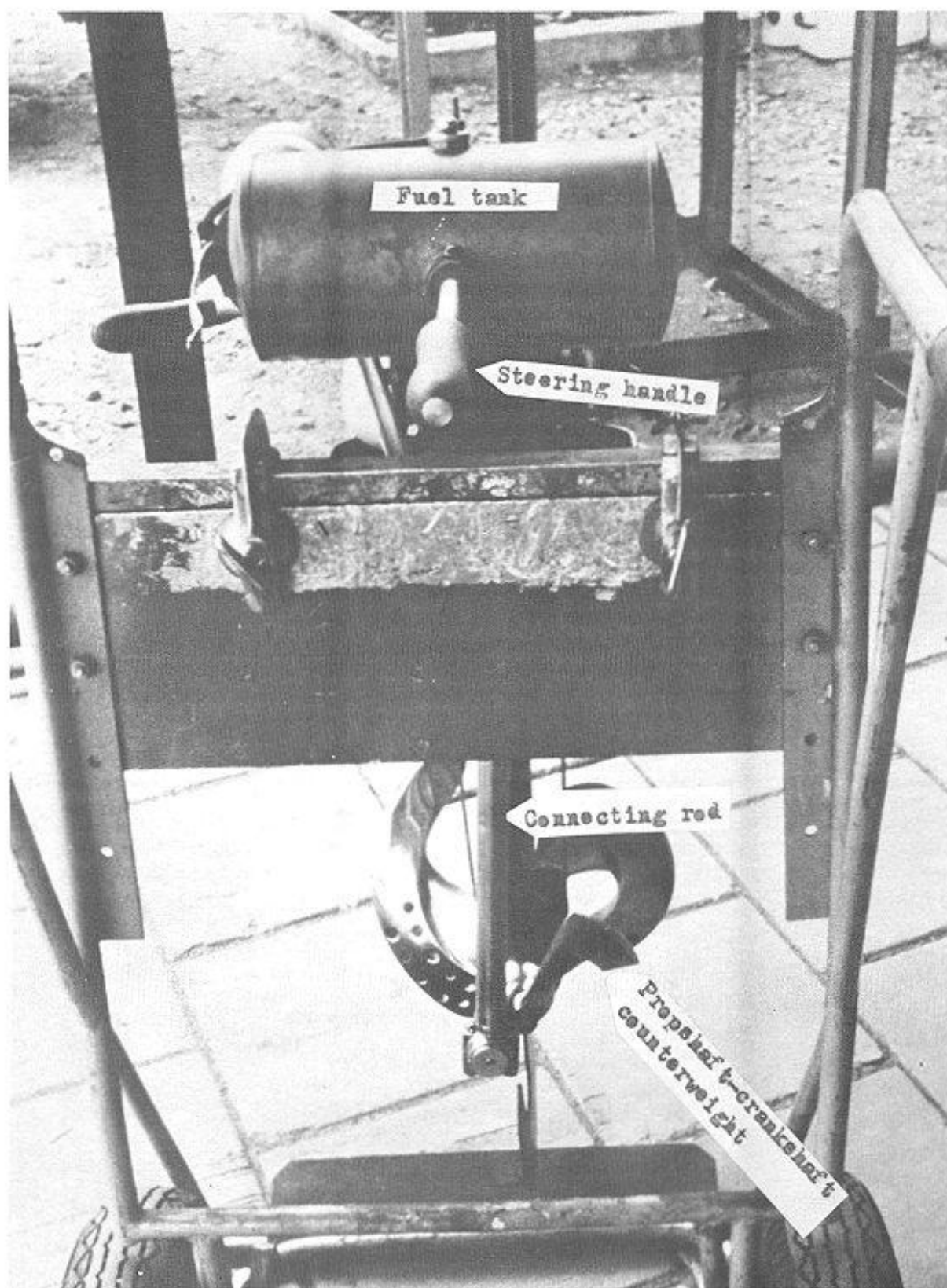
"There is also a counterweight on the front end of the prop shaft to partially balance the rotating weight of the crankpin and part of the connecting rod. The counterweight is shaped like a single propeller blade and presumably helps to add a little thrust!

"Starting is accomplished by reaching to the back of the engine and swinging a wooden handled lever from side to side. A ratchet device rotates a pulley adjacent to the handle. That upper pulley is connected to a pulley just in front of the propeller via a cable. Thus, swinging the handle causes the propeller to rotate and the engine to start. It does, and runs rather well at 600 r.p.m.

"Ignition is provided by an integral magneto mounted next to the cylinder. The weird feature here is that the magneto is turned by a link rod which, at its lower end, is fastened to a pivot on the main connecting rod. The upper end of the link rod is attached to a crankpin on the magneto driveshaft. Thus, as the connecting rod flops up and down, the link rod also flops up and down and causes the magneto to rotate to provide spark.

"The engine is cooled by a piston type pump operated by a cam on the propeller shaft.





"Most interesting is the engine mounting arrangement. As you can see, there are a pair of clamp brackets which fasten the engine to the transom in the conventional manner. A yoke which is equivalent to the modern swivel bracket is pivoted for tilting at a point a couple of inches below the top of the transom. Another link is pivoted to the bottom end of the clamp brackets and is fastened to the yoke via a slot and cap screw. The tilt angle of the engine can be adjusted by loosening the cap screw and letting it slide back and forth in the slot to the desired position. Most interesting is the fact that this lower link has a spring element in it. Thus, when the reciprocating forces in the engine cause it to jiggle up and down, the engine attempts to tilt around the upper pivot but is elastically restrained by the lower spring link . . . thus constituting a very early form of vibration isolation.

"The engine is certainly interesting from the standpoint of the multiple functions performed by the various parts:

"The connecting rod functions as the driveshaft.

"The propshaft functions as the crankshaft.

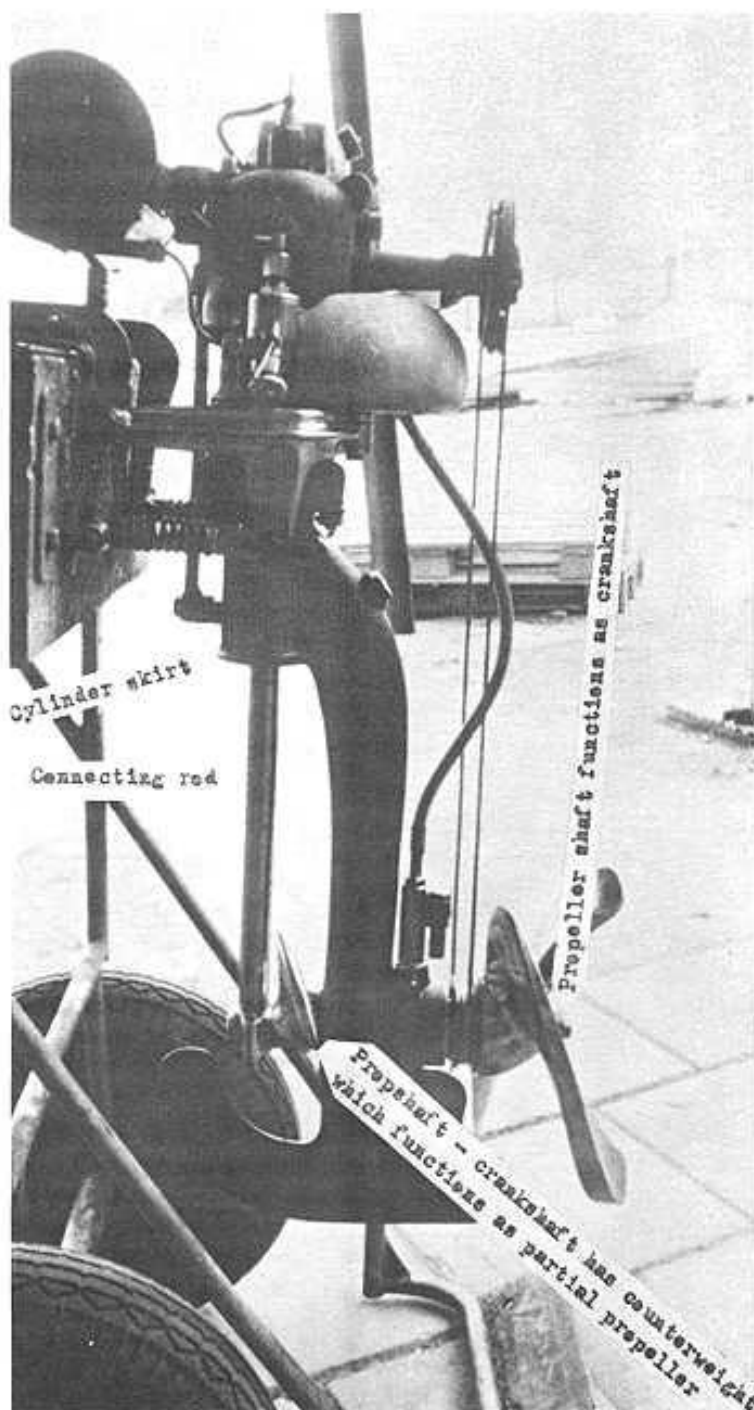
"The propeller functions as the flywheel.

"The crankshaft counterweight functions as a partial propeller.

"The tilt adjusting link functions as a vibration isolator.

"In some ways, the engine could be said to be a forerunner of the Clark Troller, . . . except that it has been stretched out vertically to permit the cylinder, ignition system, and carburetor to be well above the water line!"

I can't help wondering if the fellow who designed and built this motor wasn't just having fun—or maybe just using up some spare pieces of this and that which he happened to have around. And the service problems in salt water, for example. If anyone ever attempted to put a motor like that in production, the costs would be astronomical, the weight excessive. Yes, it really looks like a hard way to solve an easy problem. If nothing else, it shows that there is more than one way of skinning a cat.



CANOES, ROW BOATS, MOTOR BOATS, AND DETACHABLE MOTORS

Ages ago, man recognized his physical inability to transport himself from one point to another in the shortest possible time without the employment of some means of travel other than that with which he was naturally endowed. Just how long he traveled hither and thither by walking only, we do not know; neither do we know who first conceived the idea of going from place to place in some sort of conveyance, but nevertheless such a mode of travel had to be first that of by some one and put into actual use before it became a recognized means of transportation.

Whoever it was,—Peace to his ashes! For it represents one of the first desires for something better, for it is the nurturing of such throout the lapse of years that has kindled the mind of the genius and given to the world the myriads of great inventions which are the bedrock of our great enterprises and civilization.

Perhaps some hirsute creature of the great Stone age, in the misty long ago, was sitting by some murky stream fashioning from stone some of the implements which have given name to that particular era, saw a log floating down stream which gave the first idea of water transportation. Perhaps this person communicated the idea to others who were brave enough to mount a floating log and learn it would carry them. Then they probably lashed logs together (made a raft) and later conceived the idea of hollowing out a log and making what we call a dugout.

The Canoe.

The canoe, which is strictly speaking a light craft designed to be propelled with a paddle held in the hands without any fixed support, is more or less familiar to every one. This type of boat has played an important part in settling up our land, since it was extensively used by scouts, settlers, Indian fighters, and the Indians themselves in the early days. In fact the canoe is the only surviving implement of the aboriginal inhabitants of America.

Being light, yet strongly made they are still in great demand at the present time among hunters, campers, trappers, explorers, fishermen and outdoor people in general, who for different reasons desire a light craft and find it necessary to portage their outfit quite frequently, as they may be easily carried from stream to stream, and lake to lake.

The Indian canoe is made from birch bark and so far as I know is procurable only from them. Those made by the several excellent manufacturing concerns are either of all wood or canvas. Canvas canoes are, however, usually made of wood the planking

being quite thin and covered over with a high grade of canvas.

No matter how many boats one may own, a canoe is always a welcomed addition, as canoeing is one of the finest of all outdoor sports, and happily one in which all may partake.

The W. H. Mullins Co., The Old Town Canoe Co., Kennebec Canoe Co., E. M. White & Co., Montgomery Ward & Co., and the B. N. Norris Inc, put out an excellent line of canoes that are sure to give fine satisfaction.



MOTOR CANOE EQUIPPED WITH A GAILLE,
OWNED BY HENRY PETTY. SPEED, 10
MILES AN HOUR.

Row Boats.

Under this heading may be included all small boats, not canoes, which are propelled with oars. This will include all wood boats, steel boats, long boats, short boats, and canvas boats of both the folding and solid frame construction.

Every stream and pond affords a place for boating, and it is indeed pleasant to learn that so many are recognizing this fact and awakening to the possibilities for enjoyment that lies at their very door. We haven't a word to say against the fellow who can afford to hike to distant parts to enjoy an outing, for we are a firm believer in this sort of business, but a boat placed on a stream near home will seemingly bring a new country to you; for viewing the banks and

familiar scenes from mid-stream gives them a far different and more charming appearance.

The row boat is easily handled and is adapted to a multitude of different uses. For fishing they give splendid results as they are not easily upset and allow one to enjoy angling to the fullest extent. If fishing from the bank is good, using waders or hip boots is better, and boat fishing best of all. Also, the row boat is used by many hunters and trappers in settled districts, summer resorts, and other places as well, with entire satisfaction and annually brings to thousands both pleasure and profit.

The W. H. Mullins Co., The Brooks Mfg. Co., F. H. Darrow Steel Boat Co., King Folding Canvas Boat Co., and Dan Kidney



MULLINS STEEL ROW BOATS.

& Son market a very fine line of row boats of various styles and sizes that are certain to please the most exacting purchaser.

Motor Boats.

As compared to the boats already mentioned the motor boat is of comparatively recent invention, or, perhaps we should say that the motive power—the Motor—is a thing of recent development and represents the latest in the construction of the internal combustion motor for marine purposes.

Outers and outdoor people in general have long since learned that rowing a boat under certain conditions absorbs quite a bit of energy—say rowing a heavily loaded boat up stream, or returning at the end of a hard day's fishing, trapping, or hunting trip—and that often the fatigue experienced, especially by those who only get an occasional chance at the oars and who are not of very strong physique, often detracts from the real pleasure of the trip.

But with the motor boat how different! You get in, start the motor, and Chug! Chug! Away you go with nothing to do but steer the boat, drink in the ozonic air and

enjoy to the fullest extent the grandeur of the scenery. In fact to those who are not charmed with the exhilarating effect of rowing, motor boating means "boating with the bother left out."

When in school some two or three years ago in Chicago, I spent much of my spare time at the lake and there had the pleasure of seeing boats of every description which of course included motor boats of all kinds and sizes.

After going on a small steamer, which nearly capsized owing to the "rough sea" as the pilot put it, from the Randolph docks to that grand place called Lincoln Park, our party was astonished to see a small motor craft making its way over the boisterous rolling surface of Lake Michigan. A number of us stood with open mouths expecting any moment to see it capsize, for it would rise with a swell, stand still for an instant, then dip and be seemingly lost; but to our surprise and delight it forged ahead, rose and fell with the waves, and reached the shore safely. I mention this merely to show how a small motor can send a boat thru rough perilous waters.

The W. H. Mullins Co., The Brooks Mfg. Co., and the Gray Motor Co., make a superior line of motor boats in all sizes that are sure to give charming results from the very start.

The Detachable Row Boat Motor.

Time was when it seemed that inventions benefited mostly those living in the cities and towns; then those living in settled rural districts; and lastly those living close to nature—hunters, campers, guides, fishermen and trappers. Happily it now seems that inventors are bending every effort to produce things for the outdoor man.

The "First Aid" medicine kits, the compact aluminum cooking outfits, the light weight tent, modern firearms, improved footgear and clothing, the modern casting rod, reel, and fish-catching plugs, camp axes and knives, and myriads of other things have done much to increase the pleasure of outdoor sports and added to the comfort of those living beyond the confines of thickly settled districts; but probably no other invention of recent years has had such far reaching results and met with such demand as the Detachable Row Boat Motor, for by its use any row boat or canoe may be converted into a motor boat.

The guide who has to make several trips across the lake to get his visitors to his camp no longer dreads the ordeal as he can quickly attach a motor to his boat and go skimming back and forth with nothing more troublesome to do than steer the craft. If he has one or more portages to make he can unhook the "detachable" and easily carry the outfit to the next lake or stream. If he has more than one boat, he can tie one behind the other and the little motor will jog along nicely with the entire outfit.

The fisherman need no longer think of the long row to and from the place where the "big ones" are lurking, for he can carry his tackle box, rods and "detachable" to the boat, fasten on the motor and be off to the fishing territory knowing full well he will not be tired when the grounds are reached and also there will be no tiresome trip homeward.

Then too, the motor has another value aside from driving the boat or canoe. It may be removed from the boat, carried to camp and by using a little head-work rigged up to run a washing machine, grindstone, wood saw, etc. Also, it may be used to run a lathe and thus enable the fellow of an ingenious turn of mind to produce many novel

articles, having a single cylinder and either battery or magneto ignition. Two cylinder 4-cycle motors are also obtainable. On the 2 H. P. motor, the bore of the cylinder is about 2 $\frac{5}{8}$ " and the length of stroke 2 $\frac{1}{2}$ ". On the 3 $\frac{1}{2}$ H. P. the cylinder bore is 3 $\frac{1}{4}$ ", length of stroke 3".

The cylinders are made of iron of special composition and thoroly enclosed by a water jacket. A constant circulation of water thru this jacket is obtained by means of a pump operated by the motor thus keeping the cylinder cool at all times. The piston, piston rings, crank shaft, connecting rod, bearings, and in fact all parts are each made from metal specially adapted to the work the part is required to do, and the prospective buyer



A PARTY OF NINE ENJOYING A TRIP ON THE LAKE PROPELLED BY A WISCONSIN DETACHABLE ROW BOAT MOTOR.

articles in his far away camp, some of which might prove to be of considerable commercial value. Some of these motors are equipped so the magneto will run electric lights, giving the camp the illumination of the city.

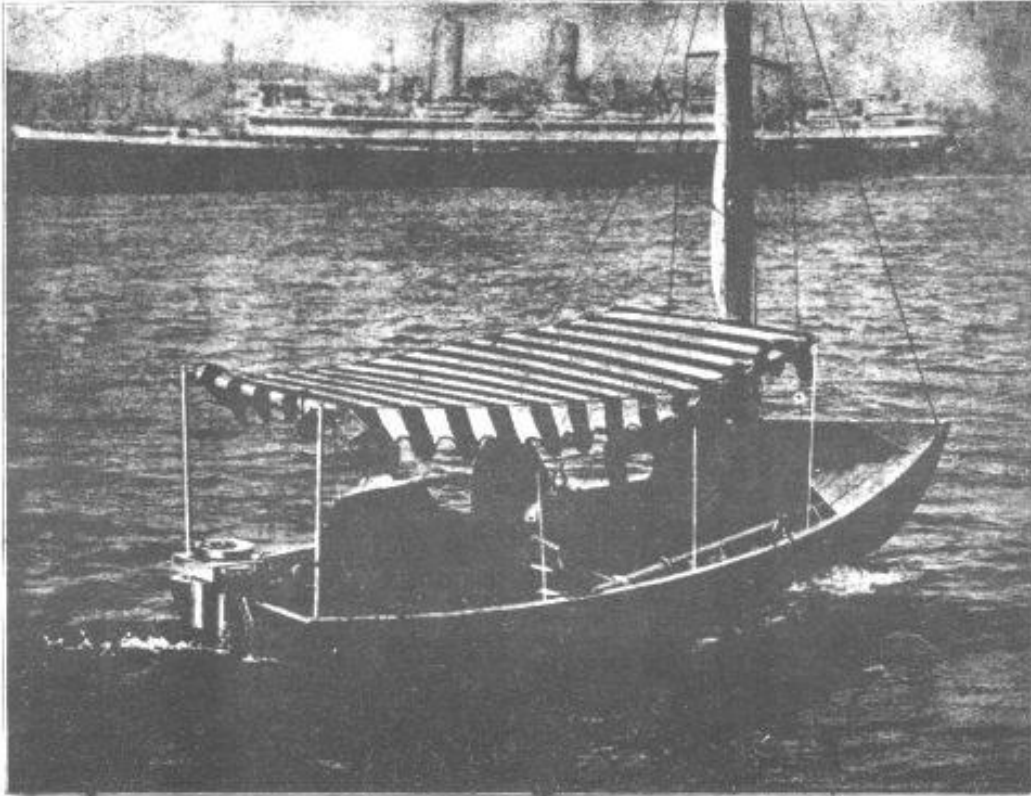
In fact it is only reasonable to suppose that in a short time the electric chafing dish, coffee percolator, and electric stove, will be operated by a current generated by the motor making it possible for the occupant of the boat to have his meal nicely cooking while the craft is under way, which should lessen the number of forest fires, while an electric cigar lighter and mosquito swatter might be welcomed by many.

What may be termed the typical detachable motor, is one operating on the 2-cycle prin-

and user may rightly infer that nothing but the very best materials enter into the construction of these motors.

The crank case is made so as to give ready access to its interior which is very convenient when necessary to adjust certain parts contained therein. The propeller is usually constructed so it will throw off any weeds it strikes and not allow them to interfere with its proper working.

A 9-inch propeller with 14-inch pitch on a 2 H. P. motor delivers its maximum power with the motor making about 800 R. P. M. (revolutions per minute). The motor is provided with a tiller which effects the steering of the boat by either actuating a rudder or the propeller. The motors are reversible



THE EVINRUDE OUTBOARD MOTOR ATTACHED TO A DORY.



GIVING THE LOCKWOOD-ASH OUTBOARD MOTOR A THOROUGH TEST.



THE 2 CYLINDER KOBAN GIVING A TOW AT LAKE CREVE COEUR NEAR ST. LOUIS, MO.

and very flexible, driving the boat equally well in either direction and at quite a number of different speeds.

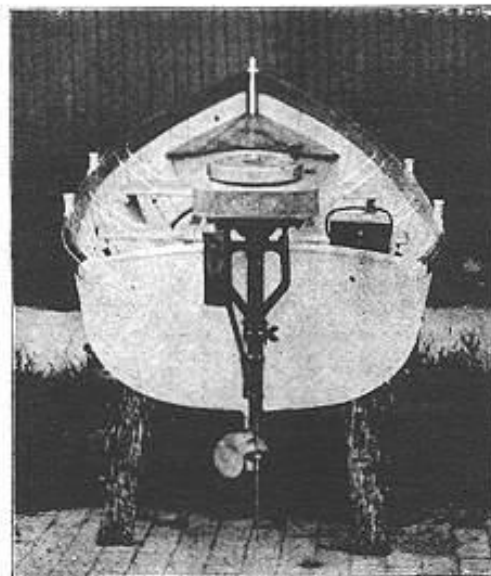
The motor attaches to the stern of the boat by means of large thumb-screws or clamps and a 2 H. P. will drive a 15 ft. row boat from 6 to 8 miles per hour; a canoe from 7 to 9 miles per hour. When the craft does not permit the ready attachment of the motor, the manufacturers will gladly furnish a special bracket to overcome the difficulty.

The gasoline tank holds enough fuel for something like a four hours' run, the oil for lubricating the cylinder, connecting rod bearings, etc., being mixed with the gasoline which insures correct lubrications.

Motors having battery ignition are slightly heavier than those employing a magneto, as the battery type of one make weighs 70 lbs.; with magneto 62 lbs. Three dry cells are usually used to furnish the ignition current, while the magneto is usually built into the flywheel, has no parts to work loose or become water soaked, and is extremely efficient and reliable in operation.

The boats and canoes put out by the companies mentioned herein may be converted into a motor boat by the use of the detachable motor, and whether used for fishing, hunting, taking the family a spin, or some dear little Ethel, Mary, or Elizabeth a delightful ride at the close of some balmy summer day when the zephyrs seem to whisper what they fain would speak, the little motor craft tells no secrets and does as it is bid.

The Caille Perfection Motor Co., The Koban Mfg. Co., The Lockwood-Ash Motor Co., The Evinrude Motor Co., The Gray Motor Co., The Aerothrust Engine Co., and the Wisconsin Machinery & Mfg. Co., put out a fine line of detachable motors that may be depended on to do the work and give an immense amount of pleasure and continued satisfaction.



STERN VIEW, MULLINS 14-FOOT OUTBOARD SPECIAL.

Submitted by Robert Grubb

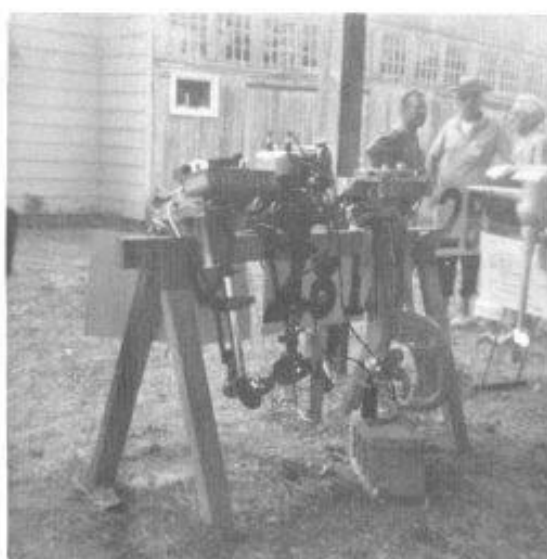
1975 Eleventh Annual Antique Boat Show

by Riggs Smith

On August 16 and 17, at Clayton, New York in the Thousand Islands, we held the Eleventh Annual Boat Show and Parade. The event was sponsored by the Thousand Islands Shipyard Museum. We had perfect weather on both days, and had large crowds. Over 100 boats were entered in the various categories. Bob Cox, a longtime member of the AOMCI, was co-chairman of the event, with Dr. Heady.



Left to right: Scott Janowski, Elto Ruddertwin, Best Restored; Phil Kranz, Amphion, Rarest; Tom Luce, Evinrude, Oldest in Show.



The three winning engines. Left, Tom Luce's 1912 Evinrude; center, Phil Kranz's 1915 Amphion; right, Scott Janowski's Elto Ruddertwin.

In the outboard classes, the winners were as follows:

BEST RESTORED OUTBOARD—Scott Janowski, Rochester, New York with his Elto Ruddertwin. Scott is 16 years old, and did a beautiful job.

OLDEST RUNNING MOTOR—H. Tom Luce, Westfield, New Jersey. Again, a beautiful restoration, as well as the oldest motor. Tom is such a craftsman.

MOST UNUSUAL RUNNING MOTOR—Phil Kranz, Slingerlands, New York. Phil was a double winner, and can really find the "unusual" items.

BEST OUTBOARD MOTOR AND BOAT IN WATER—Phil Kranz, again with his 1939 Pennyan, original.



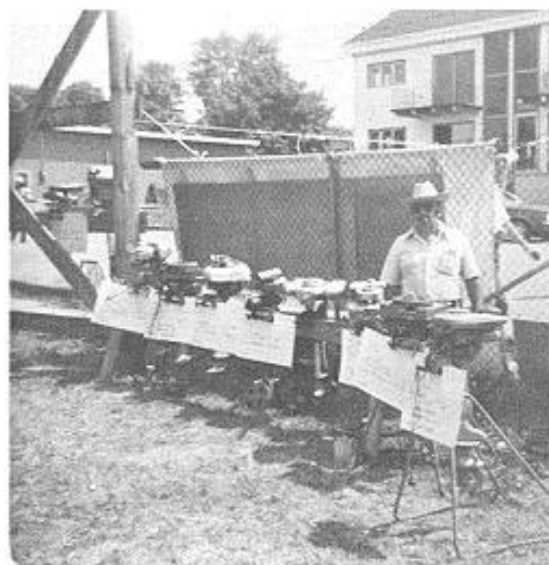
Riggs Smith's 19-foot Comet III and 1934 Phelps-Richardson. Did not win, but had a great time. Front seat, left to right: Riggs and triplets Todd, Clay, and Bard [age 4]. Back seat: Nan and son Scott, age 6.



Tom Luce seated near his Oops, a previous show winner and a beautiful job of restoration. Second boat is Phil Kranz's winning boat with 1939 Pennyan.



Riggs Smith with his 1941 Neptune [left] and 1941 Mercury.



Mert Perry from Union Hill, New York.



Several of the more than 100 boats at the show.



Riggs Smith's 1937 Thompson with 1931 Evinrude Sportfour.

Motor Registration (MR) News

by Don Peterson

Don has moved! New address: 710 South McLoughlin, Oregon City, Oregon 97222.

No correct answers to the mystery motor contest yet! Keep trying—more free registration stickers added to the prize each month.

How's this for a bigger M. R. contest—the rarest engine found by a member in 1975!

RULES

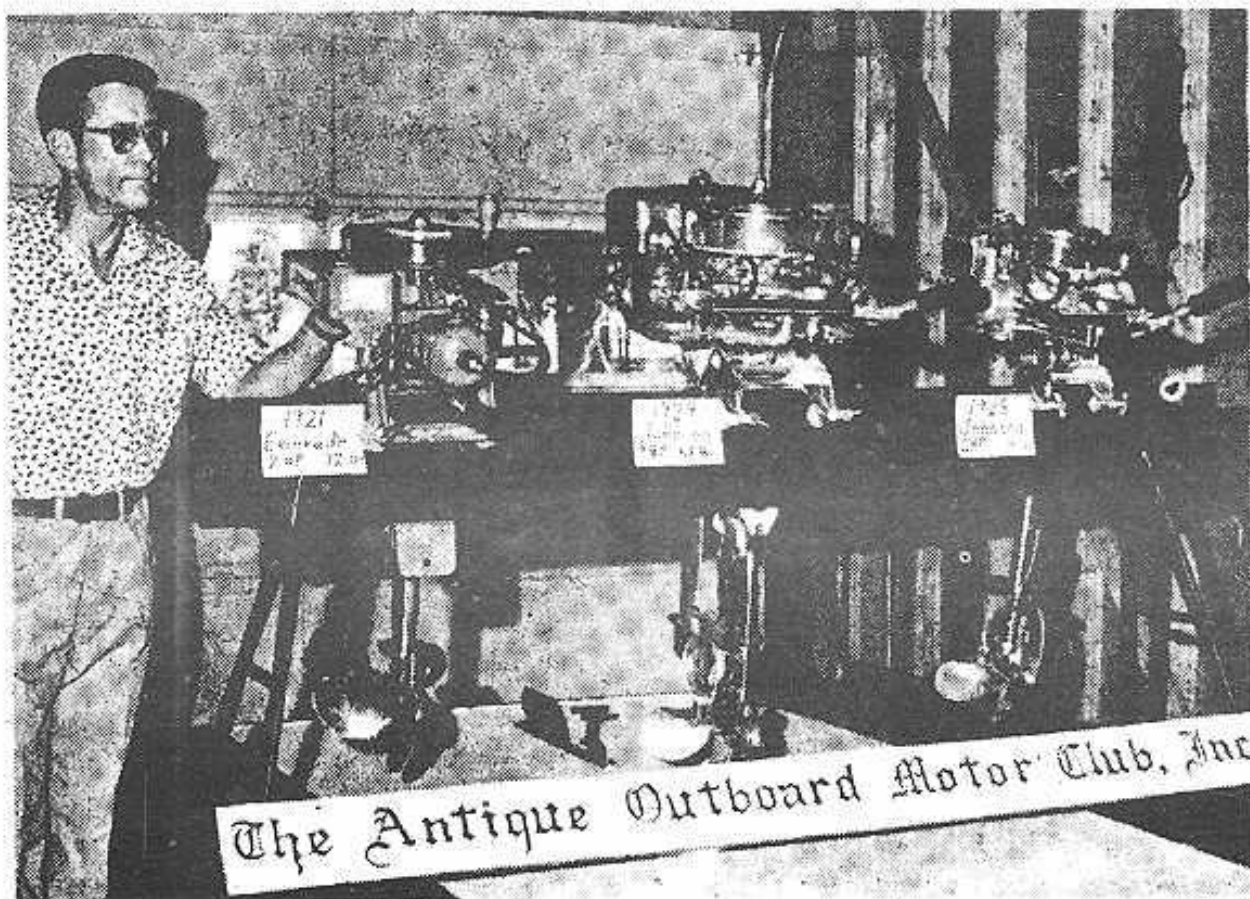
1. The engine must be registered before 1:00 a.m. January 1, 1976, with accompanying photo and verification by one other member.
2. Membership trades are not eligible unless the engine had not been identified correctly by the previous owner.
3. The winner will be chosen in accordance with the Rarity Determination Classification published in the July 1975 *Antique Outboarder*.
4. In the event of a tie or dispute, the AOMCI Executive Council will make the final decision and announce the winner.
5. The AOMCI president will award the trophy in January, 1976.

An additional thought: an article in the April 1976 *Antique Outboarder* will show all the participants and their engines. Participants are urged to submit detailed information and photographs.

Editor's Note: Don has personally sent in the money to buy the trophy! Register what you think could be the rarest motor—you could be the winner.

This article is from my hometown paper, *The Dakota County Tribune*. A woman reporter interviewed me (don't let Jan read this), so there are a few mistakes in the article. The paragraph beginning "Each member in the club" should read "I prefer the unpainted motors so they can be polished to a chrome-like shine." In the last column, "Seattle, Washington" should read "Tacoma, Washington." *Jerry Becker*

'Puttering' With Antique Outboards Is Man's Hobby



JERRY BECKER, of Farmington spends his leisure time restoring and collecting antique motors. Here he is pictured with three of his show models all ready for a show. From the left is a 1921 Evinrude, 2 H.P., 72 pounds; 1929 Johnson, 7 H.P. 63 pounds; 1925 Johnson, 2 H.P., 36 pounds. He will operate all three of the above at the club's meet in July near Aitkin.



THE EVINRUDE motor on the bench, Jerry Becker is working on, is being restored and is the oldest one he has purchased. The serial number plate is missing, thus the year of the manufacture cannot be established. A patent pending inscription on the flywheel suggests it to be a Circa 1912 model. Six other motors in his shop await restoration time and parts.

By **PHYLLIS BROSSETH**
Staff Writer

FARMINGTON -- Restoring and repairing antique outboard motors is a hobby of Jerry Becker, 40, of 608 Walnut St., Farmington.

Becker, a native of Farmington, graduated from Farmington High School and has been employed at Mid-America Dairy for 22 years as a shipping clerk.

Although he has been interested in motors for a number of years, he has only been a member of the Antique

Outboard Motor Club, Inc. for the past year.

The club was incorporated in the state of Texas as an educational institution. It is devoted to people all over the world who are interested in the search for, restoration and preservation of old time outboard motors, Becker said.

Although these motors have no antique value, "We find them interesting and challenging to restore," he said.

Worldwide membership in the club now totals about 400 members. He and one other Dakota county man are among 18 from the state of Minnesota.

Becker said some states without many lakes contain no members while other states with larger areas of water may have two or more members.

During the summer months, Becker operates the old motors at outdoor meets. In the winter the members are confined to indoor meets at which time they view other members' motors and study the history of outboard motors.

He said the first outboard device was patented in 1866. Since that time, over 160 manufacturers have entered the field.

During his years of working with motors he has tinkered with Johnson, Evinrude and Mercury which continue today; however, the Caille, Elto, Lockwood, Waterman, Walnut, Gray and Ferro are forgotten by many, except those in the Antique Motor Club, he said.

Each member in the club has his own interests. Becker prefers the un-painted motors so the chrome can be polished and shined like a mirror.

Many in the club, he said, search for racing motors. However, they all share one thing in common, the never-ending search for some type of antique motor. If a motor can't be restored it can at least be used for parts, he adds.

The old outboards had many features and starting characteristics not found in the modern outboard motors of today. The use of such metals as brass, bronze and aluminum capable of being brought to a chrome-like shine were widely used in their construction. The powerheads on most of the motors were unshrouded and presented a few hazards to the operator. Burned fingers from touching the top water muffler and a swollen hand after being hit with a revolving wood starting handle on the flywheel are only a few of the many hazards which existed.

Becker stated from his own experience that many an early outboarder got his "hair curled" when he accidentally touched the completely exposed spark plugs. One of my motors produces a vibration and shake, although characteristic of its era, that would eventually loosen the rivets on a modern aluminum boat."

Becker, a one-time mechanic, spends approximately 300 hours restoring each motor to like-new condition. Replacement parts for these motors are no longer available from the manufacturers. Although this creates many problems, the continuous process of buying and swapping parts among the club members, alleviates the

situation. This is accomplished through a club newsletter. Each transaction may require weeks or months to complete by mail.

Becker said he has purchased, exchanged or sold parts to fellow members as close as Bloomington and as far away as Florida and Connecticut.

"At times I try to predict a future for my somewhat unusual hobby, but I have yet to come up with an answer. Seattle, Washington has its own marine museum, but one in this area seems very unlikely at this time. When and if the time comes, maybe 608 Walnut in Farmington would be a good place to start," he says.

Becker is a true enthusiast besides being a perfectionist in his field. For only being a member in the club for one year, many of the members have been astonished to the degree he has restored his motors.

He has his shop, located in his garage, equipped with every tool one could imagine including a television set. In the winter he moves in to the basement and continues his work so he is ready for spring and the show.

Becker and his wife, Sharon, have one boy and two girls. He was asked if his son was interested in motors, he commented, not yet, but time will only tell if he will follow in his father's footsteps and be an antique outboard motor enthusiast.

B & B

BRONZE PROPELLERS

Specializing in Outboard Racing Propellers

Bryant & Berry Propeller Co.

1212 Lillibridge, DETROIT, MICH.

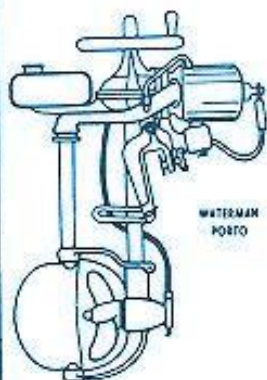
Pacific Motor Boat, January, 1930

DECALS

A decal adds that finishing touch to any restoration project. All are made close to original specification, in full color.

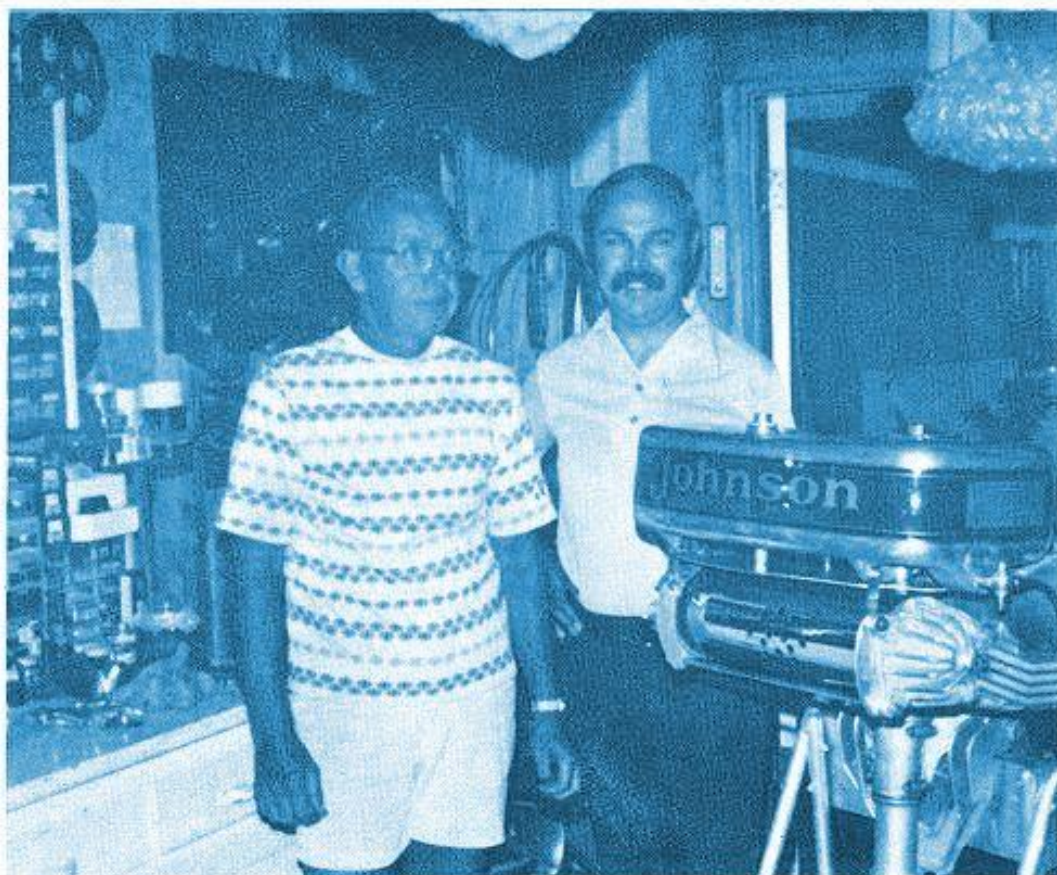
For Evinrude Single, 1911 to 1928.	\$ <u>4.95 set</u>	Order from: Robert Brautigam 2316 West 110 Street Bloomington, MN 55431
For Elto rear tank, any through 1928. Water applied type.	\$ <u>3.95 each</u>	
For Johnson Sea Horse "16" or "24," fits early P and S models.	\$ <u>7.00 each</u>	Order from: Eric Gunderson 57B Mt. Hamilton Road San Jose, CA 95114
For Evinrude 4-60.	\$ <u>8.00 each</u>	
For Johnson "Sea-Horse 32," fits Models V-45, 65, 70; VR's and VE's. For Johnson "Sea-Horse 25," fits all Giant Twins. For Evinrude, fits Speedifour or Big Four (specify). Like originals, pressure-sensitive vinyl.	\$ <u>10.00 each</u>	Order from: John C. Harrison 1000 Northwest 54 Street Miami, FL 33127
Metal nameplates for front of gas tank. Fits all Elto Ruddertwins. Authentic!	\$ <u>5.95 each</u>	Order from: George Loeb 7037 Suburban Avenue Norfolk, VA 23505
For Johnson "Light Twin" 1921-1927 plus A-35. Includes "To start" and "Oiling" decals. Exact duplicates of original Light Twin decals. Water applied type.	\$ <u>5.00 set</u>	Order from: Bob Zipp 182 Brentmoor Road East Hartford, CT 06118
For Johnson "K" models, patterned after P/N 27-227. Complete with starting and oiling instructions. Fits OK-55 and OK-60 too! Water applied type.	\$ <u>5.00 each</u>	Order from: Charles W. Hansen 2108 Broward Road Jacksonville, FL 32218
For Johnson alternate firing A models, patterned after P/N 25-244. Also fits K-35, K-40, K-45, KR-40, A-35, A-45, OA-65. Vinyl type, self stick.	\$ <u>6.00 each</u>	Order from: Charles W. Hansen 2108 Broward Road Jacksonville, FL 32218
For Evinrude Scout, 1937, and others with similar tear-drop tank. Complete with operating and oiling instructions.	\$ <u>6.00 each</u>	Order from: Bob Grubb 1368 Meadowbrook Road Pottstown, PA 19464

The Antique Outboard Motor Club Inc.



**Al Klebek
613 Craig
Addison Il. 60101**

Publishing Office: 2316 West 110 Street, Bloomington, Minnesota 55431



AOMCI 10TH YEAR