

# *The* ANTIQUE OUTBOARDER



*Start of the 1930 Chicago Marathon*

## October

## 1976

The Antique Outboard Motor Club, Inc. is incorporated in the State of Texas as an Educational Institution. The Club is devoted to people all over the world who are interested in the search for, restoration and preservation of old time outboard motors. Regular membership dues are \$12.00 per year. Other membership information is available on request from Jim Nixon, 4781 Fifth Avenue, Youngstown, Ohio 44505, U. S. A.

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# THE ANTIQUE OUTBOARDER CONTENTS



**"I had a dream last night ... I got a Johnson  
for Christmas"**

*-think it over dad!*

**S**ELF reliance is but one of many benefits which water motoring gives to youth. Poise, development of mechanical ability, solemn communion with Nature—these belong to the youngster with a good outboard motor.

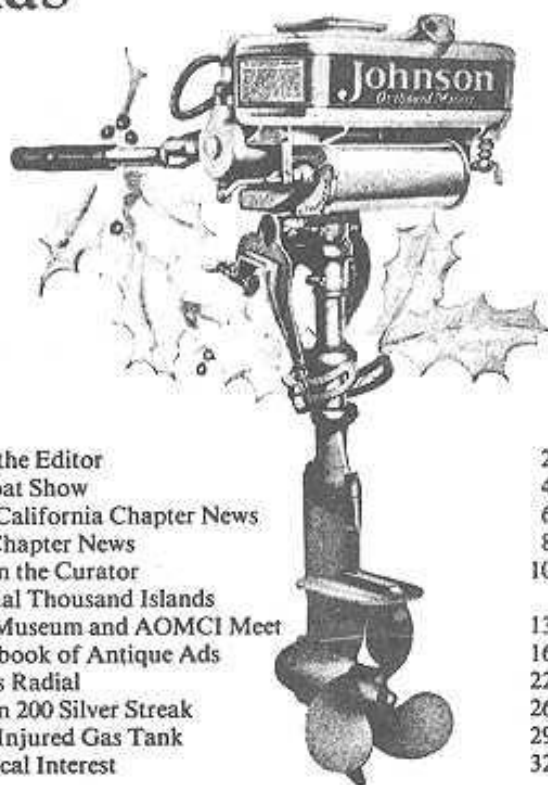
Give that son of yours the motor of his dreams. He knows outboards. He knows the class of the field—and nothing less than a Johnson is his choice.

The Light Twin, shown here, weighing but 37 pounds, with a speed of 12 to 15 m. p. h., is the dependable Johnson for boys. It is priced at \$140.

*Other Johnsons are: the Big Twin world record outboard, 32.323 m. p. h., price \$210; the Standard Twin, world record of 26.36 m. p. h. in its class, price \$165; the Light Single, price \$110. All prices f. o. b. Waukegan, Ill.*

**JOHNSON MOTOR COMPANY**  
3048 Pershing Road, Waukegan, Ill.

Export Division: 75 West Street, New York City  
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Peterborough, Ontario, Canada



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THE WORLD'S LARGEST MANUFACTURER OF OUTBOARD MOTORS

**Johnson**  
*Outboard Motors*

DECEMBER, 1927

**MOTOR BOATING**  
100 West 40th Street, New York, N.Y.

*The Antique Outboarder*

Volume 11 — No. 4

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# LETTERS TO THE EDITOR

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## A SMALL LEGAL TANGLE . . .

*[Editor's note: At a recent Meet, member Glenn Ollila was issued a ticket for improper boat registration. Seems the gentle hum of our quiet outboards attracted a bit of attention . . . The incident resulted in the following letter from Judge Graff.]*

Dear Mr. Ollila: Thank you for your letter dated July 29, 1976. It is unfortunate that you had an unpleasant experience at Ripple River concerning your boat registration. I certainly do not know the reason your permit was not issued pursuant to Chapter 361.20, but apparently it was merely an oversight by the Aitkin County Sheriff's Department.

I am sure you understand that the Sheriff's Department is a very busy office and have very many things to do, and these things can and do happen. I also do not feel that it would do any good to point fingers and place blame on anyone for the incident. I do understand how you would feel concerning this matter, and I hope that future instances of this nature can be avoided by making sure that you do have your permit.

In the interest of justice, I am dismissing the charge against you without even having discussed the matter with the arresting officer, whose name I do not have at this time, although in fairness to that person, I am sure that he would have some remarks concerning his version of the incident.

I do hope you and your friends enjoy your rendezvous with your restored antique boats and motors and continue to have the same pleasures in the future. I would only ask that you make certain that these matters are cleared by the Sheriff's Department so this problem will not arise again.

I am returning your check in the amount of \$25.00, and I hope you will inform your friends that a misunderstanding occurred and hopefully will not happen again. Thank you. Sincerely, *Robert S. Graff, Judge of County Court, Aitkin, Minnesota*

## A FINE PIECE OF OLD IRON . . .

I have an outboard motor that has been in my family for more than 56 years, to my knowledge made by Submerged Electric Motor Company, Menomonie, Wisconsin.

The name of the company is cast into the aluminum fin and the model ("FW") is stamped into the casting after the cast-in word "Model" as is "Serial No" before the stamped 384. The "Voltage" 8-16 is also stamped in.

The motor is two speed (I believe that is the meaning of Volts 8-16) within the globe switch on top.

It runs in one direction only (I believe the meaning of the Model—F.W.) and reverses by full 360 degree swivel so the propeller operates always against the single ball thrust bearing exactly described in the patent.

The "Submerged" owned by Ralph Evinrude/Jim Webb has an electrical reverse but a very different and much improved vertical axis, 180 degree rotation switch from that shown in the patent though the schematic is identical with the patent.

I suggest the Evinrude/Webb unit may be later than mine because of the much improved switch.

Bob Brautigam has one, but I have not seen it yet. I believe now that mine is probably a 1F99 model.

We have no way at present of knowing exactly when the motors were made and sold. They should not have been sold more than one year before the patent application, or May 18, 1898.



The application drawings appear not theoretical but from actual model structure or designs existing prior to May 18, 1899, but not sold before May 18, 1898.

We believe Jim Webb picked the patent issue date, May 23, 1900, on the Evinrude/Webb motor for his excellent book.

Incidentally, the Evinrude/Webb motor bears a tag saying in effect "Given Ralph Evinrude 1953 by Fritz Gettelman." I knew Fritz, a successful, high-quality Milwaukee brewer, and his children and nephew. Though Fritz died in 1954, two of his children and one nephew, friends of mine, (once a very knowledgeable outboard dealer, now in aircraft) remember the motor as children but do not know where or when Fritz acquired it.

My motor has another number 184 stamped on both the vertical tube and the rear bronze propeller bearing-brush holder casting at their screw juncture. I cannot explain the 184 coincidence(?)

The Evinrude/Webb motor has a 9-inch propeller. Mine has an 8-inch.

My motor is all brass or bronze except for the aluminum fin, the vertical tube, and the magnet portions of the electric motor structure, and all is heavily nickel electroplated except for the cast aluminum fin.

I am not positive from which individual my father secured my motor. Either Mr. Chester Wanvig, Mr. Fletcher Harper, or Mr. Jack Caldwell of Globe Mfg. Co., Milwaukee, gave it to him in 1919 or 1920. Globe Union is now a very large and well respected manufacturer of batteries and electronic components.

I believe at one time they considered taking over and manufacturing this product, possibly even building partial prototypes. I say this because as a child I recall seeing an unfinished brass or bronze fin, unpolished, with the Globe trademark of that era cast into the fin. This component was not used by my father, and has been lost to me.

I knew personally Mr. Wanvig, Sr., Mr. Caldwell, and Mr. Harper.

I cannot help but wonder at the legend that Finn Irgens went to Sweden to "buy a patent" on 360° reverse. Irgens was too bright (unless the Swede had tilt-up tied to the reverse swivel) not to have known of the Submerged patent which would, of course, have invalidated the Swede on 360° alone.

Please register my motor. *J. M. Van Vleet, Sr.*

#### A LUCKY RESCUE . . .

Here is a photo that I thought might be of interest to the members. It is a heavy aluminum plaque that was rescued from a junk yard by member Bill Seibel of Seattle. The inscription on the brass plate reads: **His vision and achievement led to a class of power boat competition of unparalleled popularity. Replica of a plaque presented to the founder of an industry on the golden anniversary of his creation of the first production outboard motor.** *P. S. Brooke, Jr.*



#### A VACATION HELLO FROM BILL . . .

We have been enjoying our vacation this year at our home in Moosehead Lake, Maine. It is going to be over all too soon. We have to be back in Toms River by August 31.

This year boating has been great fun up here. We are quite remote here—12 miles from the closest town, accessible only by boat or seaplane. Our 1929 Sea Horse "16" is with us and has been running daily. This is a natural home for it. It pushes our aluminum boat nearly 30 MPH—it is as fast as my old PO! Turns 4500 revs! Starts first pull and will idle like a fishing motor. *Bill Salisbury*



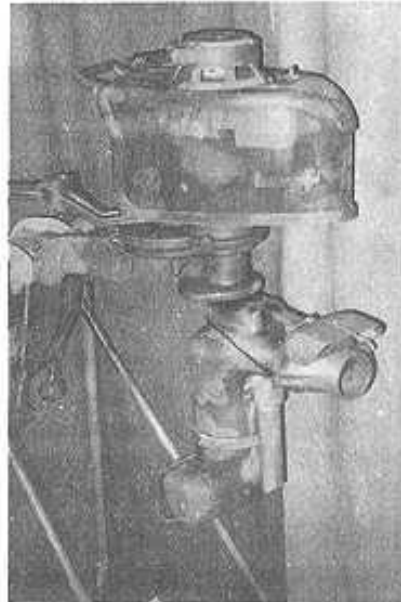
# Albany Boat Show





*Left to right: Bill Hodges, guest Virginia Jones, and Phil Kranz.*

*photos submitted by Walter L. Weidman*



# Northern Cal

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by Eric Gunderson



The Northern California Chapter met at Lake Oroville on April 25, 1976. Four members had promised to be there, and it was a beautiful day. I was the first to arrive, and I immediately set about trying to start my Cross Radial, which I had just finished the night before. I checked everything, and pulled, swore, begged, and finally was able to coax it to life. I had brought my Sportfour along in case of problems, but the Cross seemed happy enough, so the Sportfour remained in the car.

Just as the Cross began to run continuously, Jesse Franklin drove up. Jesse is a new member from the extremities of northern California, and he spends much of his time in Canada during the summer. Jesse brought along a Model 200 Johnson, OK-60 Johnson, PO-15, and a new 1938 Speedifour. The previous owner of the Speedifour bought it new in 1938 with a case of oil. He only ran it enough to use half of the oil (at 1½ pints per gallon, remember), and then never ran it again. The engine is totally original and in new condition. Jesse's PO-15 is a similar case. He got it from a hunting guide in British Columbia, and the owner said that it had only been on a couple of trips since it was new. It turned out that a "trip" is a run of 500-600 miles into the wilderness—just enough to get a PO broken in nicely. The PO came complete with a coating of blood from a successful hunting trip.

While Jesse and I were exchanging stories, Herb Riebe and his wife arrived. Herb had been working on his version of a 1976 Big Four, but he ran out of time. He brought along his trusty Speeditwin, which is in new condition and ran flawlessly. I'm sure we will hear more about Herb's Big Four soon.

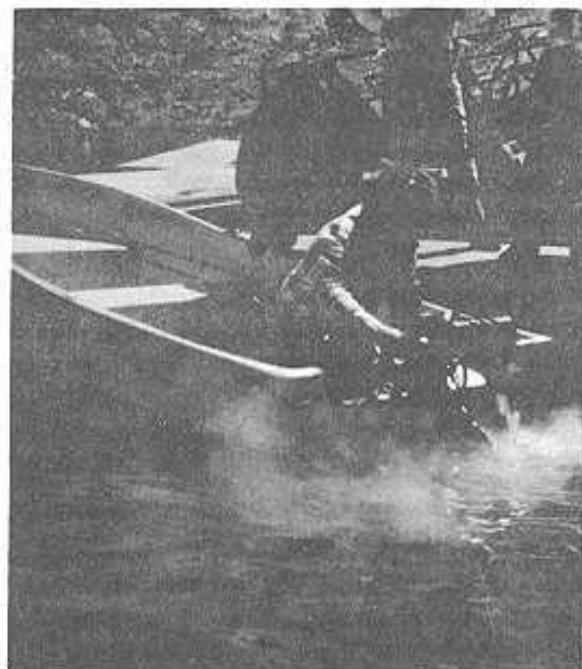
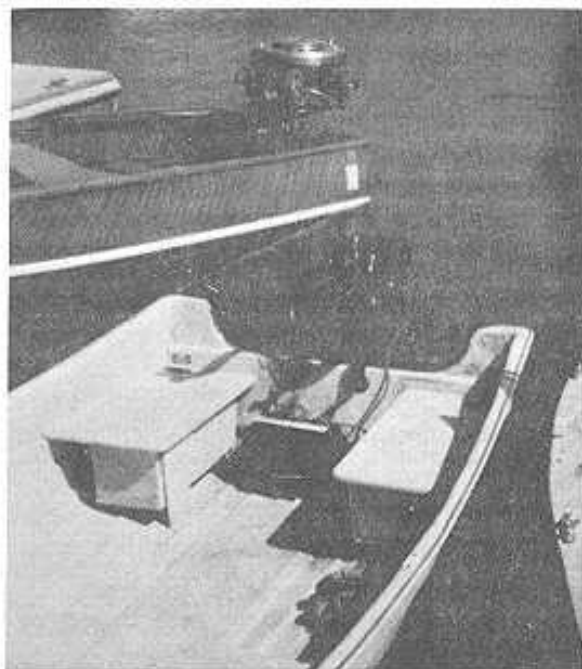
After introductions, and checking out each other's treasures, we decided to move to a more protected area, because the wind was getting stronger by the minute. Just as we were leaving, Greg Kenitz arrived. Greg brought along his newly restored Caille Liberty Drive, and a new KA-10 Johnson with three minutes' actual running time.



After lunch we got down to the serious business of running the iron. The Cross was the first to belch to life, but that's about all it would do. It would run continuously, but it vibrated terribly, and wouldn't even plane the boat. I was concerned about the 248-pound monster shaking my boat to pieces, so I gave up. I later found two fouled plugs, and extremely retarded spark timing. Greg got his Caille to run just as I returned. First it would run forward, then backward, then forward again, but finally Greg got the right combination of advance and carb adjustment, and he putted off into the distance. The Caille was the hit of the day. It would run beautifully in either direction, and was a sight to behold. After the Caille smoke cleared, Greg mounted up his KA and again roared off toward open water. All the while Herb was zooming around taking photos and practicing his wake jumping.

The hour was getting late, and the wind higher, so we awarded the trophies, and headed for home.

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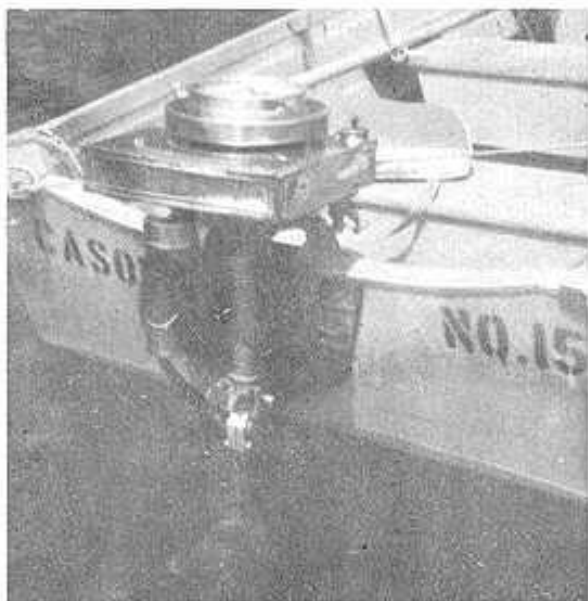


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Here's the tally:

**Greg Kenitz** ..... Caille Liberty Single — *Oldest Running*  
**Jesse Franklin** ..... 1938 Speeditwin — *Best Restoration*  
**Herb Riebe** ..... 6039 Speeditwin — *Bang and Go Back*  
**Eric Gunderson** ..... 1929 Cross — *Most Unusual*

# MIDWEST CHAPTER NEWS



*Jim Ross' 1922 Evinrude Model K (aluminum.)  
The motor was restored in two weeks.*



*Has many features from Model A lower unit,  
cylinder heads, flywheel; fuel tank looks like  
two A tanks put together.*

by Rich Choyce

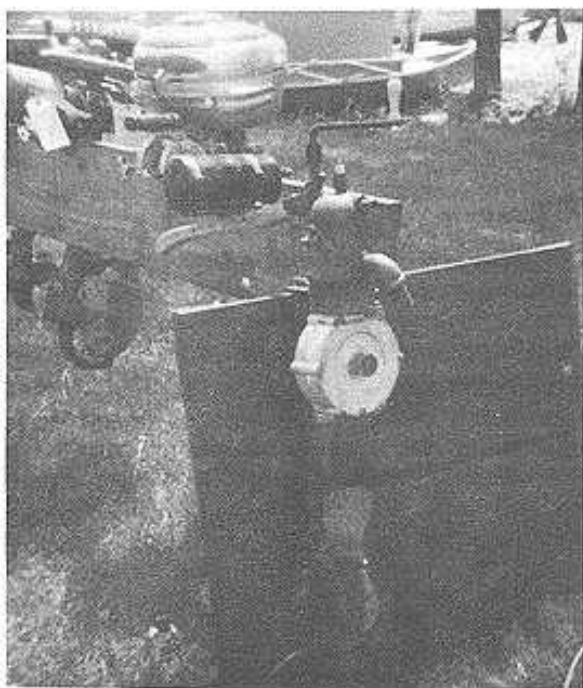
May 16, 1976



*Bob Davis' V-45 Johnson.*



*Bob Davis' very rare 1916 4-cycle Evinrude twin.*



*Jim Cason's 1907 Waterman, Bendix air-cooled twin, and Waterman Porto.*

THE NEW

# MERCURY

Alternate-Firing  
**TWIN**

1941

**ROCKET STANDARD**

**\$104.50**

Deluxe Model  
Illustrated \$114.50

## A NEW *high* IN SMOOTH, BRILLIANT PERFORMANCE!

• Again, Mercury is **FIRST** with scientific engineering improvements that add thrills to outboard motoring. The "Rocket" Mercury Twin gives you performance as smooth as a "four"—flexible as an "eight." Planes a boat beautifully, yet idles perfectly for matchless trolling . . . and the perfected Rotex Water Pump always works at all speeds. Only a Mercury gives you a *rust-proof, leak-proof, dent-proof gasoline tank* . . . and here are a few of many other features: • Unique new Magnapull starter • Twinflex propeller-protecting clutch • N.O.A. certified brake horsepower • Removable cylinder sleeves and jackets, salt water built • Improved specially calibrated carburetor.

**CHOOSE FROM 5 MODELS**—Priced from \$47.95 to \$114.50, F.O.B. factory.

See a Mercury before you buy — imitated but not equalled. Visit your Mercury dealer or write Dept. K-2 for literature.

**KIEKHAEFER CORPORATION**  
CEDARBURG, WISCONSIN

RICHARD A. HAWIE

# NOTES FROM THE CURATOR

The pesky old Curator once again points out an error in motor identification. The Model 607 electric starting Super C on the cover of the January 1976 issue should be a 1931-33 model, not a 1929 model, according to the Evinrude Model/Year Guide.

While I am not a safety nut, I'd like to point out that the practice of starting a motor on dry land with a prop on it as pictured on page 10 of the January issue is akin to Russian roulette. When one of those prop blades breaks, it can slice through half the people on the beach. Run dry like that, it's just a matter of time before a blade will come off. Those old bronze or aluminum props were not the best castings in the world, and Lord knows what abuse the prop had in the years before you got it. Even a modern stainless steel prop will throw a blade now and then. In fact, starting a motor on dry land or on a dock with a prop on it will get you a 30-day suspension at a sanctioned APBA race. The second time you do it, it's a year's suspension—if you're alive. Warming up an old monster is a good idea, but please take the prop, shear pin, and prop nut off first.



The more we delve into outboard history the more mysteries and unanswered questions we seem to acquire. Jim Webb's article about the 1930 airplane/boat in the July 1975 issue is an example. I found four references to "the waterplane" in my boating magazines.

The first is on page 124 of the April 1930 *Rudder Magazine*. The caption under the picture says, "the waterplane, built by the James Robertson Shipyard of Alameda, Calif. promises something thrilling in outboarding. . . the waterplane planes in less than fifty feet and takes off the water after a short hundred foot run. . ." This waterplane is different from the one Jim pictured, as it consists of two stepped sled-like hydroplanes. The pilot sits out front; the wings have a great deal of dihedral; the boom is closed, with small elevators, but no air rudder. "Robertson Waterplane" is painted on the boom. There is a dock and factory on the bank in the background.

The second reference is on page 218 of the May 1930 issue of *Motor Boating*. The picture is of the same waterplane pictured in the April *Rudder*, but from a different place; the dock is right behind the wing. This picture is larger, and the motor can be identified; it's a 4-cylinder Johnson electric start Model VE-50. The short article with this picture says that the waterplane is the invention of Russell and Milton Robertson of *Alameda, California*. A joy stick operated the elevators and ailerons, and a foot pedal operated the rudder under the boat. Speeds of 40 to 50 MPH were claimed. Production of the waterplane was not expected for several months.

The third reference is on page 160 of the October 1930 issue of *Motor Boating*. There is a picture of a waterplane at the Harmsworth Trophy Race at Detroit, Michigan. This one is the model that Jim pictured. It has a straight wing, an air rudder on the elevators, an open type boom, and the pilot and a passenger sit in a small cockpit. This waterplane has an Elto Quad for power. The name *Elto* in the familiar script is painted on the side of the hull. Completely ignoring their article in May, *Motor*



*Boating* said that the waterplane was invented by the Robertson brothers of *Clinton, Iowa*. The wing area of this wing was 220 square feet.



*Page 218, May 1930 Motor Boating.*



*Page 160, October 1930 Motor Boating.*

The same picture is also on page 28 of the October 1930 issue of *Rudder Magazine*, but no further information on the waterplane is given.

I have movies of the 1930 National Outboard Championship at Middletown, Connecticut, and the Eltopowered waterplane made some demonstration flights there. From the movies it sure looked like a lot of fun. With one of the new V-6 outboards I bet the ride would be mind-boggling, but you'd probably need a boat registration and an FAA pilot's license. The federal and state bureaucrats would have a field day.

I haven't found any mention of the waterplane after 1930. There appeared to be at least two of them built, one with a straight wing, and the other with a dihedral wing. Anyone know what happened to them? There are still a few old timers around the pits who were at the 1930 Nationals; I will try to jog their memories when I see them this racing season. Maybe some of our Detroit members were at the 1930 Harmsworth Race and saw the waterplane. Recollections, anyone?

I want to close with my opinion on something that may become a problem in the future. Lately members have been building rare motors out of parts where none existed before, or are running engines with different parts on them than factory stock. I would suggest that the Club recommend that motors that are built up from parts have a nameplate on them designating that they are replicas, and motors with significant parts' swaps be also marked. For instance, TR-40 powerhead, PO-15 gearcase would describe the Giant Twin on page 17 of the April 1976 issue. How many noticed that? How many members have actually seen a Giant Twin close up to know that that isn't the original gearcase? Now if you want to run it, and the original gearcase is completely blown or non-existent, a PO case will make a running motor out of a museum piece; but why not note the fact that it isn't factory stock? Life will be a lot easier for us poor motor identification experts. I picked that example because it was easy to spot and in the last issue, which should be available to everyone to see; I wasn't picking on Clarence Sitton, with whom I've corresponded for years. I've got more mixed motors in my collection than you can imagine—a 1926 Lockwood powerhead on a Champion lower unit, for instance. The owner wanted a selection of props and a water pump, so he made a neat marriage of two eras.


We should take steps to identify the replica motors and those with mixed parts now while we are still a small "low bucks" hobby. I guess what worries me is what I see happening in other hobbies, the toy train collectors, for instance. The price they pay for rare locomotives and train sets is more than the whole Lionel factory was worth in its heyday. The serious collectors are plagued with actual counterfeiters who make rare cars and engines out of common ones.

Now no one in his right mind would start building rare Giant Twins to sell to us at \$25.00 a motor. Sam Vance probably spent more building his replica 1927 Quad than he paid for his last car. It was a labor of love; we are all still pure hobbyists. But what happens in ten years if all them rich Texans who are paying \$100,000 for Ford V-8s and \$300,000 for Model J Duesenbergs tire of thousand dollar standard gauge toy trains and "one of fifteen" Sturm and Ruger custom-made handguns and discover antique outboard motors? Who is going to tell the real from the fake? Can't happen, you say? I understand there are a couple more Model J Duesenbergs around than the factory built. In 1986 when new member "Tex" writes me that he has been offered a 1927 Elto Quad for a bargain \$50,000, but his neighbor Clem already has three in his collection, I can tell him the factory only made three, none of which survived 1930. The one he is offered was probably a replica made by Sam Vance 'way back in 1975. Look for Sam's marking on the crankcase. Don't applaud, send oil.

To keep the Curator from going nuts over weird motor permutations in the future, and to keep the hobby a fun hobby free of speculators, let's get out those electric pencils and engrave the unusual motors for posterity.

**PERKO OUTBOARD ACCESSORIES**

The Perko line of outboard lights is the finest and most complete to be found today. Cast from highly-finished brass or bronze, with many exclusive features, they make the smartest and most useful accessory an outboard can have. The cast bronze combination light shown at the right is the latest addition to the Perko line. It has an electric Edison double contact base socket. Used as post light, riding light, and flagpole holder. Over all height, 6".



**Perko Outboard Combination Light, Removable in an instant.**

**Smartest Outboard Combination Light of its size, Bronze.**

**Perko Pole Light, Outboard or Inboard Boats. Unscrew nut to remove.**

**The Perko Outboard Pole Light. Cast from finest bronze. Fresnel Ball Globe.**

**Wrought Brass Combination Light. Unscrew from base to rebulb.**

*Ask for Special Folder describing Perko Lights for Outboard and Inboard Motor Boats.*

**PERKINS MARINE LAMP CO.**  
 1945 Pitkin Avenue      Brooklyn, N. Y.

## 12th Annual Thousand Islands Shipyard Museum and Antique Outboard Club, Inc. Meet

*by Riggs Smith*

During the busy weekend of August 6 and 7 the annual boat show and parade were held at Clayton, New York, in the heart of the Thousand Islands region. A little rain fell Sunday morning, but the rest of the weekend was clear, though cool.

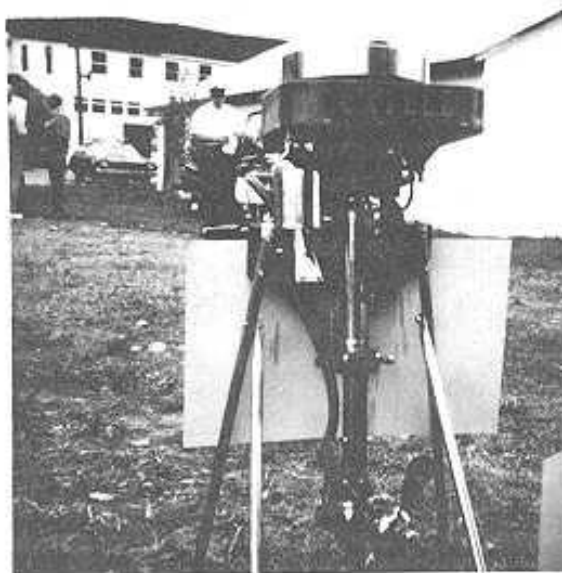
The outboarders set up their displays in a new area on the former Brooks Lumber Company dock front. This turned out to be quite an improvement over the smaller, darker area used in former years. The importance of the outboard motor in the format of the Thousand Islands Museum is gaining.

Four prizes in the outboard section were offered: Best Restored; Oldest; Most Unusual; Best Outboard Boat and Motor Combination. Repeat winners from past years were evident: Phil Kranz from Slingerlands, New York won the "Most Unusual" award for his 1928 Amphion 6 HP. (Last year he won this same class with another Amphion, 1915. Most outboarders would like to own one Amphion; Phil has two that are winners!) Tom Luce, the super craftsman from Westfield, New Jersey, tied with Riggs Smith for the "Oldest Motor" in the show. Tom's motor is a 1917 Caille 5-speed and Riggs' is a 1917 Evinrude Rowboat Motor. The "Best Restored" motor in the show was a beautiful 1921 Lockwood Ash owned by Bill Andrulitis, West Hartford, Connecticut. This motor looks new and runs absolutely great. In the final category, Riggs Smith won the "Best Boat and Motor Combination" award. The motor was a Caille 5-speed 4 HP (1933) on a 1937 15-foot Thompson.

Dick Fuchs, of Simsbury, Connecticut, also showed his fine handiwork in exhibiting his Merc KF-7 (1950), and his 9.8 HP K-50 Johnson. His trailer is quite interesting, as it's designed to accommodate the outboard motors over a long trip without damage to his restoration work.



*Riggs Smith with various engine entries.*



*Tom Luce's 1917 5-speed 2 HP Caille.*

The judges for the entire show were most cordial despite their arduous task, for they judged not only the outboards but numerous other categories as well. The judges were:

- John Gardner — member of the editorial board of *National Fisherman*; associated with Mystic Historical Museum, Mystic, Connecticut.
- Armand A. Hauser — President, National Association of Engine and Boat Manufacturers; Vice-President of Mercury Marine.
- Gordon Houser — Director of Advertising, Chris Craft Corporation.
- Richard L. Rath — Editor, *Boating Magazine*.
- Peter C. Ball — Naval Architect, Boating Technical Division, United States Coast Guard, Washington, D. C.
- Richard Brooks — Retired Coast Guard Captain.
- Dr. Jim Smith — Engine and boat expert representing Canadian expertise.
- Pete Smyth — Editor of *Motorboat*.

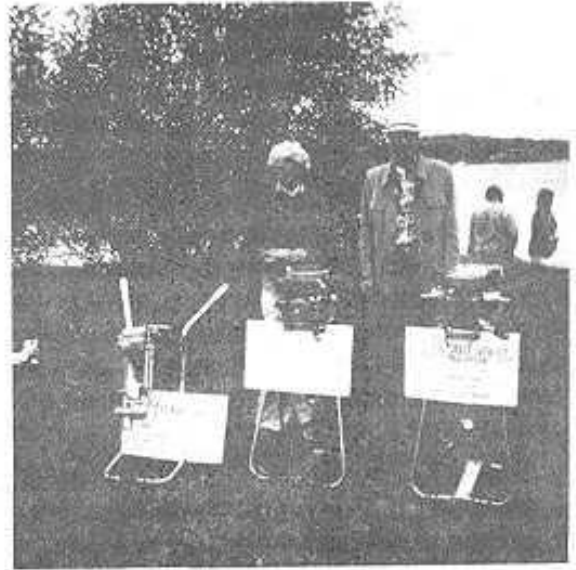
Following are the results in each of more than 20 categories judged by these distinguished gentlemen.

**St. Lawrence Sailing Skiff.** Winner, *Bertha*, Frederick G. Schwartz, Camillus, New York.  
**Sailing Craft.** Winner, *Onaire III*, A. M. Beebee, Jr., Webster, New York.  
**Rowing Craft.** Winner, *Oreno*, W. E. S. Gamblin, Carleton Place, Ontario.  
**Sailing Canoe.** Winner, no name, John F. Prendergast, Schenectady, New York.  
**Wood Canoe.** Winner, no name, Melvin Calhoun, Jr., Clayton, New York.  
**Adirondack Guide Boat.** Winner, *Annie*, Richard Rybinski, Minoa, New York.  
**Canvas Canoe.** No winner; Honorable Mention, *Explorer*, Shirley Marsden, Auburn, New York.  
**Howard I. Chapelle Memorial Award.** Awarded this year for his craftsmanship and meticulous detail in building reproductions of classic boats as evidenced by two entries, to F. Everett Smith, St. Regis Falls, New York.  
**Canadian Classic Award.** *Oreno*, W. E. S. Gamblin, Carleton Place, Ontario.  
**Classic Boat of the Year.** Sailing canoe, John F. Prendergast, Schenectady, New York.  
**Ellis Cup.** Winner, Cleveland E. Dodge, Jr., Skipper, Sally Mole, Crew, in the *Goose Skiff*. Second, William D. and Linn Rueckert in the *Morgan Goose Skiff*.  
**Cherokee Cup.** Winner, D. Barton Haxall, Skipper, William D. Rueckert, Crew, in the *T. Lee*. Second, Harold E. Herrick III and Sylvie Carter in the *Augusta Mann*.  
**Pre-World War I Slow Speed Launch.** Winner, *Fawn*, John and Shirley Wells, Canton, New York.  
**Pre-World War I High Speed Launch.** Winner, *Suwanee*, Robert O. Cox, Fort Lauderdale, Florida.  
**Post-World War I Custom Launch.** Winner, *Our Ma*, Duane Chalk, Fishers Landing, New York.  
**Post-World War I Production Launch.** Winner, *Opus*, Monroe H. Sherrill, Fairport, New York. Second, *Liebchen*, William P. Willig, Ballston Lake, New York. Third, *Ming Toy*, John Withers, Central Square, New York.  
**Craftsmanship Award.** *Romona* Steam Launch, Louis D. DeYoung, Grand Rapids, Michigan.  
**Balloons—10¢.** Richard B. Spitzlei, Green Pond, New Jersey.  
**Chris Craft Awards.** Best Runabout, *Opus*, Monroe H. Sherrill, Fairport, New York. Best Cruiser, *Ann B*, Robert G. Fitch, Syracuse, New York.  
**Hutchinson Awards.** Oldest Eligible, *Wild Goose*, Cleveland E. Dodge, Riverdale, New York. Best Maintained, *Cossack*, Windsor M. Price, Skaneateles, New York.  
**Gar Wood Award.** Best of Show, *Kon Tiki*, Edmund C. McNally, Chicago, Illinois.  
**Hacker Craft Award.** Best of Show, *Liebchen*, William P. Willig, Ballston Lake, New York.  
**Best Cruiser.** *Wakawa*, Lorman and Beverley Weiss, Waterloo, Ontario, Canada; *L'Aventure*, J. Cameron Graham, Manotick, Canada.  
**Antique Boat of the Year.** *Suwanee*, Robert O. Cox, Fort Lauderdale, Florida.





Left: Bill Andrulitis with Lockwood Ash and Hartford Sturdy Twin. Right: Phil Kranz with 1928 Amphion 6 HP and 1936 Champion 1.2 HP (winner, "Most Unusual.")



Jean and Tom Luce with 1938 Clarke Troller (left), 1917 Caille 5-speed (center), and 1933 Caille Multiflex (right.)

The *Suwanee*, dated about 1904, has long, graceful lines and is a former Gold Cup Racer. It is in daily use around Bob's cottage at Grindstone Island. Bob is a charter member of AOMCI, and was the finder of the 1904-07 Motogodille outboard motor which is on display at the Shipyard Museum and is perhaps the oldest outboard motor extant.

Next year's AOMCI — Shipyard Museum Show will be held at Clayton, New York on August 20-21. The outboards, sailing antiques, and special interest groups will be displayed on Saturday, and on Sunday the inboard display and parade will take place. The outboards are invited to parade on Sunday as well (this year's parade was comprised of about 125 boats, some 100 years old.)

Hope to see all boat and motor buffs next year.

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THIS Old Town won't cut capers when she's loaded with a bunch of fidgety kids! She's steady as an ox — but swift as a swallow! Safety, speed, economy, and durability are yours in an Old Town. Extra-rigid ribs and keel. Strongly braced stern to hold the weight of a motor. No vibration or shaking. No caulking, either. The non-leak, *seamless* canvas-covering can't open up!



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March 1937 Popular Mechanics

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From **\$35.50 UP**

**NEPTUNE Motors**

May 1939 Popular Mechanics

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IN AS LITTLE AS 3 SECONDS\*

NEW *Martin* MOTORS  
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NOW, MORE THAN EVER BEFORE,  
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Expect much . . . and get more . . . from amazing MARTIN OUTBOARD MOTORS! Thrill to unexcelled outboard motor performance . . . speed . . . beauty . . . flexibility . . . endurance! Once you MAN-A-MARTIN . . . you'll enjoy outboard motoring at its best. Only MARTIN has mechanically controlled intake poppet valves for perfect fuel control at all speeds . . . full 360 degree power head swivel . . . simplified, synchronized throttle and spark controls . . . streamlined, leak-proof filler cap . . . vertical stern adjustment . . . more horsepower per pound of motor weight . . . plus many other outstanding features. Every MARTIN MOTOR is "Performance Tested" by experts before it leaves the factory, your assurance of highest quality and workmanship. See the entire MARTIN line—3 sizes—at your dealers today!

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MARTIN MOTORS are priced from \$119.95



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OUTBOARD  
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"60"  
Alternate  
Firing Twin  
7.2 H.P.  
Approx. 44 lbs.  
Certified at  
4,000 R.P.M.

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**COMPLETE.** All built and finished, outside varnished, rich brown mahogany, inside painted jade green, ready for the motor. Shipped on receipt of 25% balance on delivery. Prompt shipment guaranteed. Reference: Nyack Nations Bank.

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**OUTBOARD SPEED AND COMMERCIAL BOATS**

Built to be used with all makes of outboard motors, you will find these boats extremely satisfactory either for racing or pleasure boating. Speeds up to 25 miles per hour, depending on motor used. Sturdily constructed, they are absolutely seaworthy and will last a lifetime.



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Sizes 12 3/4 ft. up*



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Write today for new 1928 folders and prices.

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The "MATE"  
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Here's a smart and capable bundle of boat power that turns rowing toil into boating pleasure . . . puts more fish in fishing . . . packs more fun into every hour on the water . . . at a price of only \$34.50! In every ounce and every inch it's a genuine Hooded Power Evinrude — offering the overshadowing advantages of famed Evinrude starting ease . . . Co-Pilot steering and finger-tip controls . . . underwater silencing and trouble-proof Centrifugal Pump Cooling — all with new low cost, new handiness, new operating economy. Catalog free!

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9 GREAT EVINRUDES TO CHOOSE FROM

May 1939 Popular Mechanics



# EVINRUDE \$55 SPORTSMAN 55



WITH HOODED POWER  
Weighs only 24 1/2 lbs.  
Run 3 Hours on 1 Gal. Fuel

## AMERICA'S MOST POPULAR OUTBOARD

1936 model an even greater value than before. The Sportsman attaches instantly to any boat; drives rowboats, canoes, skiffs, fishing boats up to 7 m.p.h. Runs 3 hours on gallon of fuel. So simple to operate that a child can easily start and run it. Note the handy light weight—only 24 1/2 lbs. Extremely quiet—underwater silenced. Write today for new catalog describing Sportsman and 7

other Evinrude models, including the new Hooded Power Sportwin, only \$77. Address EVINRUDE, 4905 N. 27th Street Milwaukee, Wis.



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*Airplane engineering!* Lightest weight outboards in the world! Streamlined! Fully enclosed! Simple! Air-cooled gasoline model is all aluminum alloy except shafts and gears—genuine Stromberg carburetor—quick starting—smooth—quiet—cushion-mounted—no water jacket and pump to clog and wear out! Just the thing for portaging—for small sailboats, to get you home—for dinghy or fishing boat power—perfect for canoe use—scores of newest aircraft type features found on no other outboards!



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MARINE PRODUCTS COMPANY  
459 Bendix Drive, South Bend, Ind.

1.2 H.P. SINGLE  
**\$39.50**

*Best Performance*  
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Just what you want in a motor!  
 Easy to start, plenty of speed  
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NOW — a genuine Johnson Sea-Horse TWIN — an improved version of the famous Johnson power head known 'round the world for DEPENDABILITY and that sold in other years for as much as \$145 — with the highest official certified power rating in its class — for only \$79.50! Try it — and get the thrill of your life!

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**M**EADOWS' FLYERS are staunchly built on true lines of solid mahogany with white oak timbers. The cumulative genius of Carolina's long experienced boat builders enters into each boat we build.

Meadows' Flyers are built in several sizes, ranging in price from \$175.00 to \$250.00. A type of every size outboard motor.

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**MEADOWS' SHIPYARDS**

NEW BERN

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### — CARTERCRAFT —

Sensational New V-Bottom Outboard Speedster—steel and wood construction. A safe, durable 12 ft. boat at \$110.00 f. o. b. Albion.

Write today for complete specifications.

**DARROW STEEL BOAT COMPANY**  
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*new* **EVINRUDE**  
*"Scout"*  
15 POUNDS \$44  
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Here is the lightest, handiest slickest little motor that any fisherman, cottager, vacationist ever dreamed about . . . and, complete, ready to go, it costs only \$44! Drives good sized boats up to 5½ miles an hour! Uses only a single quart of fuel in 1½ hours . . . 100 miles of carefree water motoring for less than 60 cents!

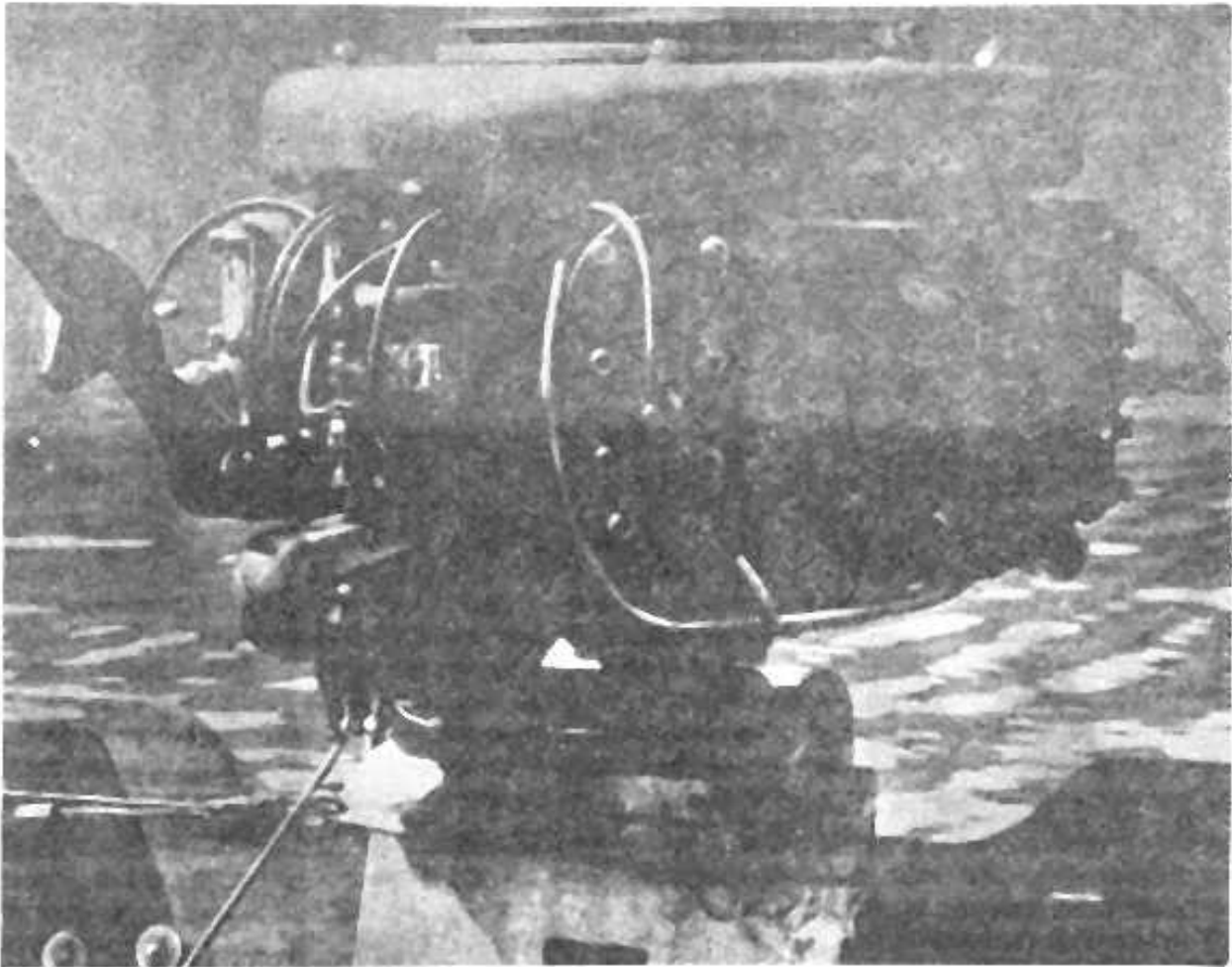
Write today for catalog on the 15 lb. Scout and brilliant new Evinrude Streamflow models for 1937. Address, EVINRUDE MOTORS, 5015 N. 27th St., Milwaukee, Wisconsin.

**EVINRUDE** SEND FOR CATALOG

March 1937 Popular Mechanics

**1929 CROSS RADIAL**  
**Model 563 — Serial Number 2978**

*by Eric Gunderson*  
*photos by Herb Riebe*

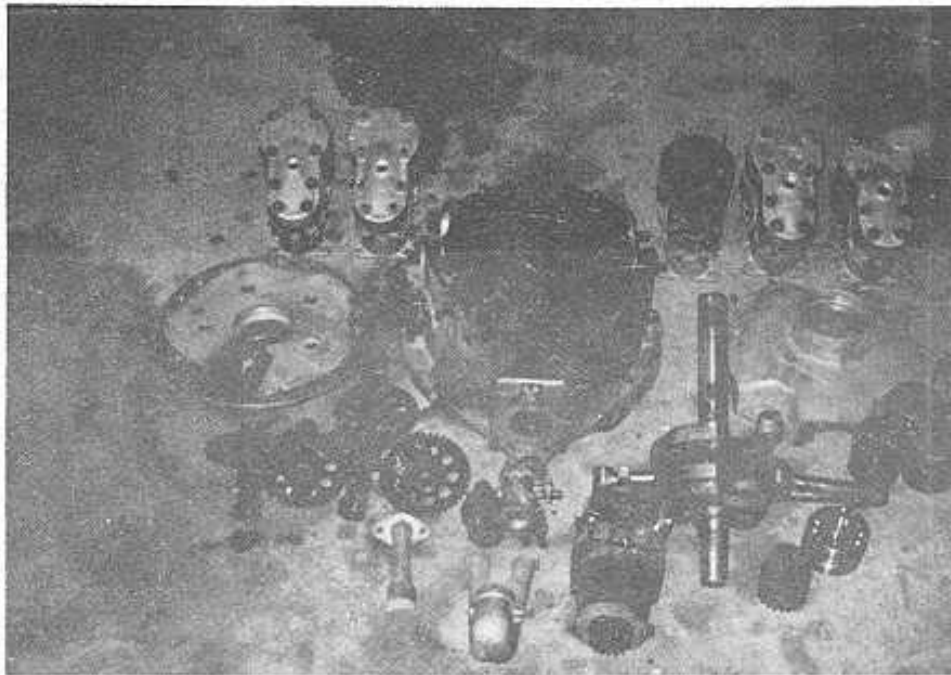


The *Newsletter* of October 1974 had a Parts Needed/For Sale ad by member Stan Dubois. The last words of the ad were "Cross Radial—trade for Hex Head with props." Here is the story of the Cross after two years of restoration.

Stan got the engine from a fellow in upstate New York. It was basically together and hadn't run in years because of magneto troubles. All the parts were there, but there were numerous broken pieces, stripped nuts and bolts, a broken flywheel and carb, besides the nightmare in the magneto—no coil. Anyway, Stan and I came to terms and shipped our respective engines across the country.

On disassembly everything seemed to be in order, and a thorough cleaning revealed an engine in remarkably good condition. The broken parts went out to be repaired; new rings, bearings, and seals were ordered from the auto parts store; the parts department produced a new Speedifour carb that matched the original; and the slow task of reassembly began. All the while there was an ominous cloud





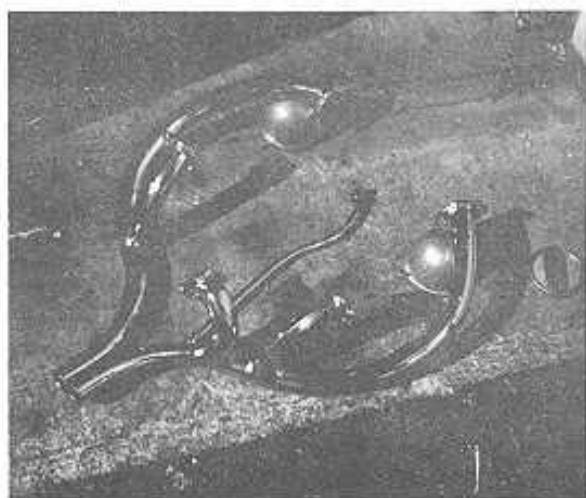
*Omigod, where do I start?*

on the horizon. What about the coil? I didn't even know what it looked like. The magneto was made by Scintilla of Switzerland, so I wrote to them, and their American distributors. No luck. I had just met Herb Riebe, who helped immensely with the mag troubles, and he knew of a fellow who could rewind a coil if we knew what we needed. While this was in the works, Herb came across Savage Magneto Service, a company that rebuilds magnetos for antique aircraft. In talking with them, we found that one of the employees had owned a Cross in the past, and they even knew what Herb was looking for. To make a long story short, they had a coil that could be adapted easily, and they rebuilt the mag to better-than-new specs. So much for the major hurdle.

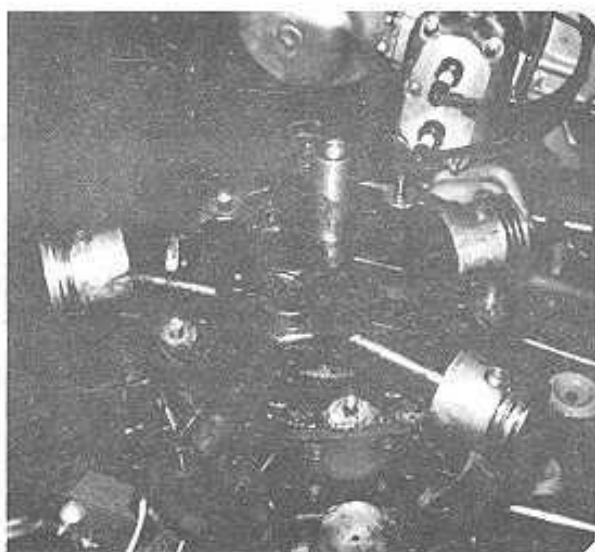
As a last step in the final assembly, I checked the valve timing to be sure that the valves were operating as they were supposed to. They weren't! Using the timing marks and following the firing order caused the exhaust valves to be open through the compression stroke. After trying several times to get the timing right using the marks, I disregarded them and used the degree wheel and TDC as reference points. This time it worked. I was rewarded with the engine firing on the second pull once it was together.

The exhaust pipes turned out to be a major obstacle. The ones with the engine were made from copper pipe, and bore no resemblance to the originals. With several photos in hand, I started searching for a man to make them. Finally I found an old man who reluctantly said he'd do it if I wasn't in any hurry. Three months later—the day before the April Meet—they were finished.

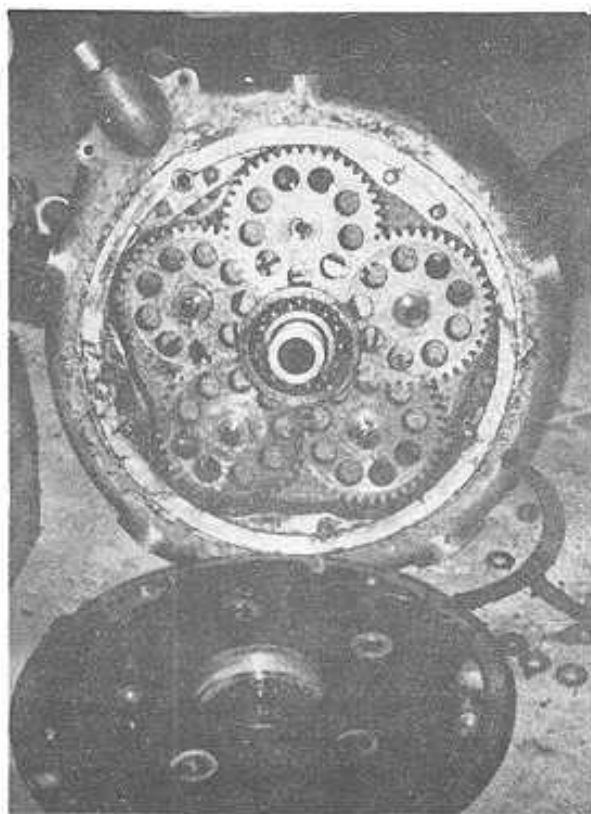
So, after more than two years, the Cross is complete, original and running. At the April Meet, it was only running on three cylinders, and upon arriving home I discovered two fouled plugs, and an excessively retarded magneto. With clean plugs and the proper magneto timing, it runs in the 26 to 34 MPH area. It starts very easily, has a unique sound, and is a very civilized engine in spite of its massive proportions. One of the members at the April Meet had owned a Cross during the thirties, but sold it because he could never get it to run. It is an extremely complex engine, and there could be many more reasons why it wouldn't run than would be found in the usual two-cycle engine.



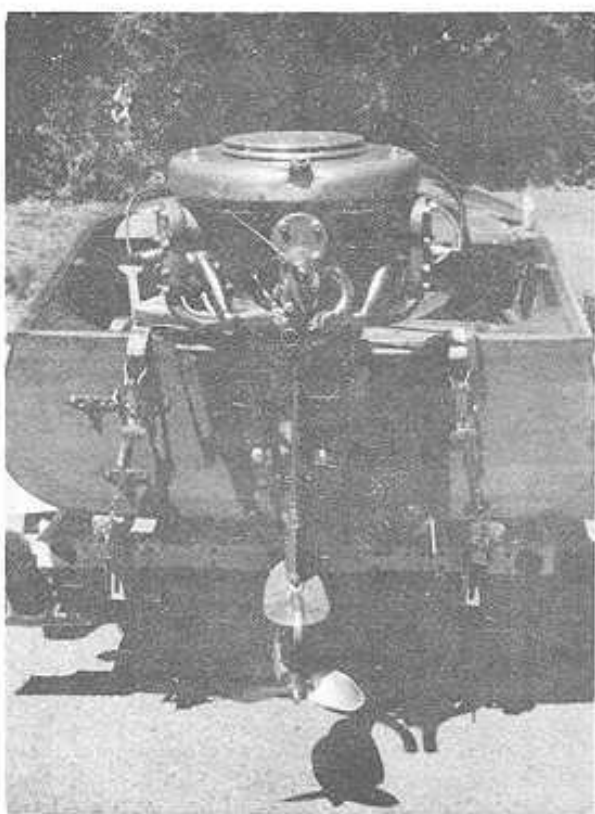
*Custom-made pipes that duplicate the originals.*



*Crankshaft showing master rod, heavy counterweights, and secondary rods.*



*Camshafts in place. Note intake manifold around rim of crankcase. Oil pump on bottom plate, lower left; camshaft driven.*



*Evinrude's and Johnson's view ...*



Here are the specifications on my engine:  
Serial Number 2978 (probably 1929/number 78.)  
50 HP at 4200 RPM.  
Tillotson carb.  
Oil capacity, 2 quarts.  
Weight 248 pounds dry.  
Bore 2½", stroke 3", 75 cubic inches.  
Scintilla magneto.  
UD-16 Champion plugs.  
Firing order 13524.  
Crankshaft: 2 pieces bolted together with large bronze counterweights. 3 main bearings (ball), with 2 ball bearings on the master rod. Secondary rods articulated to the master rod.  
Camshafts: 1 for each cylinder driven directly from crankshaft. Lifters work directly on the

valve stem. Gear type oil pump driven by #3 camshaft.

Valves below the cylinder—intake on the bottom, exhaust next to the cylinder. Combustion chambers are banana shaped with 6:1 compression.

Cooling is by water pickup behind the prop, distributed to each cylinder, then into the exhaust pipe for noise control. The intake manifold is cast into the base of the crankcase with necks connecting to the intake ports.

The magneto is gear driven by a spur gear from one camshaft gear. Initial advance is 20° BTDC, maximum is 42° BTDC.

Gear ratio of the lower unit is 12:18. The lower unit is all ball bearing with leather seals.



# The Martin 200 Silver Streak

by J. L. Smith

*Built by speed experts, for speed lovers, this great motor with its special Torpedo Lower Unit skims the waves like a breeze, gives you thrill after thrill as you show your wake. Martin "Twist-Grip" Control lets you "go ahead as you look ahead"—a necessary safety feature for high speed operation. Equipped for remote speed and steering controls. Exclusive "big motor" built-in gas tank. Six gallon auxiliary tank optional or standard.*

For 1953, Martin Motors Division of National Presto Industries, Inc., Eau Claire, Wisconsin had a notable breakthrough from its traditional line of "fishing motors." From 1946, when its first outboards were introduced, the company had kept a relatively low profile in the outboard motor field and produced a series of dependable quiet-running machines ranging from 2 HP to 10 HP. From the first their advertising appealed to the average user, such as the fisherman, the emphasis being on lightness, quiet operation, and dependability, rather than speed; and over a period of time Martin owners became very loyal.

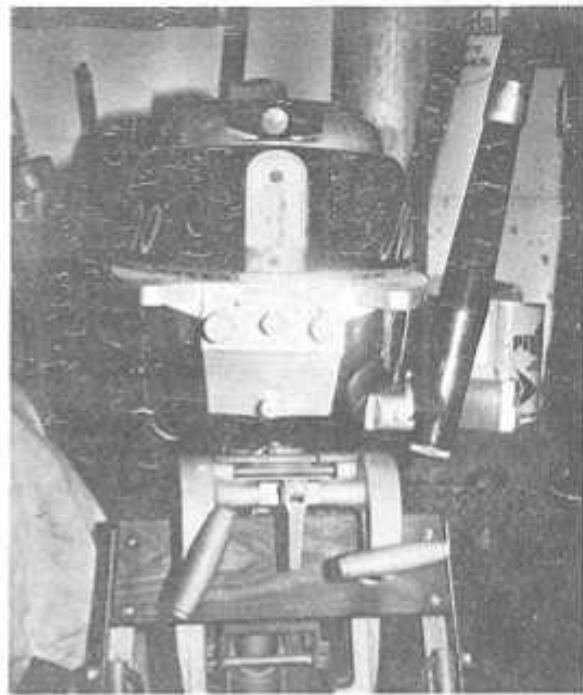
It was somewhat of a surprise when the Martin Company announced the Model 200 Silver Streak. Such a specialized machine, expensive to produce and with limited sales potential, could prove to be a poor financial risk. Although cleverly designed, it was apparent from the first that it would never be a match in competition with the alcohol-burning Mercurys and Konigs. Its use appeared to be limited to the amateur racing enthusiast as a kind of hot rod.

An alternate-firing twin of 19.94 cubic inches, the 200 Model developed 20 HP at 5,000 RPM and weighed 70 pounds. Its list price complete with auxiliary fuel tank and pump was \$499.50. It is interesting to examine the 200, and right off, the slender and beautifully streamlined lower unit catches attention. Using an almost square gear ratio of 15-16, very fast propeller speeds could be obtained with the two-blade 6¾" × 9½" racing bronze wheel. For general purposes, the standard engine came equipped with a two-blade 7½" × 8" aluminum or bronze propeller. Michigan had available as numbers AM420 and AM421 three-blade bronze props for heavier boats and for towing skis. These props were 7¾" × 6" and 7¾" × 7" respectively. However, the idea of using this machine for such a purpose, with its frictionless internal construction, special lower unit, and gear ratio, appears unrealistic. It was more suited for use on high-speed planing hulls.

All Martin 200s were equipped with 10-pint capacity black and silver gas tanks attached to the motor. Auxiliary 6-gallon remote tanks were available as an accessory, together with a fuel pump kit which bolted to the intake port side of the lower cylinder. The fuel selector valve on the front panel has three positions: off, motor, and auxiliary. The motor-mounted tank has a visual fuel gauge mounted vertically at the front. The motorcycle-type twist grip throttle on the steering handle has an intricate system of rods, gears, and flexible shafts to operate the spark advance and throttle simultaneously. The accessory sheet lists remote control kits with cable lengths varying from 6 to 15 feet for use with either front or rear mounted steering bars when wheel steering is desired.

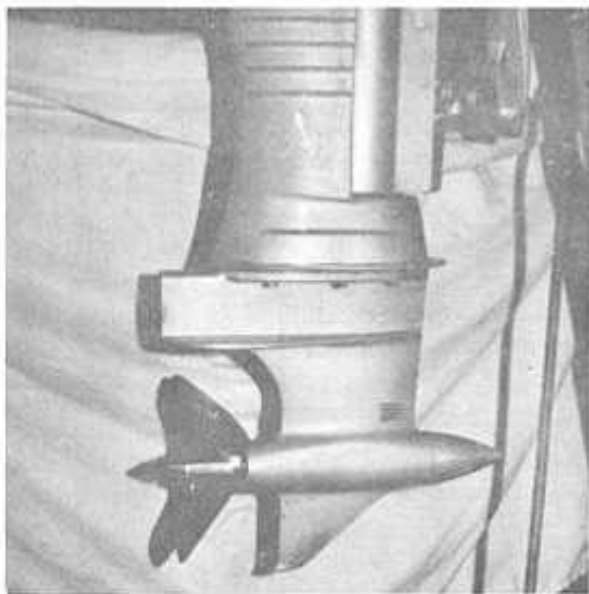
Particularly characteristic of the Martin outboard motors are the mechanically controlled intake poppet valves. Placed in a housing between the crankcase and carburetor, these valves have stems activated by cams or eccentrics integral with the crankshaft. Sturdy springs ensure prompt valve return after intake. The Martin 200 has four such valves, two for each cylinder. Since only one lobe is provided on the crankshaft for each cylinder, one valve will open slightly in advance of the other.





*The Racing Streak. Note vertical fuel level gauge at front of tank. Center panel: left knob is push-pull choke, right knob is fuel selector, center small knob is low speed carb adjust, and bottom small knob is high speed carb adjust. Tilt angle adjust is between the two large stern bracket tightening handles. The bar for wheel steering has been removed.*

*photo courtesy Larry Healey*



*Racing unit with short intermediate housing, pointed nose piece, and racing prop.*



*Standard unit with long intermediate housing, rounded nose piece, and regular prop.*

Friction-free construction is used inside wherever possible. There is a double set of roller bearings at the top end of the crankshaft and a single set at the bottom. The center bearing is oilite bronze. Each aluminum piston has three 1/16" piston rings fitted to the 2 1/2" cylinder bore. Bronze connecting rods have 28 needle bearings each at the large end. Inside the lower unit, the propeller shaft has a roller thrust bearing, and the driveshaft has a needle bearing at its lower end.

The carburetor is a Carter horizontal Model No. N-2018S, and is full-range dual-adjustment concentric bowl type with push-pull choke. The magneto, constructed by Wico, has two coils, two condensers, and two sets of breaker points.

A six-vaned Neoprene rotor-type water pump keyed to the driveshaft just above the lower unit drives water up a tube for effective cooling of cylinder head and block. As in other models, the 200 has a convenient adjustment handle at the front of the mounting bracket to set the cant of the motor for each transom angle. A handy self-rewinding "Depend-a-Pull" starter is provided.

The standard Streak Model 200 had a rounded lower unit nose piece or gear case cap. Suited for regular transom heights, it measured 27" from base of powerhead to lower tip of skeg. The aluminum two-blade prop was 7 1/2" diameter and 8" pitch. Fuel pump and auxiliary tank were optional equipment. The racing Streak had a pointed gear case cap, and the vertical dimension from base of power head to lower tip of skeg was about three inches shorter than the standard version. This was accomplished by substituting an entirely different intermediate housing between gearcase and driveshaft housing. As seen in the photo, this housing was shorter and markedly squared off at the rear. This model was suited for racing hydros and fast planing boats having a shorter transom height. In addition to these changes, the racing Streak came with fuel pump installed and auxiliary fuel tank. A bronze two-blade racing prop 6 1/4" x 9 1/2" was fitted.

In its service bulletin No. 53 dated February 1, 1954, the company offered a conversion kit for \$32.00 to adapt the standard Silver Streak lower unit for racing purposes. The kit (P/N 65922) consisted of:

Short driveshaft . . . . .	\$5.00	Short intermediate housing . . . . .	\$22.50
Modified gear case cap . . . . .	4.30	Short stud . . . . .	.30
Gaskets . . . . .	.15		

If the operator did not require a short motor, it was recommended that the exhaust outlet found on the regular intermediate housing be partially eliminated by a vertical cut. This gave it a more squared-off look. To ensure an adequate supply of fuel at all times, it was suggested that a fuel pump be installed, which of course required the use of a remote tank. It was recommended that the oiling be increased to 1 1/4 pints per gallon. Other internal modifications were possible, such as balancing the crankshaft, rods, and pistons, and cleaning up and polishing by-pass and transfer ports. Likewise steps and sharp corners in the valve ports were removed and outside surfaces of the valve guides streamlined. Removal of the distribution plate between carburetor and intake manifold and enlargement of carb jets with use of alcohol fuel and a larger float valve needle completed the suggested mods. The factory sheet acknowledged that oversize needles were not available and would have to be handmade. The size of the jet enlargement could only be determined by trial and error.

Despite these changes, very little appears to be recorded in the racing literature regarding performance figures in comparison with current racing motors of the period such as Champion Hot Rod, Konig, and Mercury. It can only be assumed that the 200 did not offer serious competition and was suited only for the private enthusiast.

By 1954 the same engine, named the Silver Liner, was offered with Twist Shift forward, neutral, and reverse; but somehow adding extras did not improve sales volume. By 1955, faced with diminishing profits, National Presto Industries, Inc. discontinued its outboard motor division. Now, 21 years later, Martin outboards of various models may occasionally be seen still in service, evidence of their enduring quality and workmanship.

## R<sub>x</sub> for an Injured Gas Tank

Ever had a motor nicely cleaned up and in perfect mechanical shape but a little embarrassing to show off because of a dented and scratched up gas tank? Well, here are some ideas to use in renewing a bad tank. Gas tanks are like high-performance aircraft in that they can be most unforgiving of mistakes in their handling. However, except for welding, ordinary hand tools, some patience, and a little careful attention are all that's required.

While most of this article is aimed at aluminum tanks intended for polishing, painted tanks and tanks made of other materials are also discussed. It is assumed that any necessary welding will be a purchased service for most readers. Persons with no previous experience having this type welding performed will find the results most pleasing and not expensive. Aluminum cannot be welded satisfactorily by ordinary gas or electric welding techniques. A process called Heli-arc welding must be used; and properly done, the welds are invisible after clean-up. Now, down to work.

First off, clean the tank completely inside and out using a water soluble paint remover or other commercial solvent and plenty of soap and hot water. Avoid using paint remover on or near a decal you wish to save. Strong detergents, vigorous brushing, or soaking too long can also be destructive to decals. If preferred, decal surfaces can first be cleaned with a mild alcohol solvent/cleaner and then coated with a clear, semi-gloss varnish, prior to cleaning the rest of the tank. With a clean tank under a good light, make an examination of the work required and plan accordingly. A few scratches and tiny nicks are the easiest, while a badly crushed corner is the hardest to repair. If possible, arrange for a solid working surface, or, better still, a stout bench vise to hold the tank while it's being worked on. If a vise is used, insert wood blocks between the jaws and the tank to avoid further damage, and clamp to the tank brackets whenever possible.

Gas tank repair can more easily be described if identified by type of damage:

- a. Scratches and small nicks
- b. Crooked filler neck or drain housing, not severe
- c. Small, outside radius dents, not over 1/8" deep or sharply creased
- d. Small or large area cave-in without sharp creases
- e. Sharply creased cave-ins, gouges, and punctures
- f. Flattened or crushed corners (a ballooning of adjacent surfaces may have occurred)
- g. Corrosion.

Damage types a, b, c, and d can usually be repaired without heating. However, more severe damage will likely require open-flame heat, and a gasoline-residue-free tank is a must. *Be careful*—even if the tank apparently has not had gas in it for a long time. One technique is to keep the tank filled with water while using heat. This is not always possible, so if in doubt, check with your local outboard or welding shop for a suitable gasoline solvent.

**Scratches and small nicks.** Use a tool called a bearing scraper on shallow scratches or nicks on flat surfaces or inside radii and a small three-cornered, fine tooth file on outside corners. Follow this with a sanding, using fine carborundum production paper. Put a little oil on the damaged spot first to lessen the scratching effect of the production paper. When the original scratches or nicks are gone, wipe the surface clean and sand again using 400 grit carborundum paper with just a small amount of oil for a smoother finish. Wipe clean again and buff or polish. The scratches or nicks will be gone. This is the basic clean-up procedure to be used also, as referenced later, after more severe damage repair.

**Crooked filler neck or drain housing.** Slightly tilted filler or drain housings can be straightened using a good eye and a little properly applied leverage. For a drain housing, a 4' to 6' section of 1/8" pipe, screwed in, can act as the lever to bend, push in, pull out, or provide whatever action is needed. A



different size pipe or wood dowel may have to be used, but the treatment is the same. The same technique is used also for the filler neck straightening. The trick is to get a grip on the heavy neck section and move it to where you want it. You might have something to just fit the threads—outside or inside—or a spare gas cap could be fitted with a handle to act as a lever. Whatever means is used, avoid damaging the threads. If sharp bends are to be straightened, use a propane torch or equivalent to first relieve the metal in the area of the bend.

**Small outside radius dents not too deep or sharp.** This type damage, if reasonably slight, may be repaired by light hammer tapping to rework the metal surface contour. Most dents have a slight raising or pillowing-out all around the dent. Hammer tapping all around the dent tends to reshape the entire radius in that area, thereby reducing the dent, sometimes eliminating it. Care must be taken to not reshape the radius so much as to be visually objectionable. A little heat while tapping may be just what's needed to make the job a success. Stubborn or more severe damage such as sharp dents might require Heli-arc weld filling after the surrounding area is hammer tapped partially back into shape. After tapping or filling, use the basic clean-up procedure.

**Small or large area cave in, not too sharp creases.** This repair is directed more at flat surface "pillowing" than at corner cave-in, although this same technique may be used with some success on flattened corner repair, discussed later. The method suggested for use here is to simply force or "blow" the caved-in section back out to where it's supposed to be, taking care not to blow it out too far or deform the entire tank shape. To stress this latter point, rest assured that 60 pounds of pressure can balloon a tank so you'll scarcely recognize it. Repairing a "ballooned-out" tank is hardly feasible.

The power for forcing out the damaged section can be furnished by air pressure—or water pressure, which is available to more home-shops. About 40 pounds of pressure is plenty. Most city water systems operate at 60 or more pounds of pressure, almost too much. In any event, the trick is to completely "block in" the tank on all flat surfaces, using a wood form (strongly made.) Where there's a flywheel cut-out or depression with a flat surface (Elto Speedster tank, for example), block the cut-out too or you'll lose it. Leave the smallest possible open area for working on the damaged area. Remember, smaller curved sections of the tank, such as corners, will generally resist deforming. A large curved section may require partial blocking to insure against "blow-out."

To seal the tank for pressurizing, put the filler cap on, closing the vent and making sure the gasket is good. The drain housing is most easily adapted to a makeshift air or water hose attachment. A quick release valve in the pressure line is desirable. With the tank sealed and blocked securely, slowly admit the pressure.

Now, address the damaged area. It's usually necessary to hammer tap lightly around the entire perimeter (edge) of the cave-in. In stubborn or more creased edges, apply a little heat from a torch while tapping. The cave-in will sometimes rapidly and sometimes slowly work out to normal. Watch it, and as soon as the dent disappears, immediately relieve the pressure. Should there happen to be a welded seam section of the tank running through the damaged area, apply extra heat on the seam. After all the blocking is removed, the damaged area should be treated with the basic clean-up procedure.

**Sharp creased cave-ins, gouges, or punctures.** A small damaged area, say an inch or two in diameter, can best be repaired by filling with Heli-arc weld followed by clean-up. Larger damaged sections need stronger treatment. The problem is one of getting inside the tank to force the metal back into shape. Air or water pressure is of little or no value here, and trying to gain access through the filler opening or drain hole usually doesn't work either. The alternative is to work through or into the tank.

Working through the tank can be done by drilling a ½" hole opposite the damage, inserting a long mandrel, and hammer tapping the metal back into shape. One kind of mandrel can be made by slightly rounding off the end of a 3/8" steel rod. This is done to preclude a series of tiny outward dents in the tank caused by the edge of the tool. The rod can be bent slightly to get at hard-to-reach spots. Heating and re-heating of the damaged area is necessary to keep the metal relieved while working. After reshaping, the hole can be welded shut and both weld and damaged area can be given the basic clean-up.



Working inside the tank can be done by different methods. One is to remove a large section of the curved flywheel cutout (see Bill Salisbury's case history article), thereby gaining access to the entire inside. One can also cut out a piece of the bottom, split the whole tank near its original seam, or cut out a damaged quarter section. Pick the technique most likely to permit the easiest repair. Once the proper access is gained, the work of tapping, shaping, heating, etc. can proceed. Care should be taken to not stretch or otherwise deform the metal by too much pounding. If necessary, stop short of a complete pounding out job and have the rest of the dent filled with weld. After reshaping, the pieces are welded back together and the welds and repaired sections given the basic clean-up.

**Flattened or crushed corners.** Damage of this type is usually severe, and requires either the hole and mandrel technique; cut-out section procedure; or, if possible, cut out a section from a similar tank (i.e., make one good tank from two bad ones) and make a complete replacement of the damaged section, followed by basic clean-up.

**Corrosion.** Pitting or discolored surfaces caused by a tank having been in long contact with the ground or a damp basement wall usually need a little special treatment also. A slight discoloration only can often be removed by scraping, sanding, and buffing. Pockmarks or severe pitting are not generally repairable by welding over, since the corroded metal will not easily accept a weld. The only alternative is to cut out and replace the damaged section completely.

**Painted tank repairs.** While tanks to be polished require invisible repairs, painted-tank-fixes can be a lot less work. The undercoat and paint itself neatly hide fine scratches and, in fact, a slight roughing or sanding of the bare aluminum makes the paint adhere better. After rough reshaping, dents and cave-ins can be fully removed by filling with commercial fillers such as Dura-Tite, Fibre-glass, or Epoxy cement.

**Steel or brass tanks.** Repair of small dents in painted steel or brass tanks can often be completed by just filling with solder, liquid metal, etc., and resurfacing. However, if repair of serious damage is required, straightening from inside may be in order. Most older brass and steel tanks have soldered, instead of welded, seams. Using a torch, the entire seam can be heated, the solder loosened, and the tank halves separated. After heating and tapping to reshape, the tank can be soldered back together.

**Repair of brackets.** Cracked bracketry can be repaired using Heli-arc welding and clean-up. Missing pieces of mounting lug can also be built up with weld and sized to shape. Be sure to offer the welder a corrosion-free, oil-free place on which to start the weld. If necessary to fabricate parts of a bracket, aluminum stock can often be found in the scrap pile of any machine shop. Pick a piece not previously anodized, because anodizing also adversely affects the welding process.



***Gas tank repairs — selected tools and materials:***

1. Small ballpeen hammer
2. Assorted files, 1" wide flat, coarse; small 3-cornered, fine tooth; ½"-¾" wide flat fine tooth
3. Carborundum paper, 400 grit
4. Carborundum production paper, fine
5. Propane torch or equivalent
6. Assorted mandrels, made to fit specific repair, i.e.: 3/8" rod × 12" long, wooden dowels, wooden blocking
7. Automotive or industrial type bearing scraper. Such a scraper may be made from a large three-corner file by hollowgrinding the teeth (full length) off all three flats and resurfacing each side on a fine emerystone. The resultant tool will have three strong, long, straight and sharp edges. A wooden file handle completes the job. Any scraper should be kept in a scabbard when not in use, to protect the edges.



# OF HISTORICAL INTEREST

..... *W J Webb*

## **Outboard Motors and Their Makers in World War II**

For plenty of reasons not necessary to develop here, World War II brought boat racing to a halt. The APBA yearbook for 1946-47 shows no new outboard mile trial records established between October 29, 1941 and November 19, 1945.

Along with most others in industry, the outboard manufacturers went into War work, producing everything from machine gun parts to radio items to outboard motors to fire pumps. The list is too long to cover here.

Unfortunately it has not been possible to get information on what all of the outboard manufacturers did to serve their country in World War II. Some of them have gone out of business so completely that it has been impossible to find someone with sufficient knowledge of that time to enable me to procure a really complete story. Others, for whatever reason, haven't answered letters of inquiry.

All outboard motor manufacturers were put out of the outboard business in February of 1942 by Limitation Order L80, which 100 per cent stopped the manufacture of outboards as well as the sale unless authorized by Government priority. All stocks of completed motors—and there weren't very many of these—were frozen. The manufacture of outboards had been slowing down for quite some months due to the difficulty of getting materials because of the War. Some of the more forward-looking dealers had laid in as much of a stock as they could afford. Two months before Pearl Harbor, rumors were rife that we would be in the War before Spring. We had been out scrounging up War work for some months; and when the L80 arrived, we had quite a bit of small parts War work in the shop, but not nearly enough to absorb our capacity and work force.

Let me apologize at the beginning for talking so much about Evinrude in the following. I am sure that every outboard maker could tell as many WW II stories as I can, but there aren't many left around who were in the thick of War work. So here is a bit of WW II as I saw it.

Early in the Spring of 1942, Evinrude got an emergency phone call from the U. S. Army Corps of Engineers for all of the outboard motors, new or used, but fully rebuilt, from 16 hp on up, that we could get together and get on the track in two weeks' time. We went to work, called all dealers and distributors known to have the large motors in stock, and soon plenty of motors, most of them used (a total of four carloads), began arriving at the factory. We rebuilt all of the used ones, retested the new ones, got them all packed and shipped before the deadline. All of our people responded beautifully and pitched in with a will; some worked 12 hours at a stretch; all involved in the shop worked 12 days straight. I well remember finishing the last packing list and bill of lading about 10:00 o'clock on the last

Saturday night. The Milwaukee Road had a locomotive at the shipping room door, and pulled the cars out of our yard seconds after the Government inspector had sealed the last door. The four cars were highballed and were at their New Jersey destination in three days.

The local Government inspectors worked as hard as we did. Real cooperation was used in interpreting specifications drawn 10 to 20 years before. Doing that job was a real pleasure.

But not so fast. In our haste and anxiety to do a good job and meet what we were told was a dire emergency, we made a big mistake. We went ahead on over-the-phone promises that paperwork would follow, and so did our local inspectors.

So what happened? Those cars loaded with the new and rebuilt motors were still in the New Jersey yards in 1945. I was told by a source, which I was under promise not to reveal, that many of the motors were eventually removed (scroured?) by parties unknown, and that some were sold through Government surplus.

Further, we did not get our money until sometime in 1945. Before we were finished, my file was quite a few inches thick. I made photocopies of all documents involved and forwarded them to various offices many times. The Government boys kept asking for the originals, as somehow the papers kept getting lost, but I was smart enough not to send them. Had I done so, the originals would have been "misaid" and we would probably still be whistling. We had been bureaucratically asked why we went ahead without proper paperwork. Our local inspectors were similarly criticized.

There wasn't any dishonesty involved. Some General got an idea that they were going to need a lot of outboard motors for emergency rescue or attack work very quickly. He yelled at some Brigadier General to get on the stick, the Brigadier yelled at a Colonel, the Colonel yelled at a Captain, the Captain yelled at a Lieutenant and passed the word to get some motors right now. The Lieutenant got the wheels rolling and we performed. But what Lieutenant would ever have enough clout to get paperwork through the chain of command after the job was done? By the time the need for paperwork became urgent, all of the officers from the Captain on up had scattered to the winds.

That was a ridiculous affair, but we learned a good lesson from it, and from that time on we refused to ship as much as a shear pin without the proper paperwork. I have been told by others who responded to early urgencies by going ahead without paperwork that we were lucky; all of them had about the same trouble that we did, and some never did get paid.

In the Spring of 1942 the U. S. Army Corps of Engineers of Fort Belvoir, Virginia approached us requesting a high-powered, rugged motor to be used on personnel attack boats that later became known as Storm Boats. We responded by building up several 4-60s with magneto ignition, modified to produce about 50 hp at a speed range that would ensure long life, great dependability, easy starting, and good speed. A heavy-duty service lower unit was developed with side fins to protect propellers against barbed wire, shallow, rocky beaches, and especially to be able to withstand the heavy shocks of beaching on any kind of a bottom at full speed.

Typically, we ran into difficulties. Our 50 hp Storm Boat Motor, as it was later called, was not what the top dog had in mind. He had heard of the Soriano, that remarkable 6-cylinder, 4-cycle supercharged outboard that Jean Dupuy had driven to the world's mile trial record of 79.04 mph, and he wanted to give it a tryout as power for the assault boats being considered by the Engineers.

Gar Wood, Jr., a well-known pre-WW II outboard racing champion, had imported a Soriano which he loaned to the Engineers for tests, and these tests turned out very well.

As a result, Gar Wood was given an order to build two for further test work, since, because of the War, it was impossible to get more Sorianos over here—or in Europe either, for that matter. Paul Wearly, also a well-known outboard racing champion, worked with Gar Wood in building American adaptations of the Soriano for the Army Engineers at Fort Belvoir, Virginia.

Paul Wearly wrote as follows regarding the Sorianos which he helped build:

*This was a great engine and performed very well at all speeds. We built it with a very effective full gear shift—forward, neutral, and reverse. The carburetor was a Holley-Ford "6" type with fixed jets. The ignition was a Scintilla with automatic spark advance. The powerhead weighed 90 pounds, and we developed almost 90 hp on alcohol fuel before we reduced the size of the supercharger to run on gas. Before reduction, the inlet manifold temperatures were much too high to run effectively on gas.*

Following tests on the Gar Wood built Soriano, Evinrude, and I presume other outboard manufacturers, were asked to quote on a quantity of several hundred Soriano adaptations for immediate delivery.

We knew nothing about the Soriano outside its excellent mile trial performance. It was a handbuilt motor, with only rudimentary tooling. Neither we nor anyone else had any production tools for it, nor could the Army Engineers tell us where tools could be had. To set up from scratch to produce the Soriano in the volume required would take over a year, and the Engineers wanted delivery in three months. We declined to quote with regrets. Apparently the Engineers received a negative response from all other manufacturers whom they may have contacted, as no volume order for a Soriano-type motor was ever placed.

We sent Art Sauerberg, a very capable mechanic and practical engineer, to Washington and Fort Belvoir to do what he could to help with the problem. Many tests were run. Our 50 hp Storm Boat Motor successfully met every test and series test demanded of it.

Finally, and with great reluctance, an order for a few hundred Storm Boat Motors was issued. To be included with the motor were a box of commonly used spare parts, all tools necessary to complete field repairs, a fuel can, and a pair of metal paddles which also acted as carrying handles for the motor. The motor did not have a regular stern bracket, but a special BiPod mounting bracket which was attached to the Storm Boat bottom and which provided for quickly tilting the motor inboard when beaching.

Convincing the Army Brass that our American outboard was OK wasn't our only problem. In the early part of the Blitzkrieg in 1939 and 1940, before the United States got into it, the Germans had used what might be called an outboard on some of their river assault boats. This was a small 4-cylinder in-line automobile engine mounted on a pivot with cylinders upright, or nearly so, driving through a straight out the back drive and propeller shaft like the old Caille Liberty Drive. At first some of the Brass wanted a motor like this, but they were finally sold on the fact that our standard outboard construction would be considerably less bulky.

Another objection which occurred to the Brass was that "no one" knew how to run one of our 2-cycle outboards, and they clung to it for awhile. We finally overcame this in 1942 by setting up a factory service school in our repair department, where we did our best to teach more or less willing and qualified GIs to learn how to repair and run outboards in general and Storm Boat Motors in particular. Twenty men entered the school every other Monday for more than three years, and stayed through the course for four weeks, so that after the second week we had 40 or more men in our service school at all times. Service School "graduates" were supplied with a Certificate of Proficiency. The general idea was that these graduates would not only be Storm Boat Motor operators, but would also act as field instructors.

We were very fortunate in getting Harry Santana, our very active and successful dealer in Miami, Florida, to come up and act as our Chief Instructor in the School. Harry mostly worked at the river teaching the GIs the proper way to handle boats and motors.

For the first few months our Service Shop foreman, my secretary, and I administered the School, and outside of the 12 copies required for everything, had no trouble. Then a Second Lieutenant and a secretary arrived, which was fine. But a 40-man school is a major undertaking, and before we were through we had a PFC, a Corporal, and a Sergeant to handle matters—five people in all.



We passed the word to our dealers, and as a result many dealers, their sons, brothers, and employees who had been drafted tried to get into our Army Service School where their experience might be of some benefit. Anyone who is familiar with the Army way of doing things knows the difficulty of channeling qualified people to such a school. Besides that, once a man graduated from the School, his chances of returning to an outfit where his training might be put to good advantage were not the best. Many of our graduates went either to a baking or truck driver school. But some of the lucky or persistent ones made it back to where they could work with outboards. One of these was antiquer Stan Dubois (see page 4, *The Antique Outboarder*, October 1972.) All in all, we trained more than 2,500 GIs in our Service School.

Art Sauerberg cooperated in designing and testing the Storm Boat. The U. S. Army Corps of Engineers approved the following statement:

*The Storm Boats developed by the U. S. Corps of Engineers are an example of highly successful application of outboard power to hulls designed for high speed and good carrying capacity in shoal water service.*

*These hulls, 16' 10½" long by 6' 8½" beam and 4" draft (light), are constructed primarily of water-proof plywood with molded bows, and are designed to carry eight men with combat equipment. The double bottoms are compartmented, providing an ample buoyancy factor in case the skin is punctured, and adding greatly to the strength of the hull.*

*To be successful, these hulls demanded a very powerful and rugged power plant. Such a motor was available in the largest racing Evinrude, which had been developed to a high degree of stamina and dependability over a considerable period of years. Various modifications were made to meet the requirements of the intended service. The motors proved very satisfactory in tests and in actual service. Easily developing in excess of 50 brake horsepower, these motors drive the fully loaded Storm Boats at 23 knots.*

*One example of the adaptability of outboard motors to special hulls is shown in the BiPod mounting bracket developed for Storm Boat service. This simple arrangement not only relieves the transom of the heavy power thrust, distributing it to a wide floor area, but enables the motor to be easily and quickly installed and removed, without danger of accidentally dropping overboard.*

*Special consideration has been given to quick starting. Priming, carburetion, and ignition have been highly developed to assure quick, positive starts. The cord method of manual starting eliminates the possibility of mechanical failure; it is simple, fast, time proved. Detailed specifications of the Storm Boat Motor are given below.*

## EVINRUDE MOTORS

### Milwaukee, Wisconsin, U. S. A.

Horsepower and Recommended R. P. M.  
 .....50 H. P. at 5500 R. P. M.  
 Piston Displacement.....59.4 cu. in.  
 Bore & Stroke.....2¾ in. x 2½ in.  
 Number of Cylinders.....4  
 Fuel Tank Capacity.....3½ Gals.  
 Bevel Gear Ratio: Motor to Propeller.....15:21  
 Propeller as supplied with Motor:  
 Number of Blades and Material.....3-bronze  
 Diameter and Pitch.....10½ in. x 9 in.

Type of Pump used in Cooling System..Centrifugal  
 Weight (Net) (Approximately).....198 lbs.  
 Weight, Boxed.....650 lbs.  
 Distance from top of Transom  
 to center of Propeller.....28¾ in.  
 Distance from top of Transom  
 to effective water line.....19¾ in.  
 Overall Dimensions, omitting  
 Steering Handle.....22½ in. x 24½ in. x 52 in.  
 Dimensions of Shipping Box..81 in. x 36 in. x 35 in.

## OPTIONAL EQUIPMENT

For various classes of service such items as Shaft Lengths, Propellers, Gear Ratios and Fuel Tanks can be changed to more efficiently suit the particular requirements.

### POWER HEAD

Motor is 2-cycle with crankcase compression. Two decks of opposed cylinders firing alternately in pairs.

**MAGNETO IGNITION:** Water-proof, built-in fly-wheel magneto ignition.

**AUTOMATIC LUBRICATION:** Oil mixed with gasoline lubricates all engine parts. **GREASE SEALS** in gear housing retain grease for long operating periods.

**AUTOMATIC TILT-UP:** Motor tilts automatically when encountering submerged obstructions, or for beaching. Tilt-up stop to limit upswing.

### MATERIALS

**CYLINDERS:** Close-grained, grey nickel iron. Machined to precise tolerances.

**PISTONS:** Aluminum alloy. **RINGS:** 2. **PISTON PINS:** Nickel steel, hardened, ground, polished.

**CONNECTING RODS:** Drop-forged, heat-treated, case-hardened steel rods.

**CRANK SHAFT:** Drop-forged of chrome nickel steel, case-hardened and ground.

**CRANK CASE:** Cast aluminum alloy.

**BEARINGS:** Crankshaft: Roller and ball. Drive

Shaft: Phosphor bronze; Bakelite and ball. Propeller Shaft: Phosphor bronze, and Timken and ball. Connecting Rod: Phosphor bronze on small end; steel rollers on large end. Center Bearing: Bronze; steel rollers.

**FUEL TANK:** Heavy gauge welded aluminum.

**HOOD:** Strong aluminum alloys.

**BIPOD:** Steel.

**PROPELLER AND DRIVE SHAFTS:** Shafts are made of high grade, heat-treated steels found most suitable for the particular requirements of service. Parkerized against rust.

**GEARS:** Nickel steel, hardened.

**GEAR HOUSING:** Fully streamlined design. Corrosion-resisting aluminum alloy. Alrok treated and painted for protection against corrosion.

**BALANCED RECIPROCATING PARTS AND FLYWHEEL:** All pistons and connecting rod assemblies accurately balanced on special scales; carefully matched in sets. Flywheel accurately balanced to insure smooth power flow.

**ALL PARTS ARE OF LIBERAL SIZE AND OF PROPER RELATIVE PROPORTIONS.**

### SALT WATER USE

All models designed and recommended for use in fresh and salt water. Special parkerizing rust-proofing process applied to all propeller and drive shafts, and other exposed steel parts. All gear housings Alrok corrosion-proofed.

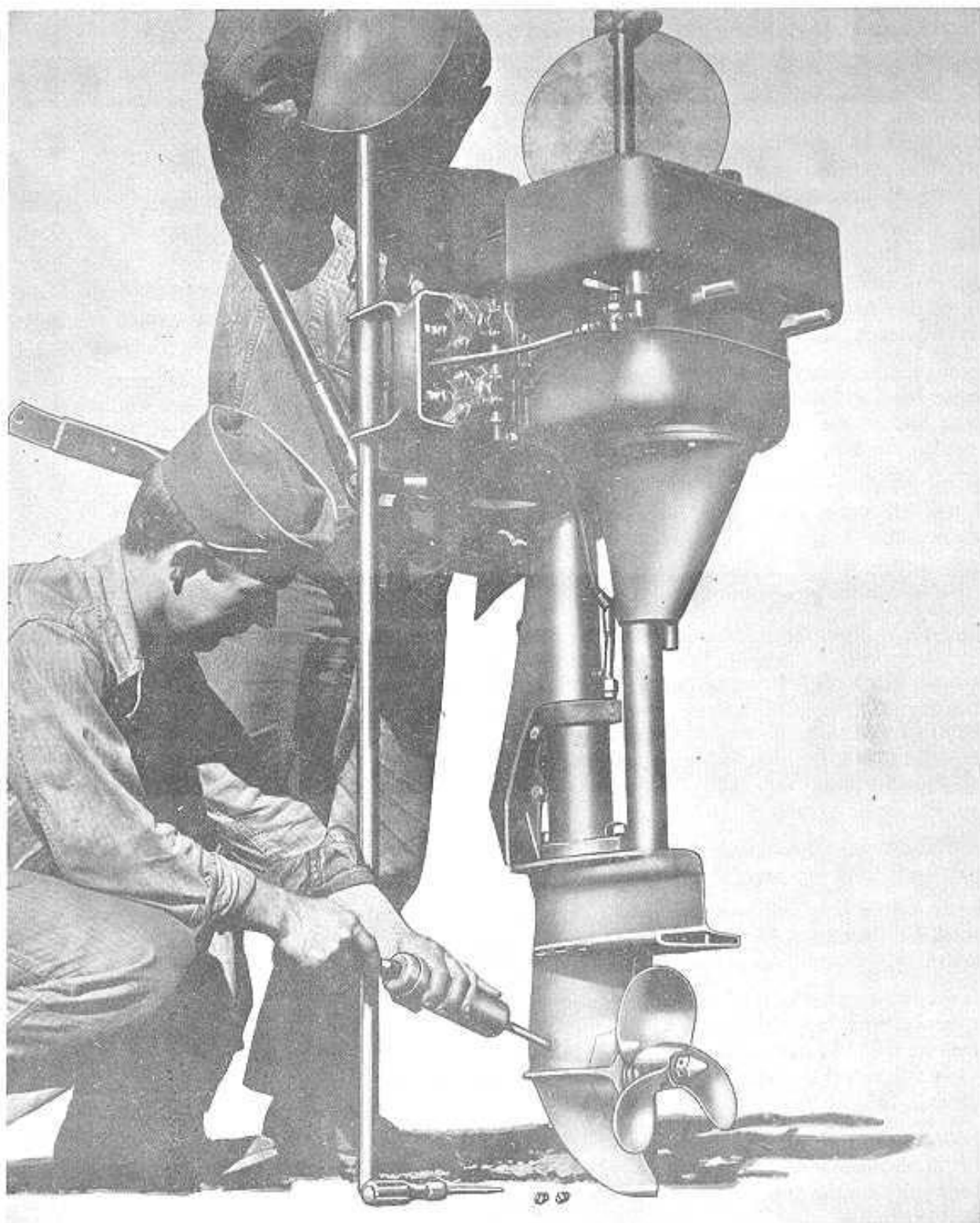
Due to the fact that most bridges had been blown up by the retreating enemy, the Storm Boats and Motors and the military adaptation of the Johnson Model P were officially credited with having ferried more than 300,000 men and equipment, including tanks and artillery, across the Rhine during the first 24 hours of the Rhine assault.

But don't get the idea that just because we had done all of the development work on the Storm Boat Motor and had received some orders for the motors, all was going well with procurement. As anyone who has supplied our Government can tell you, there are many slips to be avoided.

One day I received several calls from the fast buck brokers on the Eastern Seaboard requesting quotations on a large number of 50 hp Storm Boat Motors. Then one of the boys in Milwaukee called about the same lot, and assured me that he was solid with the "right" people. An upstate competitor who had no part in the development asked whether he could use our tooling if he got an order. I said, "Hell, no!" The next day the local purchasing office called and asked why we would not give up our tooling. And all of this time we had not received a request for quotation.

Naturally, we got on the phone after the first call, and finally received our request for quotation. We quoted and got the order—without help from any of the "boys." The story as we finally got it was that the order got into the wrong basket and went out through general channels, just like an order for ten carloads of flour. Red tape is great stuff.

Toward the end of WW II, we had developed and readied for production an adaptation of the Storm Boat Motor for U. S. Navy use on their Surf Landing Boat. This boat would have been called upon to land troops in the final assaults in the Pacific had not the War ended when it did.



*Evinrude Storm Boat Motor training scene. Note paddle-carrying handles.*

*photo courtesy Evinrude Motors*

The development of the U. S. Navy Surf Landing Boat and the Surf Landing Boat Motor involved some typical Armed Forces snafus that were both laughable and maddening.

Following a very successful surf landing demonstration before U. S. Navy and Marine operations officers near San Diego, in which Ralph Evinrude and Art Sauerberg took part using a pilot model boat and motor, the U. S. Navy ordered a dozen Surf Landing Boats from a California manufacturer, and Evinrude Surf Landing Boat Motors from us for further trials. It was well understood by all hands present that these were strictly experimental pilot outfits intended only for complete tests in which it could be determined what extra features, if any, were required for both boats and motors. They were also supposed to serve in developing a training program for operators, since landing a boat through high surf is nothing for a greenhorn to attempt.

Quite naturally all of this was overlooked, and the 12 outfits were shipped to Attu in the Aleutians, where they took part in the operations there. Since the outfits were handled by untrained and inexperienced men, success was indifferent, and the Surf Landing Boat idea got an undeserved black eye.

It took quite awhile to blast the truth out of the Navy Brass, but things finally got straightened out, and orders for Surf Landing Boats and Motors were placed. According to one Navy officer who knew the score, had not the Attu fiasco occurred, the Surf Landing Boat could have helped greatly in the island-hopping maneuvers with which General MacArthur outwitted and defeated the enemy.

One of the best pieces of war work that Evinrude performed, and one of the least publicized because of high classification, was helping in the development of the Air-Sea Rescue kit for the Naval Bureau of Aeronautics.

Very early in WW II, the development of a procedure for the rescue of Navy fliers forced down at sea was given highest priority. All fliers were eventually supplied with fluorescent dye markers and orange smoke grenades which could be seen for considerable distances by search planes. Once located, survival and escape equipment, referred to as "shipwreck kit," was dropped to the downed plane crew.

In case of a large crew, as in a bomber, the kit consisted of five pieces—a self-inflating ten-man pneumatic raft, 9.7 HP Evinrude Lightfour and fuel can, food and water supplies (including desalting equipment and a small solar still), and signaling devices, water dyes, smoke bombs, Learned type mirrors, reflector buttons, and survival clothing.

For a smaller crew, much the same equipment was used, except that the motor was a 5.4 HP Evinrude Zephyr and the raft was four-man size.

The Zephyr was of standard size and design, but the Light Four used was the so-called heavy-duty design with 31:11 gear ratio and 12" x 9" propeller with either 5- or 15-inch long drive shaft.

With Art Sauerberg doing the on-the-spot engineering, we worked out a protective packing that would ensure safe landing for the motor. The drops were usually made from about 100 feet at speeds of around 80-90 knots.

We were advised by the Bureau of Aeronautics that the shipwreck survival kits so dropped in the North Sea saved more than 750 downed U. S. and Allied Nations fliers. We never did find out the extent to which survival kits were used in the Asiatic theater, due to sudden classification red tape, but we were told unofficially that many kits were dropped to downed fliers and that quite a number were rescued as a result.

The Storm Boat Motor kits which we supplied were equipped with two steel tubes, to one end of which circular paddle blades were welded (*see photo.*) The tubes were inserted in carrying apertures and used to carry the motors over land. In water the carrying handles became paddles—hence the name paddle-carrying handles.

About a year after the War ended, we got a small order for more paddle-carrying handles from a depot. In almost the same mail I got an advertisement from the same depot showing some hundreds of these same paddle-carrying handles in surplus for sale at a low price—well below cost.





*Evinrude Storm Boat Motor and loaded Storm Boat beaching in action.*



*Twenty-four-man life raft with torpedo and heavy-duty extra-long shaft (15 inches longer than standard) Lightfour. photos courtesy Evinrude Motors*

So I called the requisitioning office and told the man that he could get all he needed from surplus. Not by a jugful. They weren't allowed to buy surplus. Besides, how could the material be inspected? Since I had been there at the depot, I pointed out that the surplus advertising office was not over 100 steps from him and that, unless they had moved the material, the paddles were less than a couple of hundred yards away. But you can't tell a bureaucrat much. So we quoted—I believe the quantity was 17. The man who made the handles during the War had disposed of his welding tooling, and the price reflected 100 per cent hand work. The depot complained about the high price, which was a great deal higher than that quoted on the several thousand lots made during the War. I phoned him again and again. Finally I said OK, we'll buy the handles from surplus, bring 'em here, clean, repackage, and shoot 'em back. That brought down the house. Terrible things would happen. What I had proposed was worse than treason. The teapot tempest finally abated when a cooler head called from a Chicago office and said, "Can't you quote the low price and take the loss on these few?" I said, "No, that would create an impossible precedent." Then he said, "I agree, so why don't you just buy the surplus handles, take 'em back to Milwaukee, repaint 'em, and sell 'em back to us at the Wartime price. But I won't put this in writing. You are on your own."

So we had one of our men go to the surplus place, buy a couple of dozen—you must always have enough to let the inspectors reject two or three—send 'em to Milwaukee, and that was that. Counting the phone calls, we lost money on the deal.

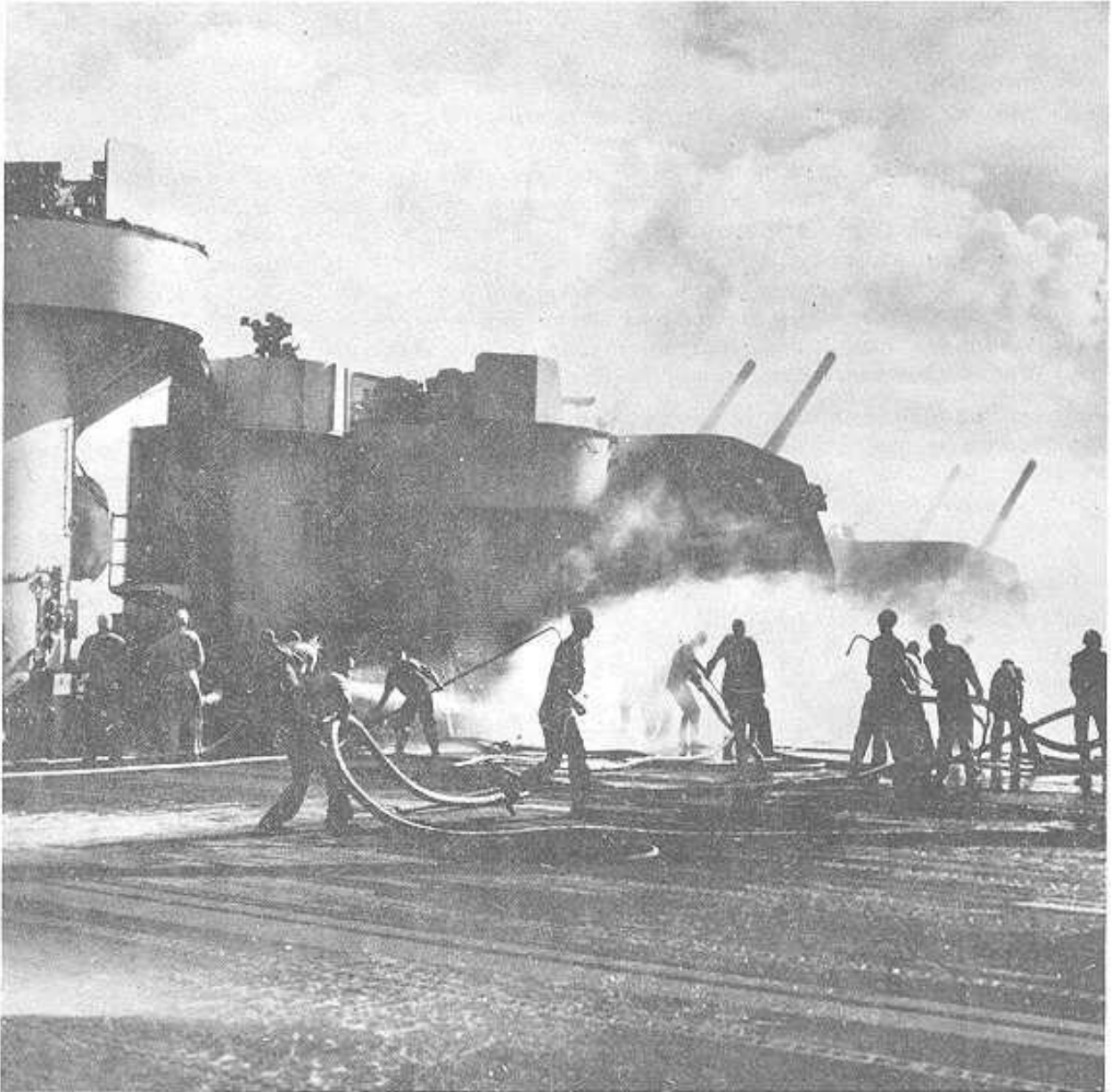
Specifications on one of the lots of War material which we supplied called for crating with special lumber. Under the specifications the knots in the wood could not be more than one-half inch in diameter, and there could be only one knot to every two or three square feet. We had Government inspectors measuring knots like mad. I had our toolroom make up some aluminum templates encompassing the required minimum—two or three square feet—and leaving one-half-inch holes for easy measuring of knots. If you think it was easy to get the boys to use those templates, think again. But after measuring several times and finding that a true one-half inch diameter hole would measure as accurately as a ruler, and that the template actually enclosed slightly over two or three square feet, and going to higher authority in Chicago, they finally said "OK."

Once a whole carload of Navy material was rejected because the inspector suddenly decided all the screw slots in boxes had to line up the same way. A hurried reading of the specs revealed nothing like that. The inspector thought we ought to be proud of a good, neat job, and wouldn't budge. I called headquarters. Headquarters called Chicago, and within a day the decision came back that we didn't have to line up the screws. The inspector started to remain true to his promise, that he would pass nothing if I went over his head. But thanks to a mustang in one of the offices, the inspector was transferred. Usually we didn't win that easily—if we won at all.

In all fairness, those were rough days, especially on the small Armed Services staffs which were called upon to handle work volumes beyond their capacities. From all I hear, things are quite different now with most Government procurement, thanks in no small part to modern methods, and especially the computer.

Another boy who gave us a hard time was a green Navy inspector who took the Navy parts processing specifications quite literally and insisted that we pack all of the complete magnetos, carburetors, and similar hollow parts with a hard grease. Such parts would surely get there rust-free—but can you imagine the amount of cursing that would arise on some beach when someone would find a badly needed carburetor or magneto solidly packed with hard grease? Or a water pipe? Or a gas line or a cylinder, water jackets and all? It took some hair pulling, but we got over that one also.

Johnson Motors built thousands of POLR outboards for a number of Government branches, also a great number of the famous P-500 pumpers, powered with an Evinrude 50 HP motor. This great pumper, which could deliver better than 675 gallons per minute, is credited with saving a number of ships in bad fire situations. In one instance a crippled destroyer was kept afloat for 39 hours by the continuous operation of three P-500 pumpers after it had been badly hulled by enemy fire. It finally



*Johnson P-500 pumpers powering mop-up hoses after a crash landing on the deck of a carrier in the Pacific theater. photo courtesy Johnson Motors*

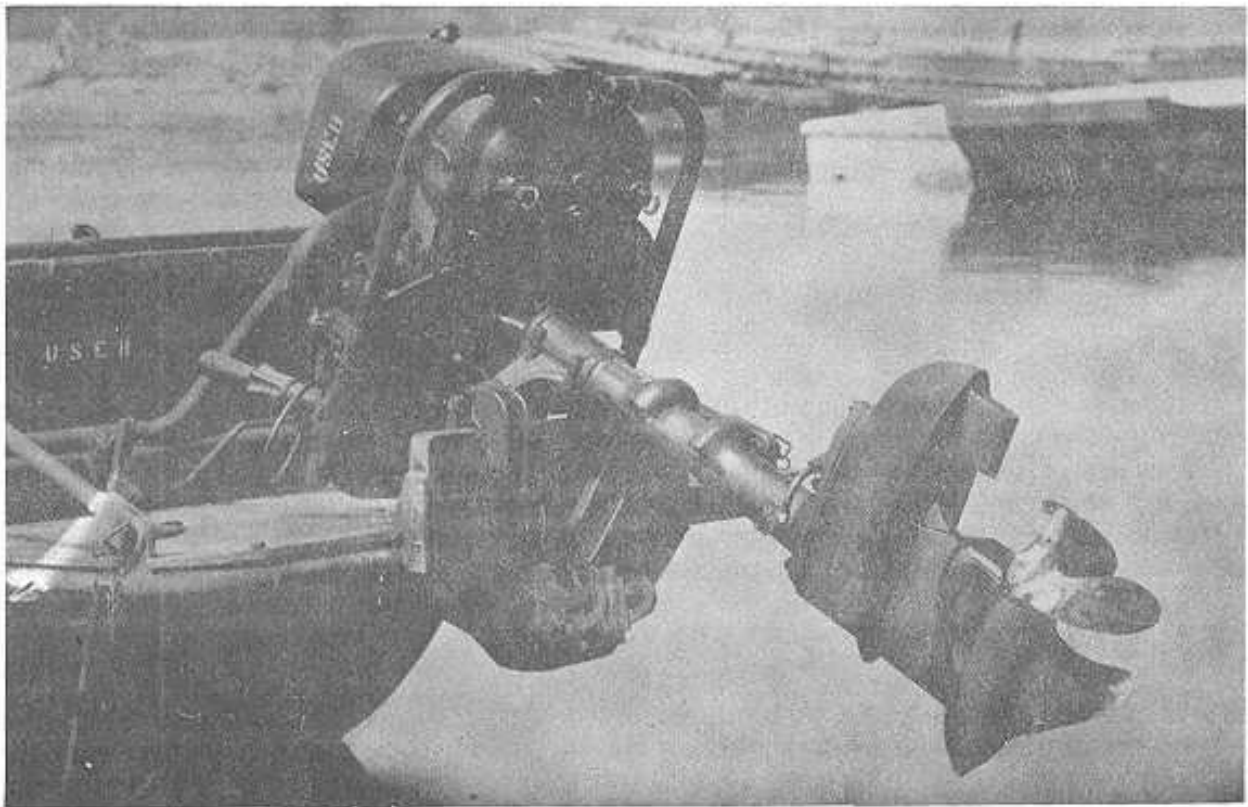
made its way to a safe harbor some 150 miles from the scene of action. In addition, Johnson built thousands of engines for the Handy Billy, a smaller portable fire pumper built by Pacific Marine Supply for the military.

Johnson also built oxygen regulators; a variety of aircraft instruments such as tachometers, altimeters, pressure indicators, Bendix aircraft starter parts and propeller pitch control mechanisms; plus many other small items, such as an alcohol de-icer tank for Brewster Aircraft.

Johnson had its share of humorous happenings also. Clay Conorer, Johnson Division Manager, writes:

*I recall S. F. Briggs and J. G. Rayniak escorting a "bigwig" through the factory while we were in the midst of building some of these complicated aircraft machines. The visitor asked the natural question of how it worked. Mr. Rayniak proceeded to be very specific and to go into great detail as to the workings of this machine. The visitor was obviously puzzled and did not comprehend what he was being told. [Author's note: J. G. Rayniak, who later became President and Vice Chairman of Outboard Marine Corporation, was a master tool maker and at that time was Works Manager at Johnson. As a master mechanic, the most complicated mechanical device was as simple to him as 2 times 2 equals 4, and he sometimes forgot that the average man might not have a basis for mechanical understanding.] At this point, S. F. Briggs, the Board Chairman of Outboard Marine and himself a graduate engineer, recognized the visitor's puzzlement, and took up the explanation with terms such as "this little thingamajig goes inside the whatchamacallit and then flops over to this side when it has been working right." The visitor smiled and with a great deal of satisfaction said, "Now I understand."*

*Another time, we had an Army inspector who also had an assignment at the Johns-Manville plant, which is approximately one mile north of our plant. As a gag, someone told him he had a phone call from Manville and they wanted him to come over there immediately, as his asbestos was on fire. He left his office in our plant in great haste, so the practical joker called our receptionist and asked her to stop him in order to avoid his being embarrassed upon arrival at Manville. When our receptionist tried to stop him, he told her he was in a great hurry because his asbestos was on fire at Manville. Our plant guard was also unsuccessful in trying to stop him. The rest of the story is anticlimactic, as he wouldn't speak to some of our people for awhile.*



*The 22 HP Johnson outboard developed during World War II for use on small landing craft, assault boats, and bridge pontoons. photo courtesy Johnson Motors*

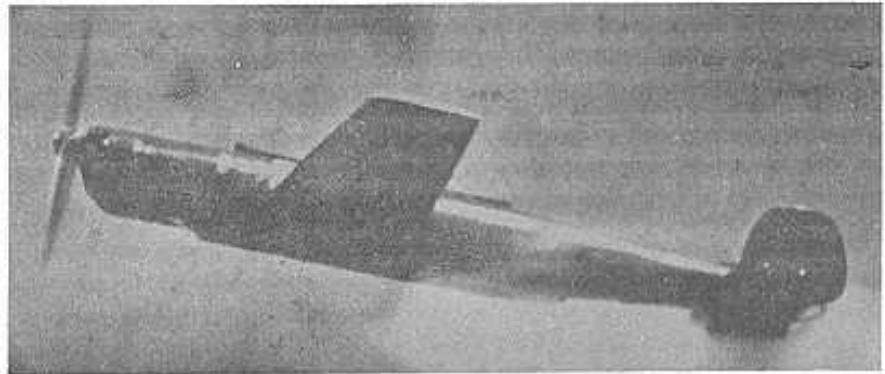


Milt Suckow, now Vice-President and Plant Manager for the Chrysler outboard plant at Hartford, is responsible for the following word about West Bend and the Kissel activities during WW II.

The Kissel Company at Hartford, Wisconsin, makers of the famous Kissel Kar, had been making Waterwitch outboards for Sears before WW II. During the War they made a number of torpedo components for the U. S. Navy, as well as some small lots of the smaller outboards for various departments.

West Bend Aluminum Company took over the Kissel plant on March 1, 1944. West Bend had been making 20 mm shells, as well as mess kits and other allied items for the Government. After taking over the Kissel plant, West Bend used the additional space to build 14" and 16" powder tanks and rocket containers in the 5" and 6" sizes for the Navy. Later, West Bend produced the Zuni rocket launcher and the BLU-3 bomblet at Hartford for the Defense Department.

Armand A. Hauser, now Vice-President for Customer and Industry Affairs of Mercury Marine Division, was active under Carl Kiekhaefer, the vigorous and successful founder of Kiekhaefer Corporation, which made Mercury Outboards before WW II. He writes that during the War their company made chain saw engines, target drone engines, and generator sets in large volume for the various Government branches. All told, Mercury engines were listed in 52 different basic military applications, Mercury participated in three "E" awards.



*A 35 HP opposed twin Mercury air-cooled engine powers this radio-controlled target drone plane used to train anti-aircraft gunners.  
photo by Mercury Marine*

Although not as spectacular as the engine for the target drone shown here, the chain saw combination of the Henry Disston saw unit and the Mercury engine did yeoman service in clearing jungles and supplying on-the-spot lumber required for bridges, bulkheads, and the like where speedy results were demanded.



*Mercury built thousands of chain saws used by the Corps of Engineers all around the world in World War II. The engine was a 6 HP alternate-firing air-cooled twin. photo courtesy Mercury Marine*

Wiley Spurgeon, Jr., once President of Muncie Gear Works of Muncie, Indiana, before the company was sold to the Applied Devices Corporation in 1969, tells that during WW II, Muncie turned out 37 mm gun carriages, numerous aircraft parts, rocket components, and an outboard drive for barges.

In all, Evinrude produced and shipped quite a few thousand Storm Boat Motors. They saw service in all theaters, but principally in Europe. Most of those left unused in warehouses were sold as Government surplus following the War. A lot of them, especially in the far-off bases, just evaporated, a procedure which any sergeant or scrounger can explain. Since the BiPod bracket could be fitted to few boats, we got a lot of orders for ordinary 50 hp or 4-60 stern brackets—some of them from some quite out-of-the-way places—like Kwajalein.

Besides outboards of all sizes, Evinrude made a wide variety of items for the military—machine gun parts, manifold pressure regulators, super charger regulators, dozens of small aircraft components, radio direction finder loops. In the course of so doing the company earned the “E” award, as well as participating in awards to several of the firms which we supplied with War parts.

The post-War demand for motors of any kind or shape was tremendous. If it even looked like it would run, any ten-year-old outboard commanded a substantial percentage of its original list price.

Feeling that the Storm Boat and other outboards made by us for WW II use would be sold as surplus, we made inquiries about the possibility of buying back surplus engines. We were bureaucratically put off, and suddenly here were the surplus advertisements. Had we had the chance, I think we would have offered more than was asked for the motors. The smart money snapped up the surplus outboards and undoubtedly made huge profits.

After WW II, racing outboards were just as scarce as any other motor, so the racing boys bought up what they could get in War surplus Storm Boat Motors and did what they could to tune them for racing. They also bought surplus Johnson P-500 pumpers and took out the powerhead. The Pumper powerhead was generally conceded to be superior to the Storm Boat engine for racing. I won't try to say why, but the shorter rods, slightly higher compression, and carburetion had something to do with it. There was (and still is) much disagreement on this subject.

At Evinrude, the end of the War with its attendant cancellation of orders found us with a large supply of parts from the largest Storm Boat Motor order received to that date as well as from unfilled orders for Light Fours and Zephyrs. The Storm Boat Motor parts were speedily built into motors with very few changes, and these motors revived the 1931 model name of Big Four. The post-War Big Four was a real heavy-duty motor—reliable, durable, but not as fast as its pre-War counterpart. It was not overly popular, as it was available only in rope starting and was still too hard to handle for the average person. However, we sold all we cared to build without trouble. The Lightfours and Zephyrs were easily converted to standard models and went out as fast as they came off the line.

*Now have in stock new pistons for Elto Speedsters, Hi-Speed Speedsters (high dome type), '28 Quads, and 2½" bore Rudder Twins. These aluminum, cam ground, two ring pistons are of highest quality. Come complete with new rings and wrist pin for \$25 each. Boring of cylinder is \$10 per hole. Bill Salisbury*

# DECALS

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For Johnson "Sea-Horse 32," fits Models V-65, 70; VR's and VE's. For Johnson "Sea-Horse 25," fits all Giant Twins.	\$ <u>10.00 each</u>	Order from: John C. Harrison 1000 Northwest 54 Street Miami, FL 33127
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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

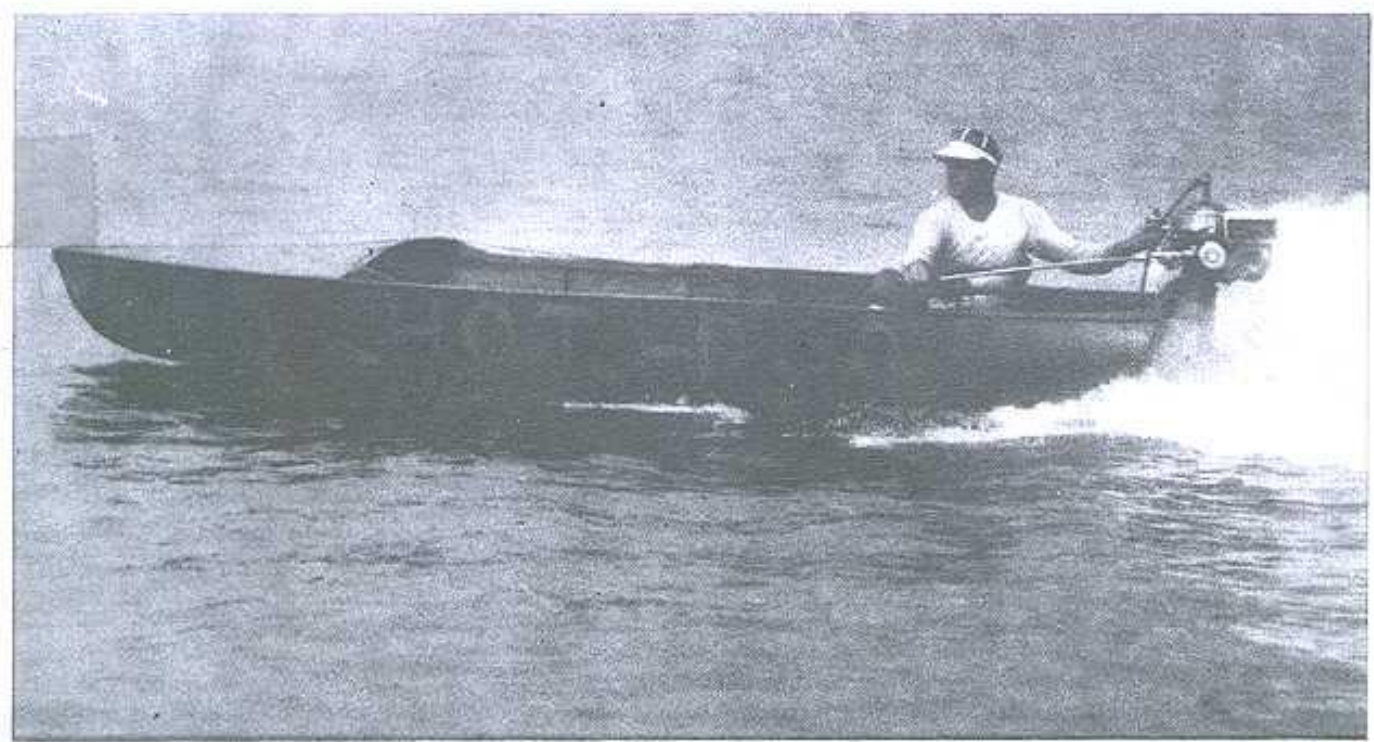




# The Antique Outboard Motor Club Inc.



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



*Dick Upsall, Sr. in a racing canoe, powered by a 1920 Johnson KR-40.*

*Front and back cover photos courtesy Dick Upsall, Jr., submitted by Jim Caxon.*

# AOMCI 11<sup>TH</sup> YEAR