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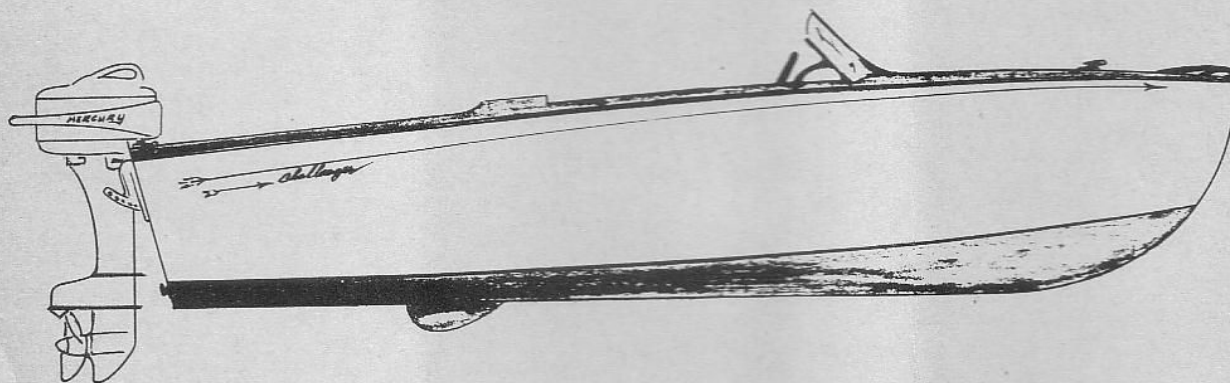
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AB RUNABOUT is 10' 5" long, 4' 4" wide, and weighs approximately 105 lbs. for Class A, or 140 lbs. for Class B. Seats 4 persons. Recommended for motors up to 20 h.p. For competitive racing under A.P.B.A. rules the engine must be no more than 15 cubic inch displacement for A, or no more than 20 cubic inch displacement for B. Speed up to 43 m.p.h. with 7.5 h.p., and up to 49 m.p.h. with 10 h.p. **Price \$10.00 per set**

CD RUNABOUT is 13' 3" long, 4' 10" wide, and weighs approximately 210 lbs. for C, or 280 lbs. for D. Seats 5 persons. Recommended for motors from 10 to 25 h.p. For competitive racing under A.P.B.A. rules the engine must be no more than 30 cubic inch displacement for C, or no more than 40 cubic inches for D. Speed up to 42 m.p.h. with 22 h.p., and up to 59 m.p.h. with 25 h.p. **Price \$10.00 per set**

M 3-POINT HYDRO is 7' 6" long, 3' 9" wide, and weighs approximately 75 lbs. Recommended for motors of about 5 h.p. For competitive racing under A.P.B.A. rules, the engine must be under 7.5 cubic inch displacement. Speed up to 25 m.p.h. with 5 h.p. motor. **Price \$10.00 per set**

AB 3-POINT HYDRO is 10' long and 4' 7" wide, and weighs approximately 100 lbs. Recommended for motors up to 16 h.p. For competitive racing under A.P.B.A. rules, the engine must be no more than 15 cubic inch displacement for A, and no more than 20 cubic inch displacement for B. Speed up to 48 m.p.h. with 7.5 h.p., and up to 53 m.p.h. with 10 h.p. motor. **Price \$10.00 per set**

CDF 3-POINT HYDRO is 12' long, 5' wide, and weighs approximately 150 lbs. Recommended for motors from 16 to 25 h.p. For competitive racing under A.P.B.A. rules, the engine must be no more than 30 cubic inch displacement for C, no more than 40 cubic inch displacement for D, and no more than 60 cubic inch displacement for F. Speed up to 69 m.p.h. with 25 h.p. motor. **Price \$10.00 per set**

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... IN THE ROOSTERTAIL ...

Big news from Seattle for the owners of Inboard Hydros and Runabouts. Owners interested in attending the Seafair and Gold Cup programs at Seattle this summer will welcome the news that the Seafair Regatta Committee is working on important changes in the schedule and facilities for the limited inboard class events. The new plan will place more emphasis on the inboard part of the Seafair program as well as to make the event more attractive to owners and drivers. Following is a brief outline of the proposed plan:

1. Move the limited class inboard events from the small course on Green Lake to a new 2½-miler on Lake Washington. This is terrific water for records as evidenced by mile-trial performances last year and such a course should be as fast as any in the world. Records or no, this 2½-miler will permit the inboards to go all out and the racing should be more than spectacular, a real thrill for the driver and a chance to prove what's in the outfit and whether it will go the maximum route under pressure.

2. New safety precautions for the promptest possible rescue of any driver involved in an accident and improved procedures for salvage of any boat that should happen to sink. The Committee is investigating the possibility of equipping each boat with a dye marker which will release if submerged.

3. Improved pit facilities for the Lake Washington Course.

4. Scheduling of E Racing Runabouts and possibly Cracker Boxes in addition to the full racing hydroplane schedule providing the runabout classes can guarantee a minimum entry of 6 boats per class.

5. Relocation of the mile-trial course to an area adjacent to the Gold Cup Course. This would be a better location for all of the small boats right adjacent to the pits and would permit smoother and faster conduct of the trials from the Committee standpoint.

6. Schedule a full day of limited inboard racing for Saturday, August 6th. The Gold Cup will be run on

the 7th.

7. Change the qualifying procedure for the Seafair Trophy Race. The eligible boats for this race will be those 16 inboards which turn in the fastest individual heat times in the limited inboard competition.

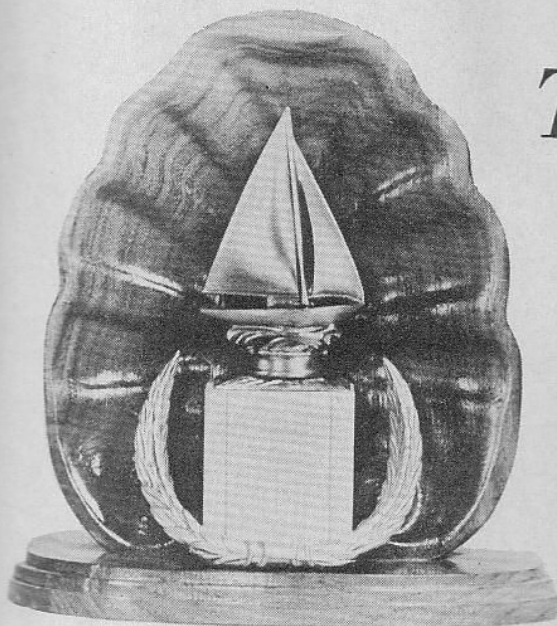
Merrill reports that Seven Litre owners in the East are much interested in attending this year and the Large E Racing Runabout fleet in the West are more than enthusiastic. The Gold Cup entry will be the largest and most formidable in the long history of the class. When you tie in the sizable outboard schedule on Seattle's Green Lake it is evident that this year's Gold Cup and Seafair Regatta schedule should provide the greatest racing of the year. A must for racing followers and enthusiasts who appreciate the tops in competition.

The world's longest outboard marathon — 1,050 miles of it — along the Mississippi River from New Orleans, La., to Alton, Ill., is scheduled to start on July 1st. This is the third annual

(Continued on Page 37)

Kaag

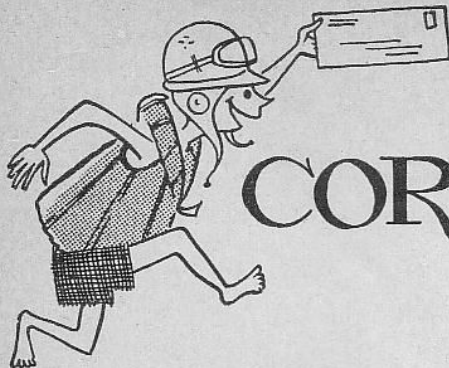
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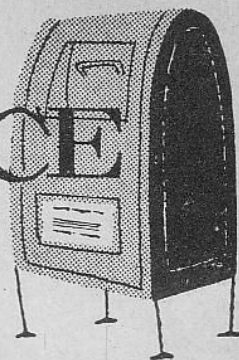
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CORRESPONDENCE



BACK YARD BUILDER

When Clyde Randall was measuring sponson depths and found that the fast boats in the same class varied 1 3/4" in depth, he forgot to measure the strut depth which governs the sponson depth on a successful boat. If the strut depth is deep, the sponsons have to be deep so that the boat can run on a level keel without dragging the strut. Many well designed hulls have been a flop because owners did not install the correct strut. In some cases designers have furnished catalog numbers for struts instead of giving the angle and depth so that the builder could procure the correct substitute if the specified strut was not available. While on the subject, many record boats have been "backyard" jobs, many as long as one to five years in getting up to the combination that brings record performance.

Hi Johnson,
Newport Beach, Calif.

Could be—seems like that figures.
—Ed.

WE CALL IT KILROY

I have completed a Jersey Speed Skiff from the plans in your July 1953 issue and I am pleased with it. I am waiting now for the plans of that flashy inboard that was on the cover of your June '53 issue.

V. F. Hart,
Matahini, New Zealand.

The boat you refer to is a terrific item — fast pleasure boat — fine skitow and a real performer in all kinds of water. We call it Kilroy—designed by Dair N. Long, the famous naval architect who designed the Western Fairliner and Harco Cruisers as well as the beautiful 63- and 85-foot Aircraft Rescue Boats for Uncle Sam during World War II. Building plans will appear in *Speed and Spray* just as soon as we complete the present continued article on *Water Hazard*.
—Ed.

CRACKER BOXES

The boats on the cover of your Vol-um I, No. 11 issue were similar in design to a boat I wish to construct. I'm at a loss, for I can't obtain plans or find any technical information regarding the construction of such a boat. This type of boat was used extensively as a sports boat for water skiing, especially at Lake Elsinore and Big Bear Lake, and was usually constructed of 1/2-inch plywood, powered with a Ford V-8 or Mercury engine and often nicknamed a "cracker box type." If possible I would like to obtain plans, or a kit or both, if available.

Frank P. Conte, PhD,
Oak Ridge, Tenn.

You described the boat type very well. We aim to oblige. You will find quite a bit of information on the Cracker Boxes in the article in this issue, written by one of the men who started the class as a racing boat. They are still very popular as ski boats. As stated in the article plans are available from the APBA, 700 Canton Ave., Detroit, Mich. I suggest you also contact Fred Wickens (ad in this issue) who built the present record holder and champion and many Cracker Box Ski Boats.—Ed.

ENDURANCE RECORDS

Just learned of Harry Greening's long distance records established in 1925 and 1929 in his Rainbow boats. These no doubt are the same type that Ab Jenkins holds on land. How about a complete story. Perhaps we can pass an idea along get these records for the U.S.A.

Thomas F. Swearengen,
T/Sgt., USMC.

Florida just tried the endurance caper—a 9-hour run. We will have all the dope in the next issue.—Ed.

THE MIGHTY 4-60s

With many of the D Stock Hydro boys converting to full racing rigs, the 4-60 owners have to do something to liven up their motors. How about some pointers and suggestions.

Bud Wiget seems to have the answers. Maybe we can get him to do a story.—Ed.

STOCK RACING?

Have been watching *Speed and Spray* for an article on setting up a DU Merc for Stock Racing. Would like information on points, plugs, working over reed tops, heavy duty reeds, what balancing gives and other technical information.

James Coutts, Jr., III
Niagara Falls, N.Y.

Fastest DU I ever saw was "right out of the box." Check over the Stock Racing Rules and then try the manufacturer's manual. You can heat up a DU Merc but then you are no longer in Stock Racing. We will have an article on this subject very soon.
—Ed.

FULL RACE SKI BOAT

A friend of mine has an outboard runabout of dubious origin powered with a 22-hp Evinrude which we use for water skiing. But of course we are not satisfied and would like to build a full-race ski boat such as the one you presented in your August 1953 issue. Where can I find out about this make of boat?

Arthur E. Bradford,
East Baintree, Mass.

The boat you mention was designed and built by Joe Mandella who specializes in fast ski boats and racing runabouts. Address: 8430 Luxor St., Downey, Calif.

SCREAMING PLYMOUTH

I am interested in building up the Plymouth engine described in the Screaming Plymouth article that you ran last May. I would like some more information as to the machining of excess material from exhaust and in-

(Continued on Page 37)

Editorials

Speed AND Spray

THE INTERNATIONAL MAGAZINE OF MOTORBOATING

FROM THE PUBLISHER

With this issue SPEED AND SPRAY resumes regular monthly publication, after an absence of 18 months. During this time, the magazine has undergone a complete reorganization. After a careful study of the growing interest in the sport of powerboating and allied water sports, certain basic changes have been made in the magazine to assure full coverage of all powerboating, from the smallest craft up to the small cruiser class. To illustrate the growth of boating interest, here are some of our findings: Since World War II, boat ownership in the United States has increased each year from 10% to 25%. In 1954, figures show four million boat owners spending over ONE BILLION DOLLARS! There are now approximately 5,250,000 pleasure boats in use on all waters in the United States alone, and a 14% increase is predicted for 1955!

These amazing facts convinced us of the need for an expansion of the entire magazine to cover the many phases of this national enthusiasm.

We believe our readers will find that the changes have resulted in a broader and more interesting coverage of the field. Additional features have been added, and will continue to be added in the future to keep pace with new and unusual developments. We will feature authoritative articles on water skiing, pleasure boating, how-to-do-it and do-it-yourself, in addition to our worldwide coverage of boat racing. These features, and our worldwide photo coverage, will continue to be expanded.

SPEED AND SPRAY is now owned and published by C-B Publications, an organization staffed by some of the outstanding people in the powerboating field. Mr. Kent Hitchcock, Editor of the new SPEED AND SPRAY, has had over 20 years experience in boating publications. His staff of 36 writers and photographers the world over now submit material for SPEED AND SPRAY, giving us the most thorough, up-to-the-minute information obtainable for our readers. The fresh and alert appearance of the magazine is the work of Art Director William Coppock who, with his staff, have revised the cover design and the layout of the entire publication. These men, and all of us connected with the new SPEED AND SPRAY, have one aim in producing this monthly magazine, to provide our readers with the most complete and informative magazine in the motorboating and affiliated water sports field.

Our sincere appreciation is extended to the thousands of subscribers who have awaited the resumption of publication. We assure them that their patience will be rewarded by an even more interesting and complete magazine.

April 1955

VOL. I, No. 12

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SPEED AND SPRAY MAGAZINE

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Editor's Note: This regular monthly feature will be kept up-to-date to the best of our ability. The calendar as it appears in this issue is a compilation of dates furnished through the courtesy of the APBA and our many racing organizations. It is our purpose to keep the public supplied with accurate advance race information. We urge the officers of all racing organizations to advise us promptly of additional dates scheduled or of any changes or errors in this calendar. A complete and accurate calendar in the hands of the followers of the sport is our goal.

CALENDAR CODE

I—Inboard
O—Outboard
SO—Stock Outboard

1955 REGATTA DATES

Region 1

5/30 Middletown, Conn SO
6/19 Southwick, Mass SO
6/26 Westerly, R.I. SO
7/4 New Bedford, Mass. SO

7/10 Glastonbury, Conn. SO (Regionals)

7/17 Mystic, Conn. SO
7/31 Westerly, R.I. SO
8/7 Hartford, Conn. SO
8/14 Marion, Mass. SO
8/21 Northampton, Mass SO
8/28 Westerly, R.I. SO
9/4 W. Warwick, R.I. SO
9/18 Middlebury, Conn. SO
9/25 Danbury, Conn. SO

Region 3

5/30 Ocean City, N.J. I
(Fite Memorial)
7/10 Long Branch, N.J. I
7/17 Millsboro, Del. I-O
7/24 Keyport, N.J. O-SO
8/7 Pleasantville, N.J. I
9/4 Salem, N.J. I
9/5 Millville, N.J. I

Region 5

3/20 Clearwater, Fla. O
3/27 Miami, Fla. SO
4/24 Miami, Fla. SO
5/22 Miami, Fla. SO
6/5 Miami, Fla. SO
6/9-11 Pensacola, Fla. I
(Five Flags)
7/17 Miami, Fla. SO
9/11 Miami, Fla. SO
10/9 Miami, Fla. SO
11/20 Miami, Fla. SO

Region 6

6/26 Dayton, O. SO
7/17 St. Clair, Mich. I
8/7 Dayton, O. I
8/27 Detroit, Mich. I
(Silver Cup)

Region 7

7/4 Fond duLac, Wis. O-SO

Region 9

5/28-29 Baton Rouge, La. I-O-SO
6/11-12 New Orleans, La. I
(Pan American)
7/10 Lafitte, La. I

Region 10

4/24 Seattle, Wash. O-SO
Sammamish Slough Race
Wenatchee, Wash. I-O-SO
5/29 Lake Coeur d'Alene, Ida. I-O-SO
5/30 Green Lake, Seattle, Wash. I
5/30 Shelley Sink, Spokane, Wash. O-SO
6/5 Silver Lake, Wash. O-SO
6/26 Walla Walla, Wash. O-SO

7/3, 4 Devil's Lake, Ore. O-SO
7/3 Sandpoint, Ida. O-SO-I
7/4 Coeur d'Alene, Ida. O-SO-I

7/9, 10 Electric City, Wash. O-SO

7/17 Moses Lake, Wash. O-SO-I

7/24 Pasco, Wash. O-SO-I
7/30, 31 Oroville, Wash. O-SO-I

8/4-8 Seattle, Wash. O-SO-I
Gold Cup & Seafair (Mile Trials and Competition)

8/11, 12 Kelowna, B.C. SO-I
9/28-30 Devil's Lake, Ore. SO

Region 11

4/3 Jack London Square, Oakland SO
4/17 Nice, Clear Lake SO
4/17 Oroville O-BSHR
4/24 Oakland Airport Channel I*
4/24 Lake Merced, San Francisco SO-O
5/1 Turlock Reservoir, Modesto SO
5/8 Willows I*
5/15 Pittsburgh O-BSHR
5/22 Modesto I*
6/5 Friant Dam, Fresno I-O
6/12 Coyote Dam, Gilroy SO
6/19 Hawthorne or Lake Tahoe, Nev. O-BSHR
6/26 Strawberry Lake, Pinecrest I*

Lakeport SO (Regionals)

7/2 Lodi O-BSHR
7/4 Lake Merritt, Oakland I*
7/4 Mariposa Boat Club,

7/10	San Francisco	O-SO	6/18, 19	Long Beach Marine Stadium	O
7/17	Donner Lake	O-BSHR	6/19	Mission Bay, San Diego	I*
7/17	Nice, Clear Lake	SO	7/3	Cachuma Dam, Santa Barbara	SO
7/24	Reno, Nev.	O-BSHR	7/4	Cachuma Dam, Santa Barbara	O
	Lake Yosemite, Merced	I*	7/4	Long Beach Marine Stadium	I
	(B Racing Runabout Nationals requested)		7/17	Mission Bay, San Diego (Regionals)	SO
9/4	Healdsburg	O-BSHR	7/24	Long Beach Marine Stadium	O
9/5 or 11	Sacramento Fair Grounds	O-BSHR	8/21	Mission Bay, San Diego	O
9/17, 18	Soda Bay, Clear Lake	SO	8/21	Cachuma Dam, Santa Barbara	SO
	(Western Divisionals)		9/5	Long Beach Marine Stadium	I
9-18	Oakland Airport Channel	I*S	9-18	("48" Hydro Nationals requested)	
10/2	Rio Vista	O-BSHR	9/25	Bakersfield, Hart Memorial Park	SO
10/2	Sacramento	I*S	9/24-26	Mission Bay, San Diego	I*
10/23	Lake Merritt, Oakland	SO	9/24-26	Long Beach Marine Stadium (National Championships requested)	SO
11/6	Lake Merced, San Francisco	O-SO	9/24-26	Mission Bay, San Diego (National Championships requested)	O

Special notes for Region 11 schedule above: BSHR indicates B Stock Hydro and B Stock Runabout. * indicates that the 266 Class is not scheduled. S indicates these two dates may be swapped. All courses are in California except as noted.

Region 12

3/20	Puddingstone Dam, Pasadena	SO	10/9	Palmdale	O
4/3	Needles, Colorado River	SO	10/16	Parker Arizona, Colorado River	O
4/10	Hanson Dam, Burbank	SO	10/14-17	Salton Sea	IX
4/17	De Anza Cove, San Diego	O	10/30	Blythe, Colorado River	SO
4/17	Bakersfield, Hart Memorial Park	I	11/13	Cachuma Dam, Santa Barbara	SO
4/24	Lake Matilija, Ojai	O			
4/24	Cachuma Dam, Santa Barbara	SO			
5/1	Long Beach Marine Stadium	SO			
5/1	Parker, Arizona, Colorado River	I			
5/15	Bakersfield, Hart Memorial Park	SO			
5/22	Palmdale	O			
5/29	Needles, Colorado River	SO			
5/30	Long Beach Marine Stadium (Cracker Box Nationals requested)	I			
6/5	De Anza Cove, San Diego	SO			
6/12	Bakersfield, Hart Memorial Park	O			

Special notes for Region 12 schedule above: * indicates that B Racing Runabouts are not scheduled. X indicates that dates may be changed to 11/4-7. All courses are in California unless otherwise noted.

Region 14

5/21-22	Hickory, N.C.	I-O-SO
7/3	Salisbury, N.C.	O-SO
7/4	Greenville, S.C. (Regionals)	SO
8/14	Hickory, N.C.	SO

Region 15

5/29	Ft. Worth, Tex.	I
6/5	Port Arthur, Tex.	I

Region 16

5/22	Nampa, Ida.	I-O-SO
5/29	Salt Lake City, Utah	I-O-SO
5/30	Provo, Utah	I-O-SO
6/13	Sarasota, Wyo.	I-O-SO
7/3	Rupert, Ida. (O Regionals)	I-O-SO
7/24	Grand Lake, Colo.	I-SO
8/1	Denver, Colo. (SO Regionals)	I-SO
8/7	Buhl, Ida.	I-O-SO
8/28	Hot Springs, S.D. (I Regionals)	I-SO

Marathons

4/24	Sammamish Slough, Seattle, Wash.	28 miles
6/5	Hartford, Conn.	75 miles
6/12	Philadelphia, Pa.	96 miles
6/12	Alexandria Bay, N.Y.	60 miles
6/26	Winnebago Land, Neenah, Wis.	92 miles
7/1	Mississippi River, New Orleans to Alton, Ill.	1,050 miles
7/18	Augusta, Me.	65 miles
7/24	Pony Express, St. Joseph, Mo.	66 miles
8/4-7	Stockton to Reading, Calif.	315 miles
8/15	Granby, Colo.	50 miles
10/2	Colorado River, Needles, Calif.	115 miles

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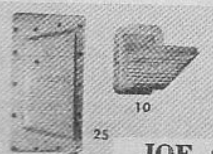
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They're off and Running



Major F. C. "Red" Thomas showing the "D's" the way around on the Colorado River at Blythe last season. A real competitor this Red—saw him drive eight heats in one afternoon. He herds the "stockers" with the same enthusiasm and abandon that he pours into flying one of "Uncle's" red hot jet jobs in Japan. Red just simply loves that stock boat racing.—Kent Hitchcock Photo

Good afternoon ladies and gentlemen. This is your announcer Jimmy Yoshida, calling the races for you today from the press box, high atop the grandstand at beautiful Imperial Marine Speedway in Nagasaki. From our vantage point we have an unsurpassed view of colorful Imperial Park. Our course is a crystal lake, bordered on one side by the spacious grandstands and on the other by the fabulous gardens of the park, a riot of spring color. No less colorful is the holiday attire of the better than 10,000 spectators who have gathered to view an outstanding program of championship motorboat racing and not just incidentally to wager a few yen on the outcome of the 12 races on today's card. The weather is ideal, warm and sunny—a typical spring day in beautiful Japan. Motors have been tuned up to peak performance for this important meeting and the list of drivers scheduled to race today includes the sectional champions from every part of Japan. The feature race of the day, the Imperial Sweepstakes, will decide the National Championship, and with the caliber of competition in the entry list it is probable that all track betting records will be shattered. This is the fourth and final day of the Spring Meeting here at Imperial Marine Speedway and they are lining up now for the first heat race for the hydros. Six are going and here is the order in which they drew their posi-

tions. Willie Moto from Tokio in *Geisha Girl* on the pole, Freddie Okagawa from Opalma in *Whirlbird*, Jimmy Nakamura from Nagoya in *Hot Shot*, Little Togo from Yokasuka in *Rising Sun*, Sonny Tichita from Osaka in *Tops*, and Ehorty Onokito from Yokohama in *Kyoto Kid* will be on the outside. Six of them going five laps for a purse of 1,000 yen. There goes the gong that signals the closing of the betting windows and I see by the totalizer board in the infield that the champion Willie Moto is the public favorite. The clock shows ten seconds to go and they are coming down for the start well in line. There goes the starting bomb and away they go at full bore all bunched up like bananas. Out of the first turn it's *Geisha Girl* a length in front and the rest too close to call . . . one lap to go and the leader takes the green flag—it's been a tight race all the way and one bobble would change the whole picture. Into the back stretch and it's *Geisha Girl* by one length, *Whirlbird*, *Tops* and *Hot Shot* are bow to bow a boat-length ahead of *Rising Sun* coming up fast on the inside—and *Kyoto Kid* in the middle of the course. Into the last turn it is still *Geisha Girl* by one length—but here is the break for he is sliding out and that slide may cost him the race for *Rising Sun* has sneaked through on the inside and it's a neck and neck race for the finish line. The

crowd is on its feet and screaming. It looks like a dead heat and there goes the photo sign up on the board. *Hot Shot* beat out the rest of the pack for the show money. This is an anxious moment for the crowd for the big part of the win pool is on the favorite Moto. The long-shot players will make a killing if Togo's number comes up—it will be a box-car payoff. The photo sign is down and there it is—Togo the winner. The time was 4 minutes flat and here are the mutuels: Togo paid 30,000 yen to win, 22,000 to place and 6,700 to show . . . etc. . . . and now a word from our sponsors.

Editor's Note—The above may not be exactly factual, but as we understand Japanese professional outboard racing it is not impossible that radio listeners in Japan might hear just such a recall of their races. Following is a letter from Major F. C. "Red" Thomas now on duty in Tokio addressed to Russ Hill, A.P.B.A. Stock Outboard Inspector. When Red isn't herding jets around the sky for Uncle Sam he is a busy lad in Stock Outboard Racing circles in Southern California. His first loves are his two D's, a hydro, and a runabout, but he does very well in the smaller classes too. At the Nationals at DePere, Wis., Red had just qualified for the finals in BU-Runabouts when a wire arrived. "Report back to base at once for over-

JAPAN

at NAGASAKI

"fix" trouble in the past, because the drivers are herded around together and are not allowed to talk to anyone except each other. They are housed in a hotel and allowed no phone calls and are not allowed to drink during the meeting.

At the races that I attended they used two different motors and two types of boats. Using both motors on both boats — this gave them four classes. The day that I went they ran three heats of each class—a total of twelve heats. The two types of boats were a single point hydro and a runabout. The hydro is about nine feet in length and built for strength. The bottom was half-inch mahogany with the rest just as strong. The runabouts looked very similar to a Speedliner B, except they are a bit cruder in workmanship. They have a half-inch bottom and a lot of "V" clear to the transom, so of course they won't go.

One of the motors is a rough copy of the Mercury B and is called a Yamato. The carb is different, and instead of casting the block in one piece, the head is removable. The magneto is altogether different. The magnetos are built into the flywheel and the coils are outside. They have

they all finished except the flips.

The other motor is a rotary valve opposed job similar to the Evinrude B. When they pull the head on that one the cylinder sleeve comes with it. I was a little startled by that. I didn't get a chance to see the mag on that one. It has a 13/19 lower unit while the Yamato has a 1/1. The opposed motor is called a Kinuta, and it won't go either. Incidentally all the props are identical too and the drivers are not allowed to touch them. Looking around I thought that even with my lack of knowledge I could put about one mph into most of the boats with a little file work on the prop. They were plenty rough, but no one seemed to care.

The drivers are damn good. They use the same type of start that we use in the States and they have it down to an art. They use a photo on the start to prove gun-jumping and the pictures are a revelation. They all hit the line right on the money and any driver ten feet away from the line at the gun is way behind. The course is very short with 300-meter straights and single-buoy turns which is the reason for all that "V" at the transom. They keep the prop kicked

seas duty." That was it — he didn't even get to run the finals. His friends in the United Speedboat Assn. hope to see him home again before too many moons. Here is Red's very interesting letter:

"Dear Russ:

Regardless of the work, I have had the time to get to one boat race. Things are a bit different here. I had a difficult time getting accurate information because no one around the race track spoke English that I could understand, but I'll pass on my understanding of the deal.

In the first place most of the races here are professional, in which the drivers are like the jockeys at the American horse races. They have a boat race meeting that runs for four or more days at a stretch, much like Del Mar. The boats and motors are all owned by the promoter of the races. In each heat all the boats and motors are identical, and the drivers draw to see which outfit they will run. The driver is not allowed to make any adjustments to the outfit other than to set the transom height and the kickout to suit himself. He does have to furnish the spark plugs.

They have parimutuels and the real sport of boat racing here is the betting on the outcome. The drivers come from all over Japan and travel from meeting to meeting, truly professional. Apparently they have had



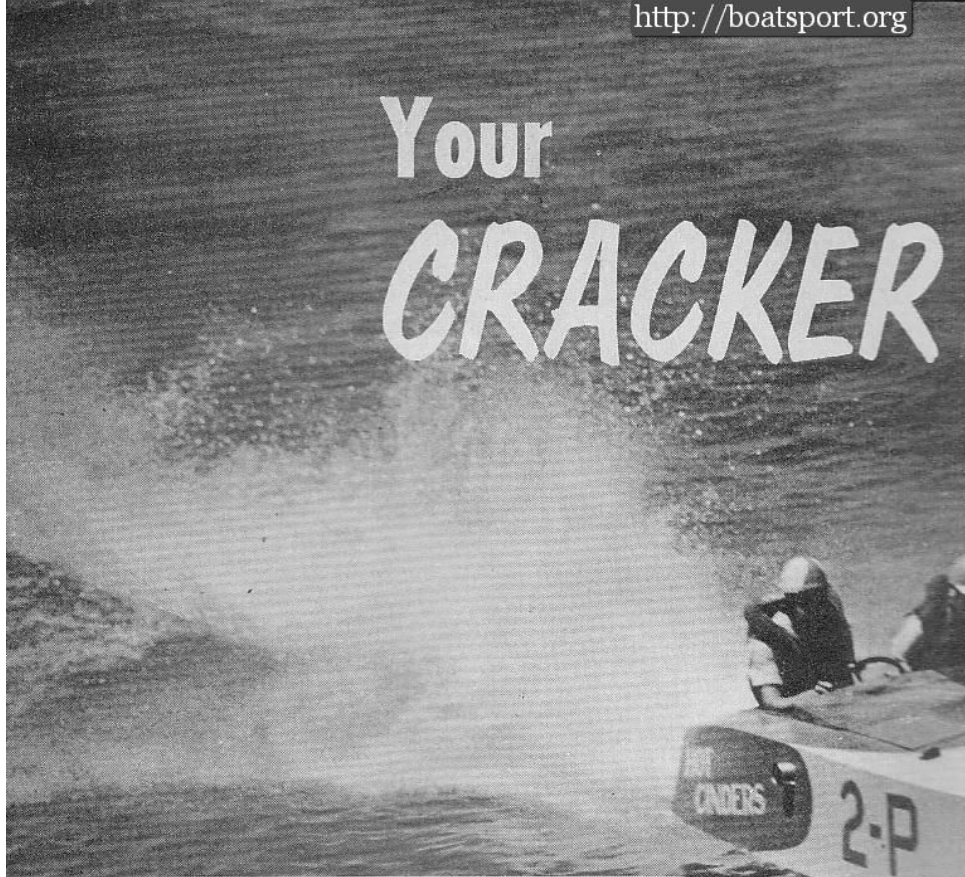
two coils and two sets of points, and they are accessible without pulling the flywheel. To get at them they just remove the tank and go to work. They have a disk for a rope starter on the top of the tank. It is a crude looking arrangement, but it works. In twelve heats of racing no one had motor trouble — everyone got started and

way under and rather low so they can get around about the way Warren Litten does it at home. Top speed is only about 35 mph so I don't know how the driving would be if they had some real speed, but from what I saw they could give most of us some lessons.

The course I visited here was much

(Continued on Page 35)

Your CRACKER BOX



how to make it go

By CLYDE RANDALL

Late in the 1952 season with the Mercury screaming a song of defiance, the Patterson boys were on the way to U. S. No. 1 when this photo was taken. In rough water here, "Cinders" is flying.

SO YOU want to know how to make your Cracker Box Go? Well pal, so do several hundred other guys. A converted hot-rodder asks the question, "Why doesn't my boat go, it has the hottest mill that I can put in it?" The answer, in one simple statement, is, you've got to be "all out." A hot mill isn't enough. You've got to think of everything. If you can think of anything that *might* make your outfit go a little faster, *do it!*

The Essentials

First of all, let's make a list of the "things" that you will need to get your outfit going.

1. Patience.
2. Dough (Loot, cabbage, or that green stuff will do).
3. A good reliable water speedometer.
4. A "full house" engine. (Heads, multiple carburation, racing camshaft, hot ignition or mag?)
5. A strong back.

Are you still with us? O.K. Let's put your outfit in the water just the way it is and, with the help of the aforementioned water speedometer, we will see what she'll do. If you have constructed your outfit exactly to the official APBA plans, with that full house engine of yours, she is

probably doing about 45 or, if you are lucky, 50 miles per hour. But wait a minute, the record is 72, and going up any minute. Now, don't get alarmed, let's take a look inside the hull. See any excess baggage? How about all of the scrap iron and boiler plate? Holy cow, we can't carry around half of Goldberg's junk yard and still hope to win races. For example, take a look at the photos of Bob Patterson's *Hot Cinders*. There's a good example of a home built boat that is really going. See the neat installation of the engine? O.K., let's go to work.

Nothing forward — Nothing but good solid construction.



Cut Out Some Weight

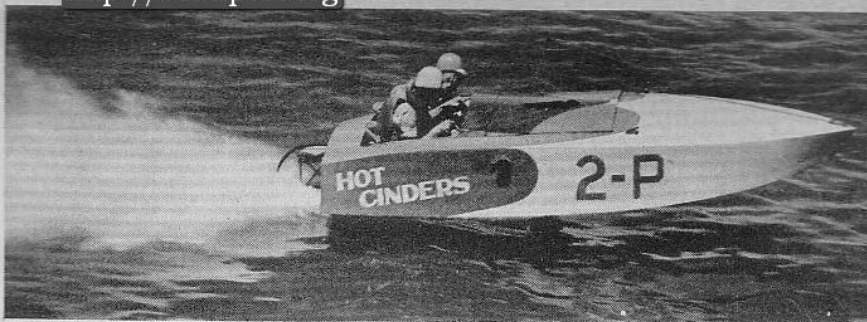
Using aluminum plate and angle instead of iron, we have already cut out quite a bit of weight, and now let's look around some more. Those exhaust pipes and cast iron manifolds are excess baggage too, so out they go, being replaced by short "stacks" out the side of the hull, or through the deck (however you prefer your noise). The floor boards and fancy upholstery job will be the next casualty on our list, and we replace them with a couple of aircraft type bucket seats. Well, now we are getting down to the essentials. See anything we have overlooked?

Let's take another look at Patterson's *Hot Cinders*. Hey, something new has been added. See the "in-and-out" drive coupling Bob has worked out? He is getting ready to rig up a spring starter that will do away with the battery and electric starter. That is about 75 lbs. that he will be able to take out as soon as he gets the new unit completed. There, is a lad that is on the ball. Doggone it, how can we hope to keep up with these "hot dogs" when they are always coming up with something new? Patience boy, patience, we will get to those little refinements later on. In the meantime, we have lots more work to do.

Weight Distribution

Did you notice, while we were looking at *Hot Cinders*, that Patterson had his weight as far back toward the rear of the boat as possible? Well, what part of your boat, in racing trim, weighs the most? Yes, you guessed it, the lard that you and your riding mechanic are sitting on! So, let's check on the location of your cockpit. Study for a moment the official plan and profile drawing and the rules. According to Rule 6, the cockpit must be between stations 9 to 12, but the plans show it between stations 9 and 11. Humm, let's get our old friend the saw down and move that cockpit back just as far as the rules allow, which puts it exactly 11 1/4 inches ahead of the transom, using the inch tolerance also allowed by the rules. Now, with the cockpit located between stations 10 to 12, we can move the engine back another frame, and we are in business. Oh, worried about shaft angle? Well, for every 1/4 miles an hour we lose in steepening the shaft angle, we gain five by getting the weight back. Believe me inches in weight mean speed.

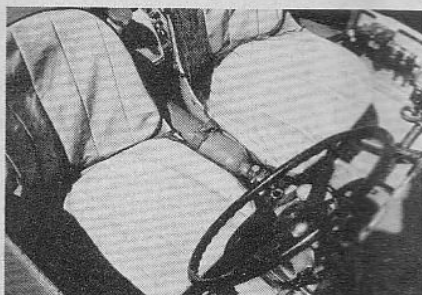
Contrary to popular belief, the Cracker Boxes are not a breed of ski-tow and racing boats confined to several sections of North America. Crackers are running in just about every part of the world and there are several large fleets in New Zealand and Australia. Many of these boats were built to a design which appeared in *Mechanix Illustrated* about four years ago.



Hot Cinders defies the statement that a racing boat gets tired after one or two seasons. In 1951 she won second high-scoring honors and the No. 2-P for the '52 season. Note how clean this outfit rides and also the position of the bucket seats commented on in the article.

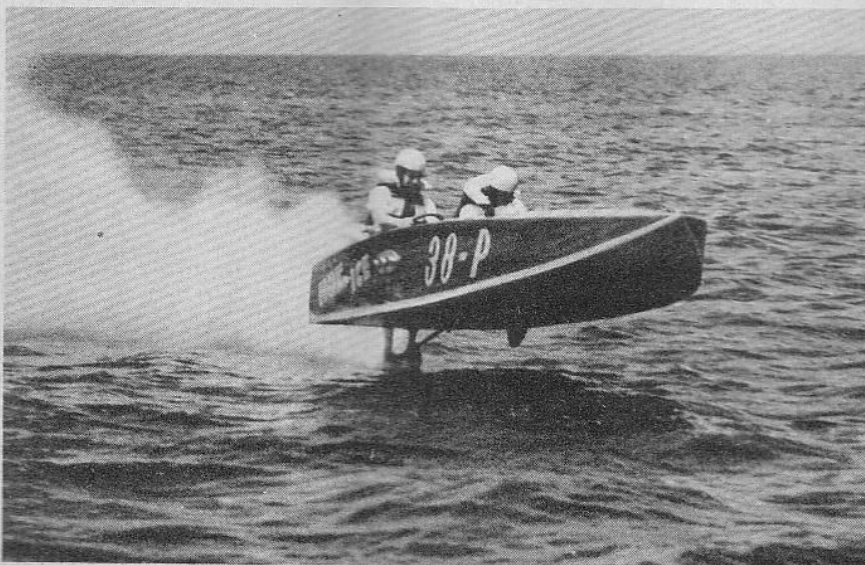


Coming up to the start. The Crackers never fail to turn out a good entry and to provide some of the flashiest racing in the runabout divisions.



Hot Cinders — Everything is functional, rugged, light weight.

Carl Maginn's Hot ice bouncing and prop riding in some sloppy going on Salton Sea. This rig now holds the National Championship, the 5-mile record at 65.693 mph and the 1-mile record at 75.386 mph.

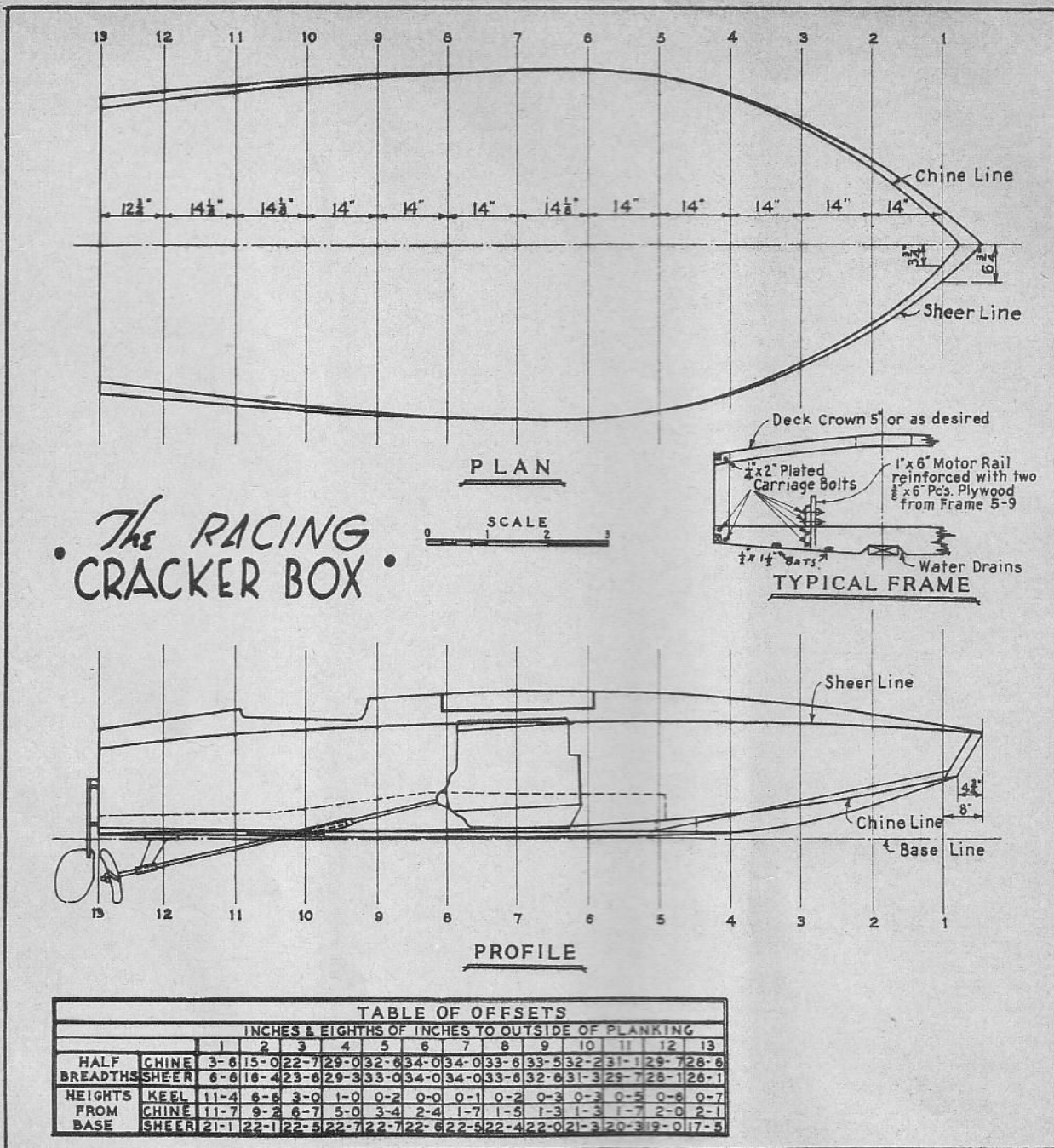


With a few modifications these boats will really go. The plan shows the motor too far forward. Move it back and take off the reduction-reverse gear and your outfit will start to go places. Here again we have a simple problem of weight distribution.

O.K. son, ready to try the outfit out? Wait a minute now. While we are at it, let's get that battery and gas tank mounted behind the seat. I know it's pretty hard to jam them in a place 11 1/4 inches wide, but believe me it can be done.

The Bottom

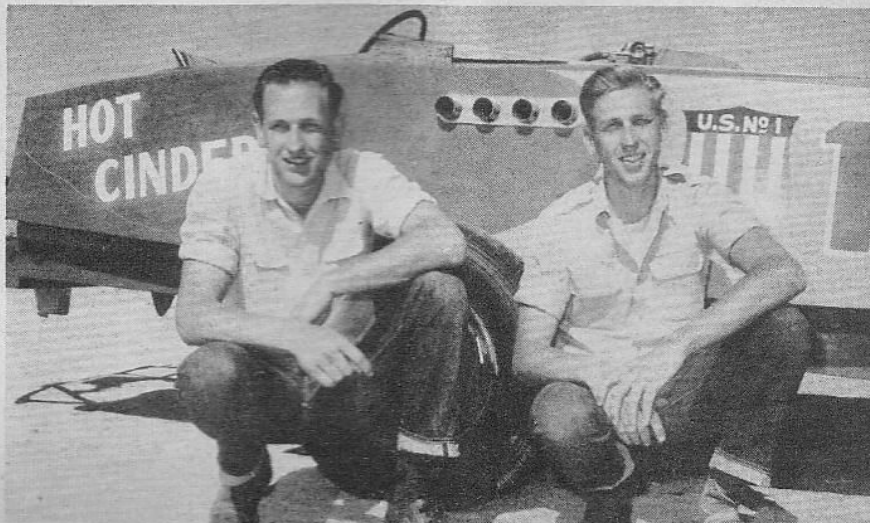
Now, let's try her out, and see what she will do. Hmm, goes quite a bit better doesn't it? But take a look at how the boat is riding. Still glued to the water? We can remedy that too! We have an inch tolerance to play with on the bottom, and believe me, sometimes even 1/8 of an inch will change the outfit until you think you are driving something else. So we must be very careful in our next move. Our first step is to get a portable sander and go to work. The riding characteristics of the Cracker Box can be changed simply by sanding a small amount off the bottom at the transom, so let's draw a line across the bottom of the boat about 5 inches ahead of the transom. Next, we sand off a wedge shaped portion, tapering from 1/8 of an inch at the transom to nothing at the line we have drawn. In other words, we are adding a little last minute rocker to the bottom. This tends to free the hull from the water. The next step is to try the boat out to see how much good we have accomplished.



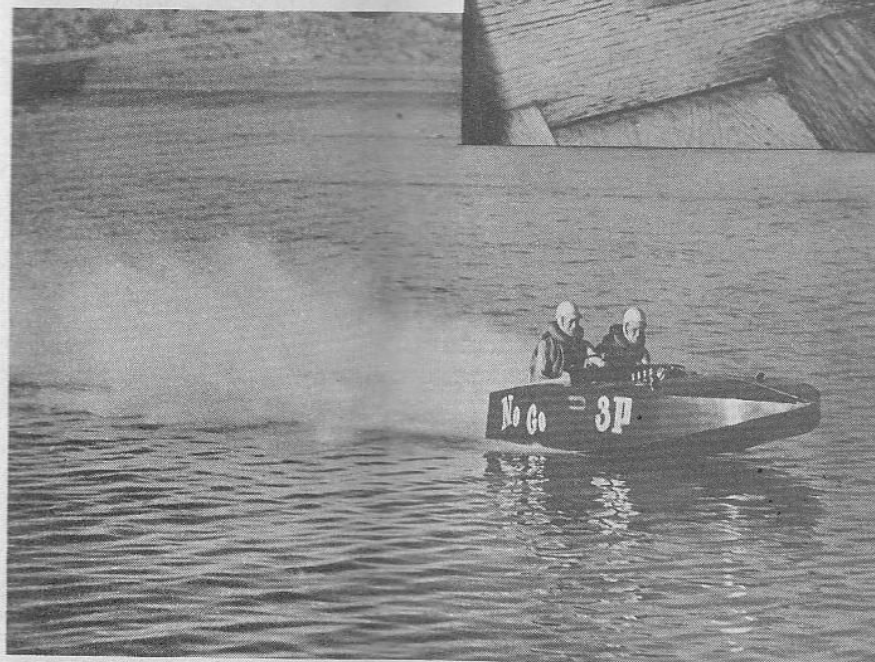
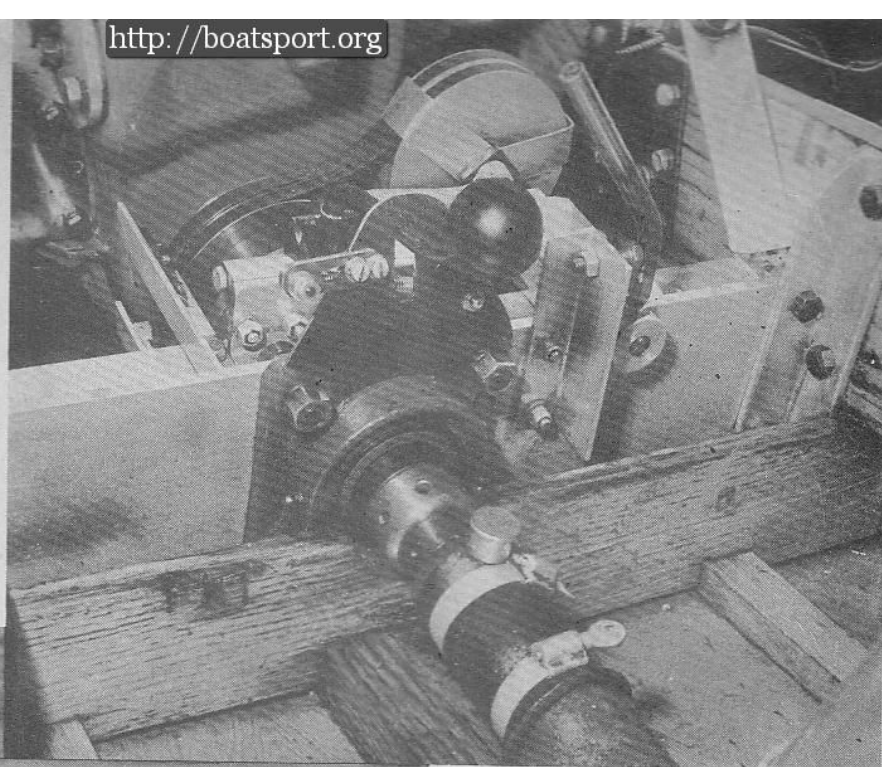
Trial and Error

From now on, it will be all trial and error, until you have the boat riding exactly the way you desire. If you think the outfit is still too tame, you can sand a little off the bottom, starting about a foot forward of the transom, and on the other hand, if the boat rides like a leaping gazelle, you should add wedge shaped shingles until you have reached a happy medium. The main thing to watch, of course, is the speedometer, because we are after speed, and you can't have a smooth ride and get ultimate in speed out of the outfit at the same time.

The Patterson Brothers—Bob on the left does the driving. They wound up in No. 2 spot again in 1954, but will be out again in 1955 after the U.S. No. 1 that they carried two years ago.



The Patterson boys even experimented with a light weight in-and-out clutch of unusual design.



Paul Pierce's No Go blistering the Salton Sea trap for a new 1-mile record in October 1954. Maginn wiped out Pierce's mark before the meet was over. The canny Pierce has worked out a new hush-hush innovation that could just put him on top of the pack this year.

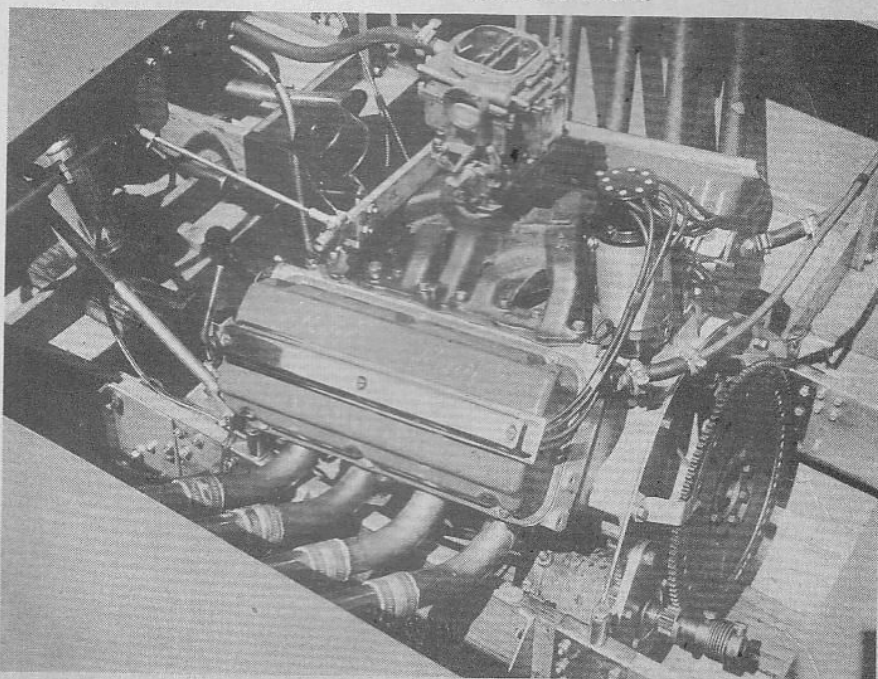
Hot Cinders' Dodge red ram after the last National Championship heat which they won. Notice the lack of "garbage"—no unnecessary wiring and tubing, and clean as a whistle.

The Prop

Now that we have the outfit riding the way we want, it's time to work out a few of those refinements we were talking about before. It's time to start trying out different propellers, always keeping your eye glued on the speedometer. Sometimes you think you are really going (from the sound of the engine), but the speedometer tells the story. Most of the fellows racing have tried many different propellers before they arrived at a decision as to which one was the best. A good prop can add 4 or 5 miles an hour to your outfit, so you can see how important this step can be. Hi Johnson manufactures one of the best propellers you can get, but don't buy one prop and figure "that's it" . . . try them all!

Anything Forward?

Let's take another look at your outfit. Did you notice in the picture of *Hot Cinders* that the engine is as far toward the rear of the boat as possible, and there is absolutely nothing forward of it? Is there anything at all in your boat forward of the engine? If so, let's move it back. Some of



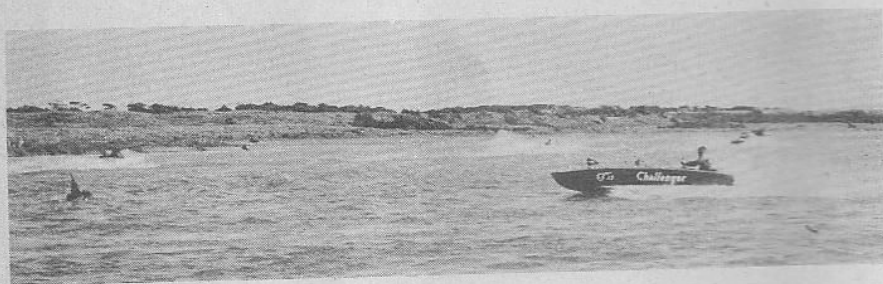
Crackers Down Under



Finishing one-two in the Farewell Handicap are L. Kean's "Atom V" which is Chrysler powered, and G. Morrison's "Little Chief," powered by Studebaker. It is interesting to note that the Crackerboxes "Down Under" are powered with a variety of auto motors.—Alan Pedlar Photo.



This is the pit area of the Southland Power Boat Club on the Oreti River, South Island—New Zealand. Here is the largest concentration of Crackerbox Class Runabouts away from California. Seven raced in this regatta and six are shown in this Alan Pedlar photo.



The flatlands along the Oreti River, South Island—New Zealand, form a rural backdrop to the Crackerbox Runabouts. "Challenger," owned by S. Butler and powered with a Ford V-8, is from the design board of the American Naval Architect, David D. Beach.—Photo by Alan Pedlar.

the fellows have their decks $\frac{3}{8}$ of an inch in thickness, and if yours is over $\frac{1}{4}$ inch, there is another chance to lighten up the outfit by replacing with $\frac{1}{4}$ inch plywood.

The main thing to do is to check over some of the boats that are really going, and ask yourself a question, "Why did the owner do this?" You will find yourself coming up with some very interesting answers. In fact you *might* find yourself improving on somebody else's ideas.

O.K. buddy, you can take it from her now, and happy landings.

American Power Boat Association Rules
for the
CRACKER BOX CLASS

The Cracker Box Class is a special class of inboard runabouts, required to fall within the limitations of the following rules. Unless specifically stated otherwise the General Racing Rules for Inboards and the General Rules for Inboard Runabout Racing will be applied to this class.

1. In order to be eligible to race in this class boats must measure in accordance with the specifications and limitations set out in these rules and in the official drawings which may be obtained from the American Power Boat Association, 700 Canton Avenue, Detroit 7, Mich.

2. The match shall consist of not less than two heats of five miles in length as advertised by the local race committee.

3. The total maximum displacement of motors used shall not exceed 267 cubic inches. There shall be no tolerance above this figure.

4. Competing boats shall be powered with one internal combustion motor of 4 cycle type. There shall not be more than two valves per cylinder and one single carburetor ventura to each two cylinders. Motors shall be equipped with an efficient starter. The ignition may be battery or magneto. Cost of power plant complete as installed including all extras shall not exceed \$1,250. This price shall be based on current lists of respective manufacturers of motors, parts and conversions. Price shall include the cost of any extra labor.

Overhead valves allowed, only if the motor was originally equipped with them.

Fuel for all overhead valve engines shall be restricted to gasoline of a type regularly available for automotive, marine or aviation use. This rule shall not apply to Time Trials. There shall be no restriction on the fuel utilized in L-head engines.

Changes in parts and accessories may be made in the power plant only if such parts can be purchased by other owners at the same price. The price of such added part shall keep the total cost of the power plant within the price of the limitations specified in this section. (The retail price mentioned above shall not include such equipment as battery, propeller, tachometer, gauges, fuel pump, instruments, piping tanks, etc., but shall include complete motor, carburetors, starter, generators, etc.)

5. Vee drives or gear boxes shall not be permitted.

6. In order to be eligible to compete in this class boats must be built in accordance with specifications and limitations set out. Boats shall be not more than 15' 6" long or less than 13' 6" measured from bow to transom. Allowable deviations not to exceed 1" at frame from No. 4 to No. 13 inclusive. On all measurements shown forward of frame No. 4, the bow may be altered to suit.

Cockpit must be between stations 9 to 12 with engine mounted forward of cockpit.

The bottom shall not have longitudinal or transversal steps including relieved chine or concavity. The hull to be constructed of wood frames covered with plywood not less than $\frac{1}{4}$ inch thick.

7. A boat shall be raced with two persons on board except at the option of the drivers.

8. A spring must be attached to gas throttle that will bring the motor to idling speed when pressure is released. Rudder assembly, shaft size and angle may be optional.

9. Boats of the Cracker Box Class must carry a racing number with the letter "P" painted on each bow.

More air for the MERCURY



Not bad for a "fishing motor." Keith Sorenson, left, receives the L.A.S.A. Modified Stock High-Point Trophy from Dr. Wayne Ingalls. Hap Sharp of Midland, Tex., is the trophy donor.



Keith Sorenson's Tear'n Turk with the modified Merc KG7 giving the racing jobs another waxing.

By **RANDOLPH HUBBELL**

From the excellent results obtained in our latest tests with the Mercury KG7 power head it is evident that these engines — properly modified— will run every bit as fast as the Mark 20H and may soon be pressing the racing motors even more vigorously.

This time it is a little of the old added to the new and credit must be given to Geo. C. Austin, Austin Automotive Engineering, El Monte, Calif., who pulled this one from his book of motorcycle racing tricks of many years ago.

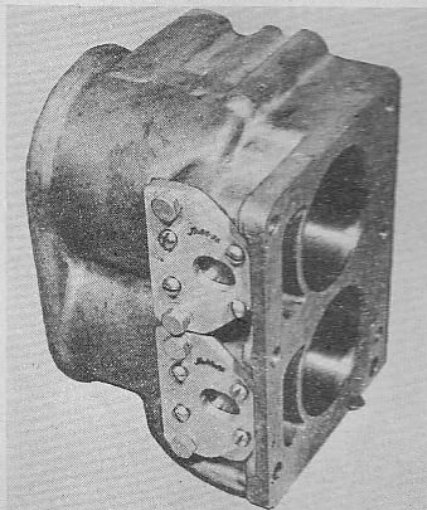
Assuming mechanical efficiency to be about equal, any engine, whether it be the lowly JU or the mighty Class X, will "put out" in exact proportion to the weight of the air-fuel mixture consumed per minute. If you can jam enough weight through the JU it will run the X off the race course or come apart in the attempt. Since supercharging is forbidden in outboard racing you have only the atmospheric pressure of about 15 pounds to do your jamming. Getting enough fuel to the engine does not present much of a problem but getting the full benefit of that 15 pounds of atmosphere is a very promising avenue of thought for the speed enthusiast.

In investigating the path of this air-fuel mixture through the Mercury KG7, several serious restrictions are encountered — the tiny carburetor throat, small opening into the crankcase, restricted passage through the

reed block, interference from the reeds themselves and the many sharp corners around which the mixture must pass. The motor has a built-in choke and as the rpms mount, fairly gasps for air.

The answer proved quite simple. Since the existing Tillotson AJ32A carburetor could supply more than enough gasoline — or alcohol when properly modified—and additional air to adjust the ratio was the remaining problem, why not by-pass the restricted area and feed additional air directly to the cylinders? Two supplementary reed plates were constructed and mounted—one on each transfer passage to the cylinders.

In the original test model a cover



A Merc "B" block with the Hubbell reed blocks installed.

was devised to eliminate the action of the reeds until after the motor was started but this was found unnecessary—a squirt-can giving the engine the starting shot of fuel. A dynamometer test showed a gain of three horsepower (16 per cent) at 6,000 rpm when the additional reeds were cut in and the high-speed needle opened approximately one-quarter turn over normal adjustment. Subsequent boat tests showed a gain of three mph with little time being spent on set-up adjustments to most efficiently use the added horsepower. In the racing season just passed more time was spent on wheels and setup. Keith Sorenson of La Crescenta, Calif., driving this power head on his Swift Hydro "Tear'n Turk" has won the Modified High Point Trophy, consistently beaten all Modified Stocks and at least 95 per cent of the alcohol burning racing Bs. Quite a record for the first season of a "Fishing Engine" in fast company, including the best on the West Coast. Repairs consisted of replacing one 60-cent needle bearing on the top main.

The same choked condition exists in all reed valve engines. At this time reed blocks are being made for test on the Johnson and Evinrude 25 horsepower motors. Actual dynamometer test results of these reeds and many other items of "Fact or Fancy" will be reported in future issues of "Speed and Spray."

Editor's Note: See Trade Notes for more on reed blocks.

WATER SKIING FUNDAMENTALS

by KEVIN B. O'BRIEN

Thousands of outboarders are discovering new boating thrills in water skiing. Here's "how-to" advice for beginners.

Story and Illustrations Courtesy *Outboard Boating Club of America*

Don't let appearances deceive you—if you can't swim, you can water ski! Thousands of outboard boaters are turning to the thrills of riding atop the water on a pair of wooden slats as another outlet of family boating fun.

Many others—perhaps you're amongst them—regard their more adventuresome neighbors with envy but hesitate to follow suit because of a mistaken belief that water skiing requires an exceptional degree of athletic proficiency and a skeletal framework capable of withstanding break-neck falls in one piece.

Nothing, however, could be farther from the truth. Almost anyone can learn to water ski well enough to get some fun out of the sport.

The records fail to show, moreover, that anyone has been seriously injured while practicing the conventional forms of water skiing.

The following paragraphs will attempt to help you master the art of remaining upright and water-borne. The material presented is directed at helping you, your friends and your family to add water skiing to your many other boating pleasures.

Beyond that, we leave the field of water ski education to the professionals and to your willingness to expend additional time, money and effort in pursuance of further skill in the sport.

With regard to mastery of the

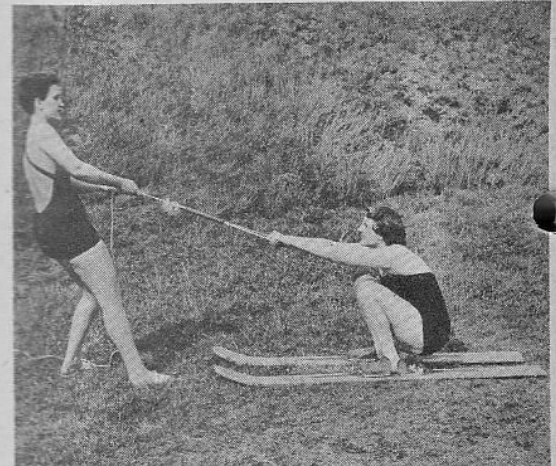
fundamentals, tots of five and six—as well as elders in their sixties—are learning to water ski every day. One Florida ski-school instructor reports that he taught a 68-year-old grandmother and her five grandchildren to water ski in the same series of lessons recently.

All that's required of you as a beginner is the patience to concentrate on the practice of some basic techniques and a certain degree of swimming ability.

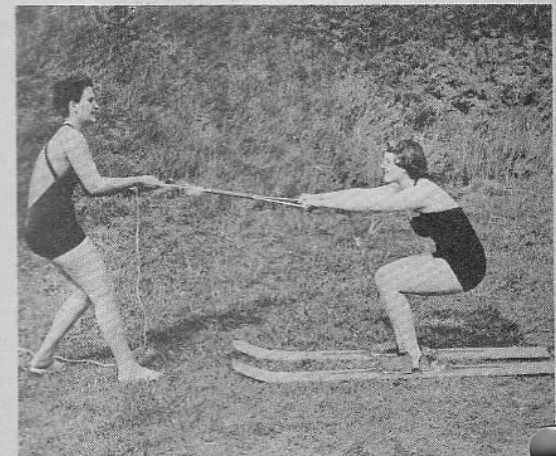
Experts advise that to water ski safely, the skier—be he learning or learned—should be a good swimmer and should feel perfectly at ease both in and under the water. If you're not a strong swimmer, don't go out on skis without a life jacket.

Marine life-saving equipment manufacturers have introduced life jackets which are specially designed for the water skier. These jackets permit the free movement necessary for skiing yet will support a person in the water with ease.

OUTBOARD BOATING's course in "Water Skiing I (Elementary)" will cover starts, landings, turns and wake jumping. Performance on a single ski and such competitive or water show events as the slalom course, ramp jumping, track riding, and doubles or group work necessitate a thorough mastery of the fundamentals and additional advanced instruction.



Dry-land practice should precede your first attempt at a start from the water. In the top picture (Fig. 1.), the dry-land skier is sitting back on the ends of her skis, legs bent tight against



chest and arms out straight. Her partner takes hold of the other end of the rope and simulates the pull of the boat in bringing the skier to her feet as in the bottom picture (Fig. 2).

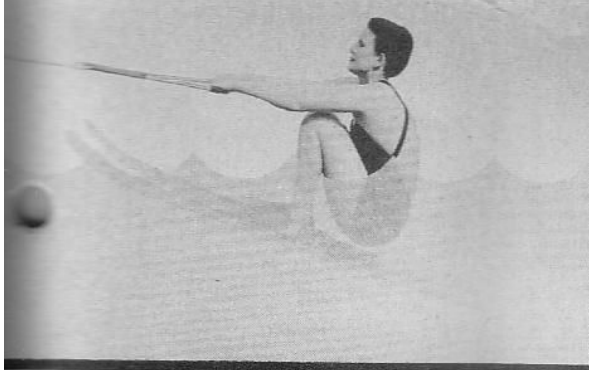


Fig. 3—Moving out into two or three feet of water, put your skis on. When ready for the start, grab the tow-bar and raise the tips of your skis above the water.

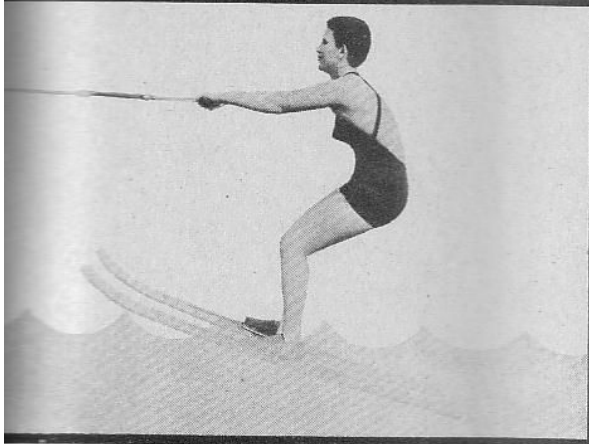


Fig. 4—As the boat starts accelerating, allow the tightening rope to pull you upright. Keep your weight balanced directly over your feet with your knees bent and arms straight.

Now sit down on the back ends of the skis with your legs bent tight against your chest (see Fig. 1). Remember always to keep your elbows straight.

If you lock your knees in between your arms in a start, you will offer a more compact "pulling target." This position will aid your control of the skis by preventing them from wandering off to the side as you are pulled up.

Have another person take hold of the other end of the rope and pull you up to a standing position (see Fig. 2). Keep your body slightly forward with your knees bent and your arms straight. Try this several times.

The motion of your body upward should be similar to that involved in getting up evenly off a low chair.

To begin with, the person doing the pulling in this dry-land exercise may brace his feet against the front end of your skis.

Many experts suggest, however, that the person doing the pulling move off a considerable distance from the skier. This will more closely simulate the actual pull of the boat which is some thirty to thirty-five feet from the skier in a start from the water.

After this practice session ashore, you're ready for your first lesson in actual starts from the water. There are numerous ways of starting off on skis but, again, we're considering only the basic techniques.

Moving out into two and one-half or three feet of water, put your skis on in the same manner as described in the dry-land practice — pushing your feet forward into the front bindings and then pulling up the heel bindings.

Grab the tow-bar and raise the tips of your skis above the water when you feel you're ready for the start (see Fig. 3). As you signal the driver and he starts accelerating, allow the tightening rope to bring you slowly to the standing position as you did when practicing on the beach (see Figs. 4 and 5).

Remember — balance your weight

First of all—the equipment needed. As outboard boaters, many of you already possess an outboard rig which will be suitable for providing the necessary motive power.

A medium-sized rig, consisting of a 10-to-16 horsepower motor and a matched hull, will give a skier a satisfactory ride. A 25 horsepower motor and properly matched hull will, of course, provide a faster ride.

An adult can stay on the surface on skis at around 15 miles per hour. Most skiing is done at a maximum speed of 20 to 25 miles per hour. Speeds beyond this may increase the thrill but they also increase the fight for control of your skis.

Most skis are made of wood with length exceeding four feet and width not exceeding eight inches but not less than four inches. Bindings are of a flexible material, such as gum rubber, so that they will yield in case of a fall and prevent ankle or leg injuries.

Manufacturers offer skis designed specially for use by beginners being towed behind an outboard boat at "learning" speeds as well as those intended for use by children.

Budget-wise, you can count on an investment of approximately thirty dollars for your water skiing footwear. For a few more dollars, you can complete your equipment with a 60-foot tow-line of quarter-inch Manila rope.

Skis are usually finished with either enamel or varnish in the same manner as a wood-hulled boat. Friction

of water on the bottom of the skis may be further reduced by waxing the bottoms with a piece of ordinary paraffin.

Before moving onto the water for your initial lesson in starts, you can save wear and tear on the boat driver and on yourself by boning up with a little dry-land exercise. This practice ashore will help give you the feel of starting up from the water and the feel of the pull on the rope in a start.

With your skis lying parallel on the ground, six to ten inches apart, get your feet into the bindings by first pushing them as far into the toe sections as possible and then pulling up the heel binding.

The gum rubber bindings should be wetted after they have been set to the proper size. This cuts down the friction and permits the skis to be slipped on without danger of tearing the bindings.

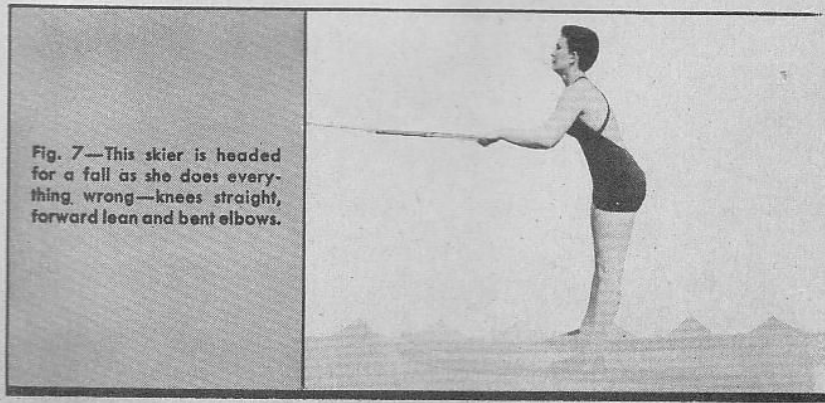


Fig. 7—This skier is headed for a fall as she does everything wrong—knees straight, forward lean and bent elbows.

directly over your feet with your body in a squatting position and with knees bent and arms straight until the boat pulls you upright.

If you have any difficulty with wobbling skis, don't let it throw you—either figuratively or actually. The skis may seem unmanageable at first but once the boat accelerates up around 15 to 20 miles per hour, you'll find yourself planing and the difficult period of the start will be past.

Don't pull up with your arms at the take-off. Keep your arms straight and your knees slightly bent and let the boat pull you up out of the water.

Let's check on how you look now that you're up on skis behind the boat. Correct posture or form in water skiing is very important, both from the standpoint of appearance and technique.

If your knees are bent slightly, if your back is straight and if the arm holding the tow-bar is straight (see Fig. 6), you'll find it much easier to maintain your balance and to maneuver behind the boat with less strain.

As you ride along in the trough

ordination between skis and skier. keep practicing turns inside the wake. Try curving from one side of the wake to the other as the boat moves straight ahead.

Even when leaning steeply into a turn, you'll experience no trouble with your balance. Your lean serves to compensate for the pull on the rope

at almost a right angle.

Your knees should be relaxed and slightly bent so that they can take the shock of hitting the wave like the spring action on a car (see Figs. 9 and 10).

With your arms extended forward, bend slightly at the waist as you go over the hump. This helps you to avoid the most common trouble for beginners—falling backwards. As you gain more experience, practice jumping up as you make the crossing. This will serve to relieve your skis of some of your body weight as they go over the wave.

To get back inside the wake, pull out to the side about 20 feet and reverse the procedure. Coming back onto the wake requires an abrupt turn in order to assure hitting the edge of the wake at a steep enough angle.

Now you have the basic "how-to" of starting, standing up and maneuvering on skis. All that remains is learning how to stop and this is the easiest lesson in your elementary water skiing course.

When you decide to call a halt to your skiing for the afternoon or at least for the one trip, pick out a suitable landing spot which will enable you to end up in the water near the shore or near to a float, dock or boat.

Then just let go of the tow-line, coast in about 15 or 20 yards and, as the skis lose planing speed, you'll sink slowly to a stop in the water.

A word of caution—always come in parallel with, and not head-on to, a boat, dock or float you may have selected as your landing spot. Then if your timing is a split-second off, you won't have the unpleasant experience of skiing headlong into a painfully solid object.

The aim of a good landing is to time your release of the rope so that the place where the skis suddenly lose their ability to hold you up cor-

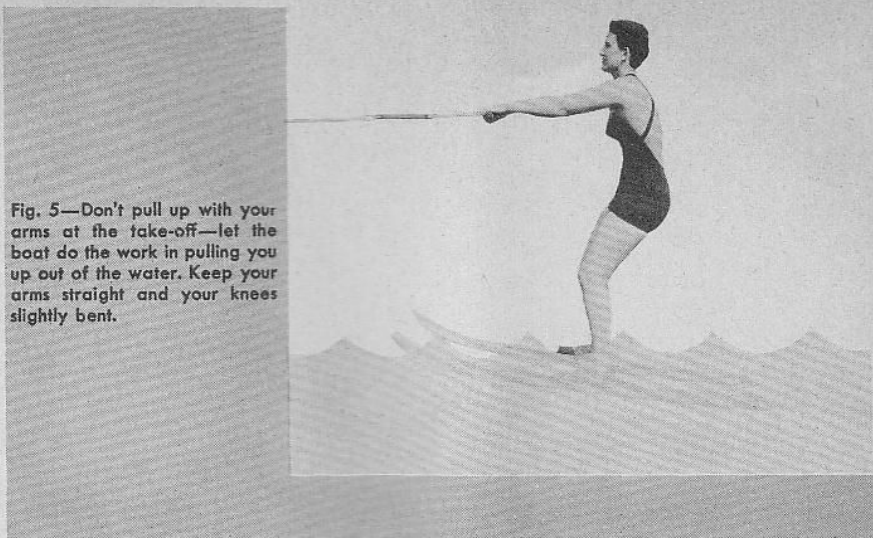


Fig. 5—Don't pull up with your arms at the take-off—let the boat do the work in pulling you up out of the water. Keep your arms straight and your knees slightly bent.



Fig. 8—Swinging sharply from the left, this skier is about to cross over the wake at her right. Knees are relaxed and slightly bent to take the shock of hitting the wave.

formed by the wake behind the boat, you have to be prepared for your first maneuver on skis—the turn.

In making a turn, the skis will do the work if you'll direct them in much the same manner as you'd steer a bicycle or skates.

To steer to the right, relax your knees and provide a little "body English" by pushing slightly with your left leg and turning your body in the desired direction. In other words, lean toward the side to which you want to go and steer the skis by banking them in the same direction.

To turn to the left, shift your weight in the prescribed manner and exert the pressure with your right leg.

In order to get the feel of this co-

and the centrifugal force of the turn.

So far, so good. After a bit of practice on starts and turns, you're able to ride behind the boat like an expert and are taking easily to the turns.

Now you're ready for the big thrill—riding out from the churning wake behind the boat, up over the wave formed by the wake on either side of the boat and out into the quiet water behind and to the side of the boat.

For the sake of illustration, let's say that you want to cross the wake out to the right side.

Steer out to the left inside the wake just as if you were going to make a simple right turn. Then turn sharply—more lean and more banking of the skis will produce a sharper turn—and come back onto the wake at the right

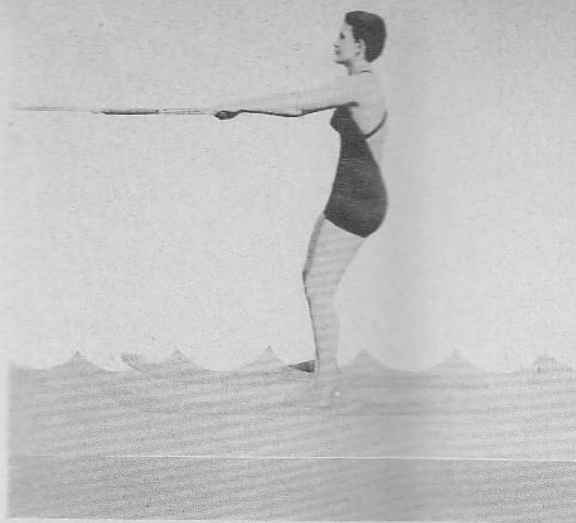


Fig 6—Both balance and maneuverability are helped by good posture—knees slightly bent, back and arms straight.

responds most nearly to the spot you've picked out for your landing.

At a speed of 20 to 25 miles per hour this will be approximately 15 or 20 yards away from the point at which you let go of the rope.

Not much can be done about stretching your glide in view of your loss of pulling power. But if you misjudge the other way and find that you're running out of water and are too near the beach or some other object in the water, sit down quickly by bending your knees into a crouching position and letting your body fall backwards into the water.

One other phase of the sport which probably should be treated is falling. Falls are a minor but inescapable annoyance which accompanies the thrills of the sport.

If you see a fall coming, always throw away the tow bar as you go down. The only danger accompanying a fall lies in tangling with the rope or hooking an arm or leg in the handle.

A fall flat on your side may some-

times knock the wind out of you for a moment. If this happens, grab a ski to keep afloat and keep calm while you regain your breath. If a ski isn't nearby, don't waste energy by swimming after it; float quietly and exercise as little movement as possible.

Falling backwards is usually the easiest way to fall. Just bend your

knees to almost a sitting position and let yourself fall back into the water.

If you see a headlong fall coming at low speeds, toss away the rope, tuck in your chin and put both hands above your head preparatory to making a shallow dive. Practice falling this way on purpose and it will become an instinctive reaction.

For safest operation, two people should team up in the boat ahead of the skier. While the driver devotes his attention to watching the skier and responding to his signals, the other boat occupant assumes the role of "back-seat driver," keeping his partner aware of traffic in the skiing area and giving directions for turns.

Or the roles may be reversed, with the driver concentrating on operation of the boat and the other individual relaying to the driver instructions from the skier.

That's about the end of this elementary course in water skiing. You should be able with a little practice to add water skiing to the many boating activities which you and your family are sharing.

Before attempting anything beyond

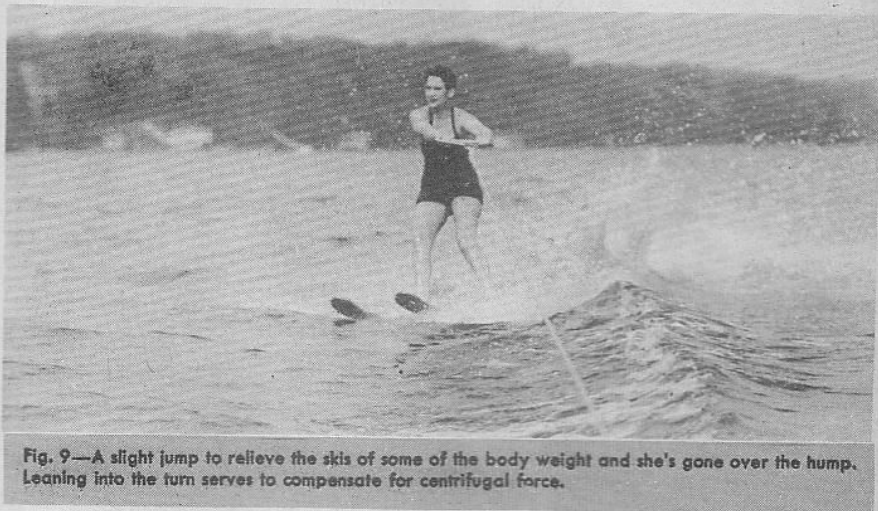


Fig. 9—A slight jump to relieve the skis of some of the body weight and she's gone over the hump. Leaning into the turn serves to compensate for centrifugal force.

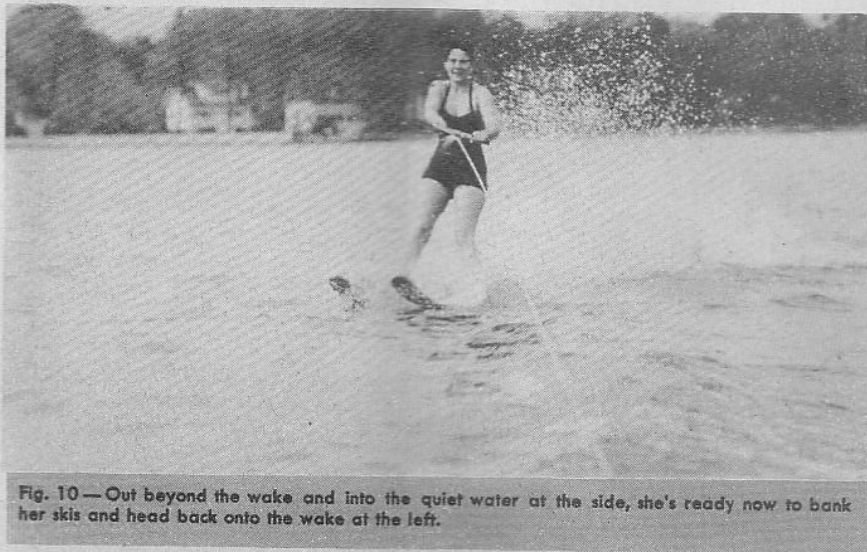


Fig. 10—Out beyond the wake and into the quiet water at the side, she's ready now to bank her skis and head back onto the wake at the left.

these basic maneuvers on skis, consult an expert. If you'd like to pursue the sport further, you may find it advantageous to join the American Water Ski Association or one of AWSA's numerous affiliated water ski clubs throughout the country.

The American Water Ski Association has been a leading force in the promotion of the sport and membership is open to anyone interested in the sport, upon approval of the AWSA membership committee.

Further information on AWSA membership and activities may be obtained by writing to American Water N.W., Grand Rapids, Mich. Ski Association, 1661 Monroe Ave.,

Class dismissed! Have fun.

elements of

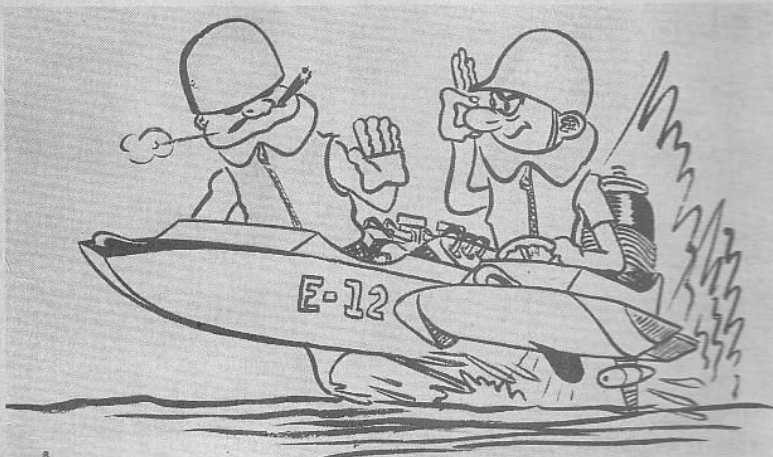
By RALPH DE SILVA

Illustrated by Ted Petersen

SMALL MOTOR BOATING



Something that ought to teach one the feel of boating.



Others drift into inboard and outboard racing.

SMALL motor boating holds a fascination for all those honestly exposed to the sport. It grips old and young alike. The boating bug doesn't discriminate . . . bites the ranks of all occupations alike: doctors, college students, soda jerks, office boys, 15 year old flyweights and oldsters of sixty—all are susceptible to the wonderful malady.

It is a fact that once a novice gets a good chance at small boating, he seldom discards it as a spare time sport. It is probably impossible for the old hand to believe that one may not like the sport and, almost invariably, that old timer is right.

The small boat offers all the charm of the water, excitement, relaxation, and pleasure. Boating, in a unique manner, affords a retreat from the realities of the present. Although it is true that a small measure of danger remains, as it always shall, that very fact adds to the appeal. We all seek adventure; and adventure lives among boats.

Reasons for boat ownership are many and complex. One is a matter of cost—as analyzed by the beginner. From the novice viewpoint, you have never been a boat owner before and how do you know you're going to like it? For one reason or another, you've been attracted to the water and are faced with a yen for a big runabout or cabin cruiser—which you may go sour on by the end of the first week.

The natural reaction will be to focus attention on the small motorboat. A beginner will add up an outboard rig as something that won't cost much; something that ought to teach the feel of boating; and as something that should be fairly easy to sell on the odd chance that you don't like boating after all. Simple? Yes, and like a lot of other simple things it works. A lot of the newcomers stay right along with outboards. Some of them start heading for the inboards, others drift into inboard and outboard racing in search of more excitement and the thrill of competition.

This progression is a natural one, and applies to any new water opened to the public. The first item will be a flotilla of outboard rowboats. Later some of the sportsmen will progress to more expensive outboard runabouts. In a short time, a few inboards will have joined the fleet and presently a complete cross-section from rowboats to cruisers will be in the area.

With the amount of sheltered inland water readily available in most areas and the present efficiency of boating equipment, it may be assumed that an ever increasing number of sportsmen will turn to boating as a means of deriving pleasure from this hectic world of ours. This is also natural—the water has been one of the oldest means of travel, livelihood, and source of pleasure.

Though the eternal movements of the sea remain unchanged, most developments of modern day civilization have extended to the water in order to better understand

the scheme of small motor boating, it may be enlightening to go into the history of the speedboat as we know it today.

There is very little that is unquestionably new in boat form. The stepped bottom principle of the hydroplane is over a century old. Fifty years prior to development of engines of high power and light weight, the basic idea of a hull designed to skim over the surface of the water (rather than through it) had been invented and re-invented many times. This skimming or planing action is the fundamental principle of the speedboat.

Early attempts to develop a planing hull were unsuccessful for engines of the period were so heavy and bulky that no hull could float the power required to drive the hull at planing speed. Probably the oldest marine antiquity is the Gokstad Viking ship dating from the year 900 A.D. Her construction was relatively light even as compared with modern standards—yet she retained some semblance of form for 1000 years. Massiveness is not the absolute measure of longevity.

The inward curve of the stern topside (tumblehome) once had a very practical application. In the past, ships were fighting machines. Most of the fighting ended with the hulls side by side and boarding gangs fighting it out along the rail. By curving in the sides, the quarter deck was made inaccessible, or at least inconvenient, for the boarding party. Thus, the officers had a better chance to draw pension, for the enemy could get at them only by fighting their way aft along the deck and up the quarter deck ladder.

Marine facts and fallacies have prevailed since the cave man first straddled a drifting log. They will prevail, no doubt, forever. But the most significant fact is that the modern boat—designed, built, and equipped by experienced craftsmen incorporates every good point which has been added to the sum total of experience for centuries.

On the whole, we have come to expect over-performance rather than under-performance—heaven help the poor gadget that doesn't live up to expectations. Whatever the device, we try to make it work harder and go faster than the designer intended.

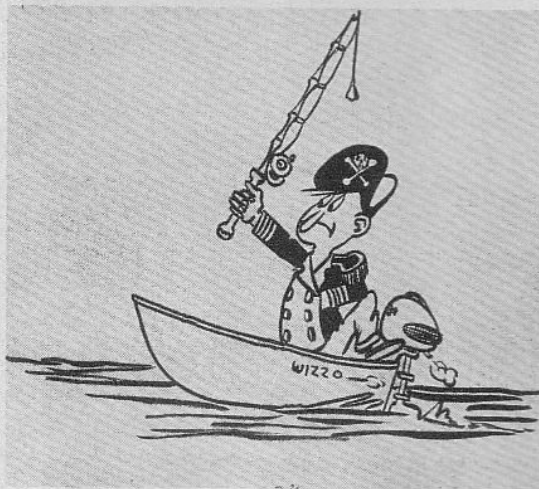
Behind that statement we find the corollary fact that wise manufacturers know that habit well, and usually make a practice of building their products so they won't fly to pieces with many times the rated load. They don't recommend that the excess capacity be used, but the capacity is there and the "thing" won't fold like a tired umbrella just because you put on a little extra pressure.

The entire motor boat industry and millions of satisfied sportsmen can attest to the fact that high speed and unreliability no longer go hand in hand. In the future, the going should be rough for the old sport who believed that elements of high speed were but a passing fancy. The old chuggychug has gone—and gone for good.

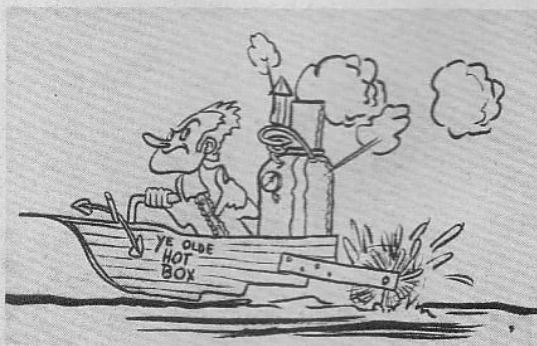
The motorboat, speedboat, is created to fall in line with the modern scheme of living, to be sold for a price compatible with modern incomes—a link to carry us from our everyday life into the fresh, clean air that prevails on the water.



Heaven help the gadget that doesn't work!



Adventure lives among boats.



The stepped bottom principal is over a century old.

**TROPHY FOR
OUTSTANDING GOOD
SPORTSMANSHIP**

Presented by the All Risks Insurance Company, this award will be given annually and the trophy will be known as the Kuhlman Award. First to receive the trophy was "Such Crust" Jack Schafer, of Detroit, whose consideration for a fellow competitor in the 1953 Silver Cup Race provided the inspiration for the establishment of the Kuhlman awards. The 1954 winner of the award was Eddie "Pop" Meyer of West Hollywood, California, the West Coast's grand old man of inboard hydro racing. Eddie threw away his chances of winning the 1954 Seafair Trophy Race at Seattle to go to the aid of a driver whose boat disintegrated. Left to right: Jack Schafer, Eddie Meyer, APBA President George Trimper and Russell Kuhlman who made the presentation at the Annual Meeting of the American Power Boat Assn.



Outstanding



BLANK MEMORIAL TROPHY

E. M. Peatross, Senior Vice President of the American Power Boat Association, presents the John and Flora Blank Memorial Trophy to Howard Thompson, Huntington Park, Calif., which is being awarded for the first time by the Kiekhaefer Corporation, manufacturers of Mercury Outboard Motors, to the highest point winner in any one class. Thompson finished with 6,126 points, Class D Stock Hydro.



**KIEKHAEFER MEMORIAL
TROPHY**

Bobby Parish, National High Point Champion of the Stock Outboard Division of the A.P.B.A. for 1954, with the A. C. Kiekhaefer Memorial Trophy which is awarded annually by the Kiekhaefer Corp. The Bakersfield driver compiled 16,183 points, with a margin of 2,467 points over the runner up.



**COLONEL GREEN
ROUND HILL TROPHY**

Chuck Parsons of Lodi, Calif., put together 9,117 points to win the Round Hill Trophy, annually awarded to the Amateur driving his own equipment (without bonuses) from January 1st through December 31st. Last year's winner Tommy Ingalls of Bakersfield, Calif., wound up in second place with 5,063 points. With the historical Round Hill Trophy in the foreground, Ingalls (right) turns over the trophy to Parsons. The presentation was made at the Annual Banquet of the Los Angeles Speedboat Assn.



GEORGE H. TOWNSEND MEDAL

With a total of 14,960 points, Bud Wiget of Concord, California, won this award presented annually to the Amateur or Professional driver earning the most points from April 1st through October 1st (plus points and bonuses for Divisional and National Championships regardless of date held). Bud also won the right to carry the number U. S. - 2 as the leading Professional of the year.

BOBRICK TROPHY

"For the fastest mile on Salton Sea" Bill Stead, owner driver of the Gold Cupper HURRICANE IV (left) takes over the trophy from the previous holder Bobby Sykes. Bill toured the Desert Shores mile at 163 plus mph. Sykes took the trophy from Sawyer who in turn took it away from the first winner, Guy Lombardo.

Achievement



THE US-1 AWARD

Harry Hayden of New Orleans, La., won the US-1 number for the owner of the equipment that he drove, Joseph Passalacqua, also of New Orleans. He scored 11,663 points.

ROCHESTER MEDAL

Bill Rankin of Seattle, Washington, rolled up 4,625 points to win the Charles E. Rochester Medal, open to Amateurs and Professionals competing in no more than two classes. Scoring without bonuses is from April 1st through October 1st of each year.

how to build a

WATER HAZARD

By ALLYN B. "HAP" HAZARD

Photos by John Cage,
Charlie Barbee and Walter Mickleburgh

WANT TO FLY? Would you like to have some real fun on the water? All you have to do is own a **WATER HAZARD** . . . and you can build it yourself! The cash outlay is a very modest figure, and the construction is within the capabilities of the average home-craftsman.

WATER HAZARD VI is the sixth boat to result from five and one-half years of "Hap Hazard" hydrofoil boat development. These boats are superior to conventional surface riding boats in that they travel faster with a motor of a given size and ride smoother in choppy or rough water.

Since the hydrofoils and the outboard motor on our boats are con-

trolled by an airplane type control stick and rudder pedals, the boats are flown like an airplane and the operator can have all the fun of performing many common airplane type maneuvers. These can be done in comparative safety and further than this—the operating cost is negligible—a lot of fun and a safe and inexpensive way to learn the rudiments of flying.

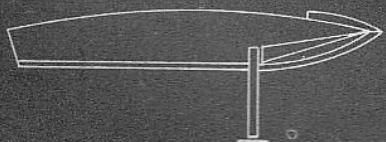
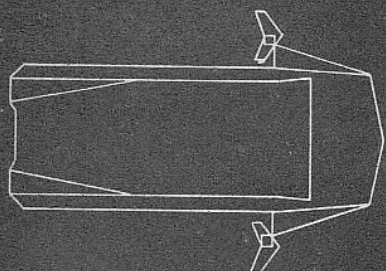
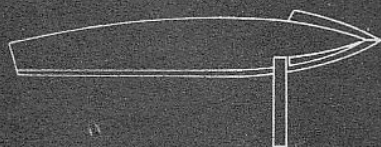
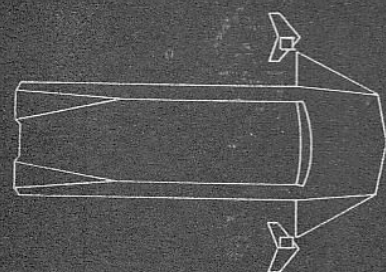
(Excepting for the Wright Brothers and other "Early Birds" the unofficial World's Record for soloing a powerful aircraft is now held by one of our associates, Wayne Morgan, who soloed a Piper Tri-Pacer in forty minutes following a few hours of "flight time" in **WATER HAZARD IV**.)

Aerodynamic Design

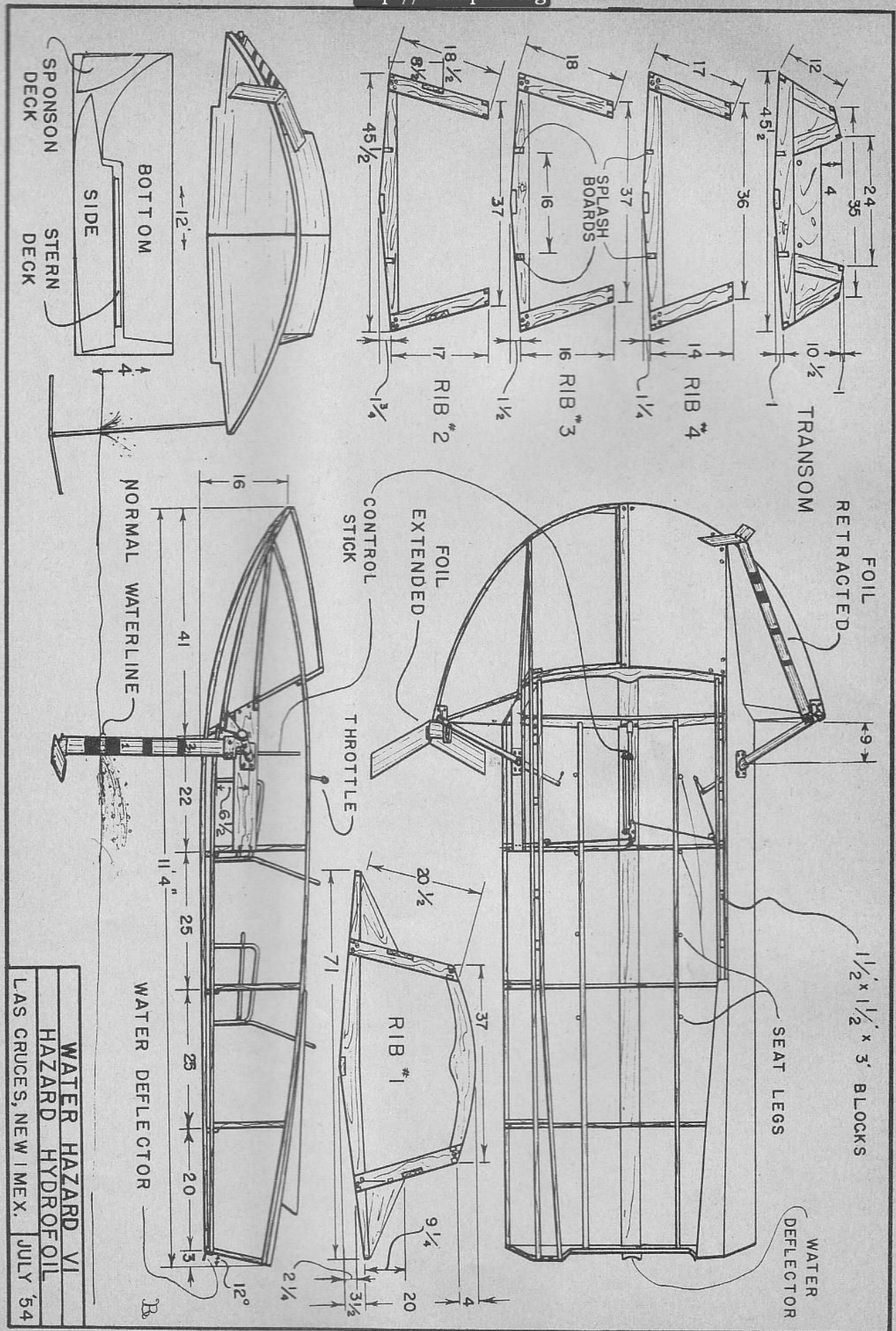
All of the boats in the **WATER HAZARD** series, with the exception of **WATER HAZARD III**, exhibit a rather unconventional hull design that looks somewhat like a cross between a "Sea Sled" and an unstepped, three-point "hydro." Since hydrofoil boats are normally in contact with the water at very low speeds or encounter the water only for brief periods at higher speeds, the hull shape of a hydrofoil boat need NOT be conventional and the design can be based upon aerodynamic considerations.

In earlier experiments **WATER HAZARD III** was constructed from

This is the greatest . . . Ed Brown in Water Hazard V just making a re-entry after a jump. The author and his wife riding dual in Water Hazard VI are coming up fast.



SPEED and SPRAY, April 1955



WATER HAZARD VI
HAZARD HYDROFOIL
LAS CRUCES, NEW MEX. JULY '54



The ride is so smooth it's just like flying

an eleven and a half foot OZARKA model B plywood boat kit and converted to hydrofoil operation. While this boat performed very successfully with hydrofoils its operation disclosed several disadvantages that should be expected when ANY conventional hull is converted to foil operation. The first of these disadvantages is that the conventional pointed-bow hull exhibits excessive aerodynamic drag and does so without producing the benefit of aerodynamic lift. In winds of 20 mph or greater it was impossible for WATER HAZARD III to take off upwind though it could easily take off downwind. WATER HAZARD VI and the other boats having our special hull design do not exhibit this disadvantage—in fact, a takeoff into a strong headwind can be made readily because of the additional 20% to 30% more lift resulting from the unique hull shape. A headwind of 20 mph or greater will practically “blow” WATER HAZARD VI off the water into its normal flying attitude. A second disadvantage of converting a conventional hull to use with hydrofoils controlled with a “joy stick” is that a novice pilot may, on RARE occasions, return the hull to the water surface in unusual attitudes which might be conducive to a dunking. Fortunately, the specially designed hulls of WATER HAZARD VI, V and IV make such an occurrence highly improbable and next to impossible. Regardless of the hull angle when it re-enters the water the specially shaped sponsons react with the water to develop a righting effect.

Moderate Power Required

WATER HAZARD VI, when equipped with hydrofoils of the size illustrated in one of the plan drawings accompanying this article, can fly one person when powered by a 10-hp Johnson and can easily fly two and even three when the Johnson 25

is hung on the transom. Motors smaller than 10 hp can be used but with the lower horsepower jobs it will be necessary to increase the hydrofoil area to insure adequate lift.

Hydrofoil Racing

These boats are suitable for a sporty new racing class in which only boats powered by the same size “stock” outboard power plant would race against each other; the relative “flying skill” of the operators would determine the winner. To a great extent the speed of a hydrofoil boat like WATER HAZARD VI depends on flying with the hydrofoils as close to the surface as possible in order to reduce drag by keeping the immersed length of the

strut to a practical minimum. The operator must be careful, however, not to climb the foils so near the surface that air will be sucked down on the upper foil surface. This situation will ruin the “suction” lift and cause the hull to descend rapidly to the surface and at the same time the operator will lose valuable racing distance before he can get up to speed and take off again. When joy-riding instead of racing, it is easy to maintain the water line a comfortable eight inches above the foil (see side view drawing of WH VI) with only a slight decrease in speed and with no likelihood of dropping.

Available Hardware

These plans illustrate the original hand-made parts which have flown so well on WATER HAZARD VI. By the time you read this most of the parts which are fabricated by welding will probably have been redesigned as aluminum castings in order to effect economies in production. None of these planned changes will effect the operating characteristics of the boat in any way—it flies perfectly as it is.

In addition to the struts and hydrofoils which we can supply now, we hope that by the time you have finished your boat we will be in a position to offer complete finished hardware kits in quantity and at reasonable prices.

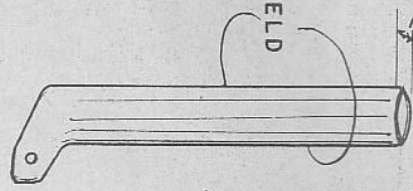
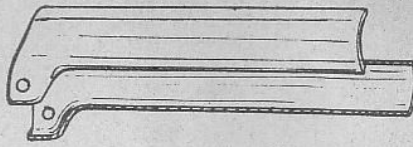
Double decked trailer—like any outboard.



Foils retract easily for beaching and docking.

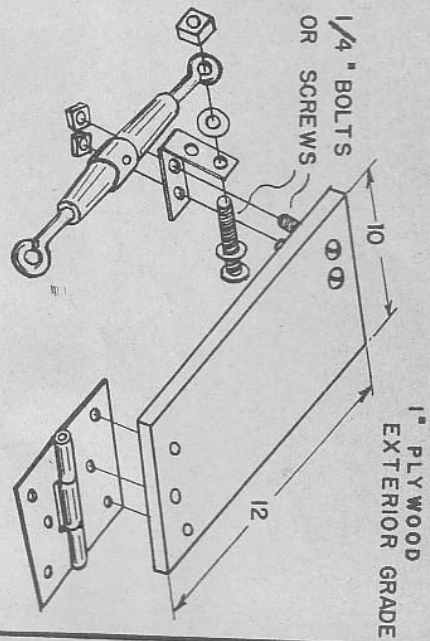


ALTERNATE STRUT CONSTRUCTION
10 or 12 GAGE STAINLESS STEEL

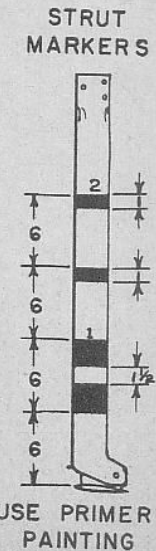
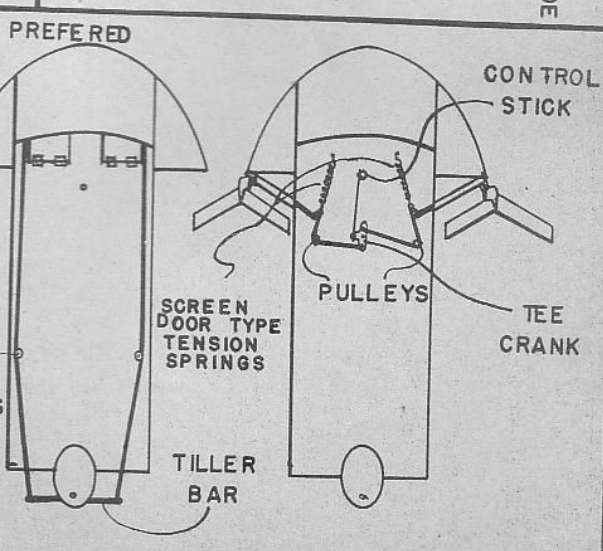
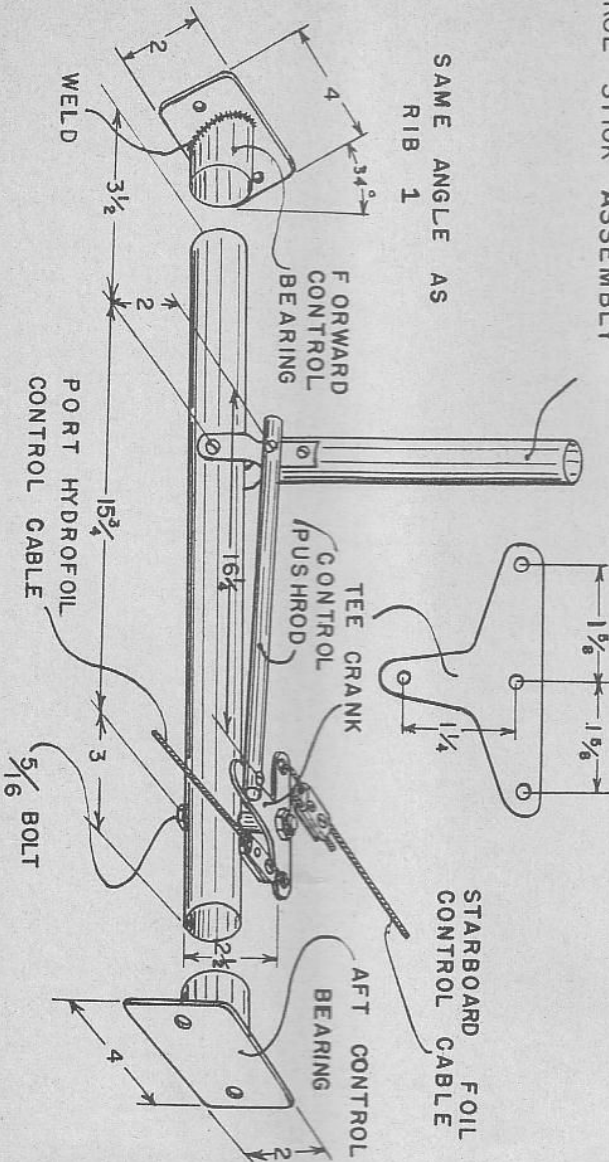


NOTE IF THIS METHOD IS USED THE STRUT ATTACH FITTING WILL HAVE TO BE MODIFIED FOR THE UPPER END OF THE STRUT FROM A SOCKET THAT IS RECTANGULAR TO ONE THAT HAS A LENS SHAPED CROSS SECTION.

LEFT RUDDER PEDAL ASSEMBLY

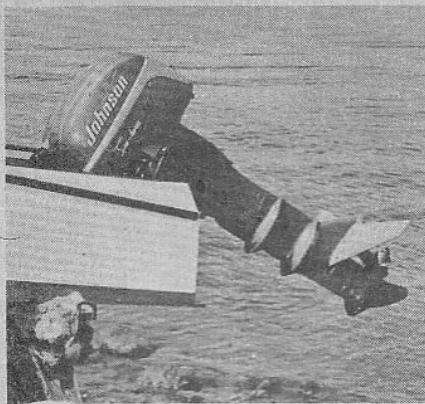


CONTROL STICK ASSEMBLY



USE PRIMER BEFORE PAINTING

CONTROL DETAILS
HAZARD HYDROFOIL
LAS CRUCES, NEW MEXICO JULY 13, 1954



Taking off with spray dripping from keel.

The Johnson Motors used on these boats have standard 5-inch shaft extension. The hydrofoils are bolted directly to the cavitation plate.



Hull Construction Is Simple

The three view drawings of WATER HAZARD VI show the construction of the hull to have been made as simple as possible. All of the ribs have the same beam at the chine. Rib I varies significantly from the rest in that instead of having only 45½ inches of beam it extends approximately a foot more on each side to form the back side of the two sponsons. Note that Rib I makes a 34-degree angle with the perpendicular to the keel at its point of contact with the keel. However it leans forward 29 degrees from the angle made by Ribs 2, 3 and 4 which are perpendicular to the keel. The sponsons on these boats not only provide a convenient means to fix the struts farther apart beamwise but also provide sufficient bottom area near the bow to prevent the hull from plowing under when deliberately thrown into a dive. Operations with WATER HAZARD III showed that a conventional pointed bow hull can be readily dived under far enough to ship about 4 inches of water.

Fiberglas for Strength

The entire bottom of WATER HAZARD VI was covered with a layer of fiberglas cloth and resin obtained from the Castolite Company of Woodstock, Ill. The hull aft of the sponsons was narrowed to 46 inches from the originally planned four-foot beam in order that fifty-inch fiberglas cloth could be used to cover the bottom and wrap around the chines and up two inches on each side. The cloth and plastic was first applied

over the hull aft of the sponsons and then a strip was cut from the fifty-inch wide cloth and laid crosswise across the entire forward bottom including sponsons. It is suggested that if fiberglas is used that an additional layer or two of the cloth be applied over the rear corners of the sponsons for strengthening where the OUTER RETRACTION BEARINGS are attached. WATER HAZARD VI is the first of our boats in which the bottom was completely covered with fiberglas and it was well worth the additional expense of about \$30.00 for materials for these reasons:

1. A dry hull—no leaks—a pleasure to own.
2. No weight increase due to hull soaking up water.
3. A lighter hull. The frame can be made lighter because of the hull strengthening which comes with fiber-

glasing.

4. Fiberglassing the bottom permitted the use of Anchor Fast Nails instead of screws to fasten the plywood to the frames—a big saving in time and expense.

5. The unusual stresses imposed by hydrofoil operation have eventually loosened the glued seams in our earlier model hulls built with conventional glue and screw construction. The fiberglassing stops this trouble completely. (Be sure to use several layers of four-inch-wide strips of fiberglas to strengthen and seal the seams at the vertical corners of the transom.)

Laminated Construction

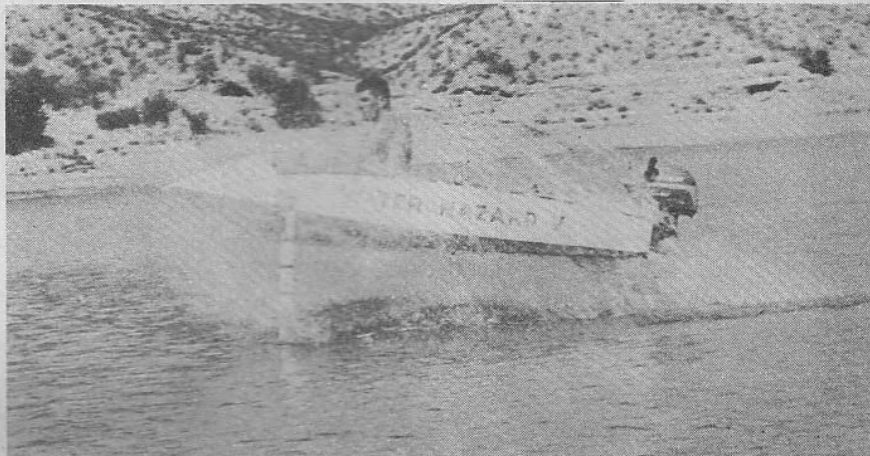
The sponson chines and ALL bow curves of the front three feet of the hull frame were formed of laminated construction. The sponson chines continue around to the bow of the boat making a solid one-piece bow-piece. This piece was laminated from three strips of oak, each ¼-inch thick by 2 inches wide, which were bent around a form and glued together. Naturally all of these pieces could be formed either by steaming the wood and bending to shape or band-sawing to the proper curve as was done on the earlier WATER HAZARDS II and IV. Any of these forms of construction are satisfactory though the laminated will be the lightest and strongest.

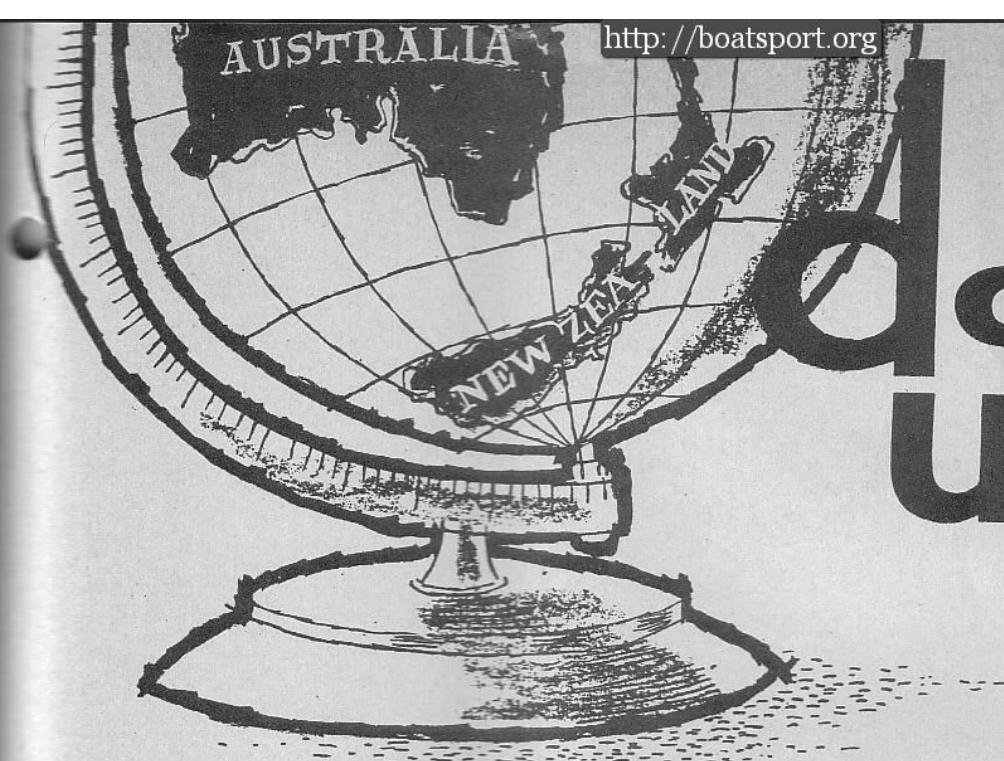
Economical Cutting

This boat was especially designed in size and shape so that sides, bottom, and sponson and stern decks could be cut from two pieces of ¼" exterior grade plywood 4'x12'. An additional piece of plywood 3'x4' is required for the bow deck. Frankly—cutting the four pieces from the 4'x12' sheets will be a tight squeeze, but it can be done if you first make heavy, brown wrapping paper patterns from

(Continued on page 36)

Hydrofoils breaking surface in a jump.





Down Under

By BIG NIX

Now that the new race season is fast approaching, most of the boys are flat out trying to squeeze that little extra out of last season's outfit which will keep them on the winning slate this time. It's going to be a really interesting season as towards the close last time, our local records were boosted considerably in all classes. That naturally means the rest have to produce the goods or be content to take the minor places, which doesn't fit the race game at all. Into the bargain, several new hulls are well under way. One of these I haven't seen, as Bill Bryne who drives Miss Horowhenua, was away out of town when I visited there recently. I don't know much about the details or what power he's likely to use, but whatever it is, will probably turn out good enough

to keep up with the leaders.

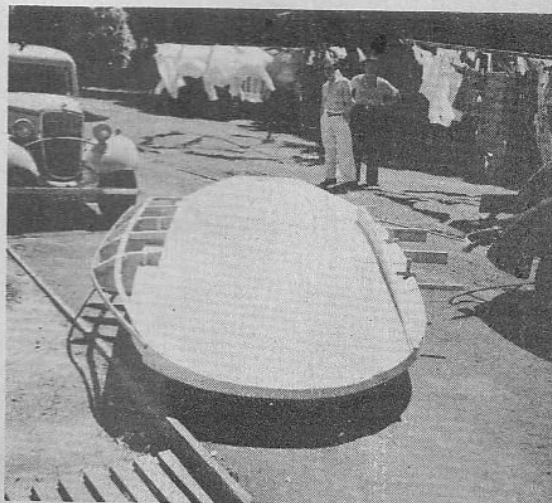
The other *Alter Ego*, is well under way, the hull itself was finished some months ago and is now waiting the power. One or two details of this model may be of interest. The published profiles don't show any interior detail so the builder had no idea of what Paul's set-up was, the only clues he had were ordinary horse sense and a fairly extensive experience of aircraft practice — he'd never actually seen a hull put together.

First off, the entire job was drawn in detail to full scale, all angles, cut-outs, joints, etc., included. These were made, numbered, and thrown in the corner until sufficient tailored pieces were available to put the frames together. That probably raises a laugh, but I can vouch for it being true.

The main cross frames forward were carried through the sides both horizontally and vertically to form the basic parts of the sponson frames. Extensive use of light alloy gussets, plates, and even bolts has been made and all joints have been both screwed and glued. The glue used, incidentally, is "Aerolite 300," a water proof urea resin, extensively used in wooden aircraft construction.

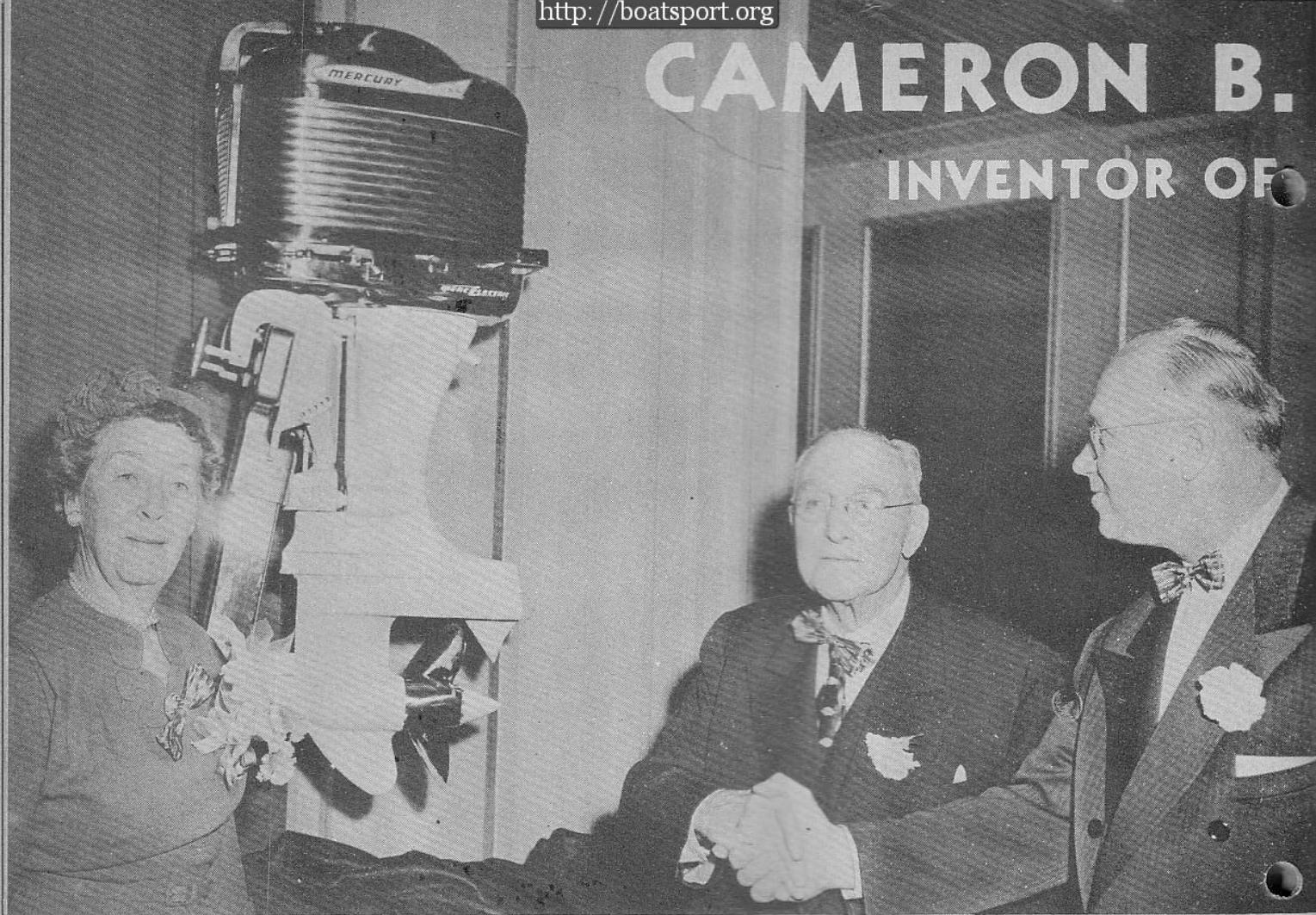
Perhaps the most unusual feature was the construction of the under side. Large sheets of really top grade 'ply are just not available out here, so kahikatea (a soft stringy white pine) was used to plank up first of all. This was screwed, glued, and seam battened to the frames and then dressed off at 3/16" thick. Next move was to

(Continued on Page 41)



One of the New Zealand hydros under construction from the Paul Sawyer ALTER EGO plans published in SPEED AND SPRAY.

CAMERON B. INVENTOR OF



Cameron B. Waterman, who invented the outboard motor fifty years ago, was presented with the latest development in outboards, a gold and white Mercury Mark 55, 40 horsepower MercElectric motor, by Carl Kiekhaefer (right). Mrs. Waterman watches the presentation.

Bike engine on chair started 1/4-billion dollar industry

Cameron B. Waterman, who invented the Outboard Motor in 1903, sold only 3,000 of his engines in his peak year. People thought they were a freak, and laughingly called them "coffee grinders." This past year, the outboard industry sold well over 480,000 motors and looks for far bigger unit sales in 1955. Conservatively speaking, it is estimated that more than 231 million dollars will be spent for outboard boats, motors and gas and oil, alone, this year.

Mr. Waterman, a 78-year-old Detroit patent attorney and manufacturer of precision tools, who was in New York as the guest of Carl Kiekhaefer, president of the Kiekhaefer Corporation, manufacturers of Mercury Outboard Motors, during the Na-

tional Motor Boat Show, was frankly amazed by the crowds storming the young manufacturer's space. He hadn't realized, before, the importance of his invention 53 years ago. He was equally amazed to learn that the 1955 line of Mercury Outboard Motors ranged in price from \$184.50 to \$687.50. The Waterman outboard sold for \$75 and \$85.

Why did Waterman invent the outboard? Because he got tired of rowing. It was as simple as that!

It was back in 1903, while a law student and Captain of the Varsity Crew at Yale that Waterman got the idea for the first outboard motor.

"I had an air-cooled bicycle engine that I was cleaning in my room," Waterman recalled. "I

clamped it on the back of a chair and started it for a test. Suddenly it occurred to me that if it runs on a chair, why not a boat transom turning a propeller?"

Waterman kept the idea in mind and, two years later in Detroit, rigged up the first outboard engine—with a 3-hp Curtiss air-cooled motorcycle engine and a chain drive to the propeller — tested it successfully in a wooden tank in the back yard before giving it a trial on the river. The original of this first production model is in the museum at Belle Isle, and another is known to be in use in Panama. Several 1913 Waterman Outboard Motors are still giving service in Minnesota, Alaska and Canada. The owners write Mr. Waterman fre-

WATERMAN . . .

● THE OUTBOARD

quently about obtaining parts.

Two earlier attempts to produce an outboard engine were made, but neither was successful. One was a heavy electric motor hung over the side of a boat, and the other, an over-side steam engine with a huge boiler, was equally useless. Because of these two motors, Mr. Waterman did not get his patent until December 6, 1907—it was Number 851,389. The word "outboard" was coined and first used by Mr. Waterman in 1905. The outboard was improved in 1906, with the use of a single cylinder with the flywheel enclosed in a crank case. In 1907, this design was revamped, substituting a water-cooled cylinder for the air-cooled cylinder, and adding a water pump on the propeller shaft. In 1914, the Waterman Outboard Porto Model C-14, 3-hp, was equipped with a magneto, and the following year with a flywheel magneto.

Waterman had no competition until 1909, and when it came it was helpful. With a second manufacturer entering the field, people began to realize that the outboard was not a freak, but practical and valuable to the small boat owner.

The friendship between Waterman and Kiekhaefer was to be expected. As the man responsible for the big engineering advances in outboard motors, Kiekhaefer has the inventor's respect and appreciation. Kiekhaefer showed his esteem for Mr. Waterman on the 50th anniversary of his first production model by honoring him at the 1955 Mercury Dealer Luncheon and presenting him with a specially designed Mark 55 MercElectric Mercury Motor in an elaborate white and gold housing. With four in-line cylinders, a complete electric system and 40-plus horsepower, the Mercury motor is quite different from the Waterman model, but basically it is his idea come of age.

Mr. Waterman was also honored at the Mercury Luncheon by the American Power Boat Association, with a plaque given in appreciation of his invention of the outboard motor.



E. M. "Red" Peatross, Senior Vice President of the American Power Boat Association, with the beautiful A.P.B.A. Plaque awarded to Waterman.



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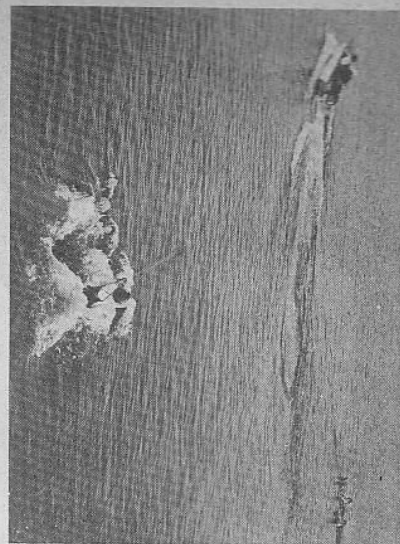
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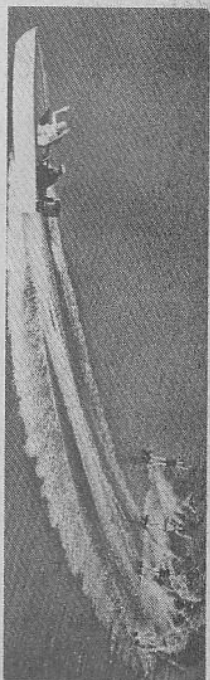
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SPRING OUTFITTING FOR 1955

"What's new in boats, motors and accessories as displayed at the 22nd Annual Chicago National Boat Show."

Editor's Note: We are indebted to the Outboard Boating Club of America under whose auspices the Chicago show is conducted. Their fine Press Book provided the following summary of exhibits.

The boom in outboarding will continue indefinitely, according to industry leaders attending the Chicago National Boat Show.

Production increases are being planned by all motor manufacturers, with some projecting expanded output through 1956 and 1957.

Evinrude, basing its expectation of future increases largely on the fact that the marine dealer has come to Main Street, plans to expand production 72% by 1957 over 1954. The 1951-54 period showed a 178% increase, according to Howard F. Larson, director of sales.

"Women can shop for boats, motors, and accessories in conveniently located, well-appointed stores now, as compared with the grimy waterfront shacks that were common a few years back," said Larson. "This will have a tremendous effect on sales."

Johnson Motors will raise production approximately 10% in 1955, this being the maximum increase possible with present facilities, according to William H. Jonas, director of sales and advertising. Sales were up about 30% in 1954, he said.

Jonas added that plans are now well along for another substantial increase in output in 1956.

H. B. Atwater, President of Scott-Atwater, said his firm will increase production by more than 30% for fiscal 1954-55 over 1953-54, a record period and in turn more than 40% over 1952-53. "The Bail-A-Matic feature, an automatic boat bailer that operates through the motor, continues to be a leading factor in sales," he said.

Armand A. Hauser of Mercury said that orders have skyrocketed at the Chicago Show, thanks to "advance styling, choice of colors, and color combinations, range of horsepower from 5 to more than 40 . . . and the growth of family cruising. Safety is the big factor with women, and men show more interest in color and styl-

ing," he said.

A 30% production increase was predicted by a Champion Motors spokesman, coming on top of a large 1954 increase. Champion offers four units in the 3½- to 16½-hp range, with the greatest buying emphasis on the 58-pound 16½.

Spokesmen were unanimous in stating that the major increase in sales will come in the higher horsepower units, continuing the trend of the past several years.

The Johnson sales meeting this week (Thursday) drew an announced 850. The Evinrude meeting drew an announced 728, and Mercury an announced 550.

Record sales of estimated 75 million dollars were reported by exhibitors at the 22nd annual Chicago National Boat Show.

Show Director Guy W. Hughes said the figure, 50% higher than for last year's show, includes sales both to consumers and dealers and covers everything from small boat hardware up to a 42-foot luxury cruiser.

The all-time sales high for the Chicago marine exposition was attributable, Hughes added, to a record number of 259 exhibitors and to record public and marine dealer attendance.

Despite a sub-zero spell which cut into expected attendance for three days, more than 218,400 boating enthusiasts passed through the turnstiles during the ten days of the show.

Attendance surpassed last year's 200,000 by more than 9%. It included 15,400 marine and sporting goods dealers who came to the show to inspect new model boats, motors and engines, trailers and boating equipment and to place orders for their 1955 stock.

Dealers registered for the show from all the 48 states, Canada, Mexico, Hawaii, Alaska and several countries in Europe and South America. Dealer attendance was up by better than 50% over last year.

Salesmen for many of the Boat Show exhibitors reported that they had written more orders during the first half of this year's show than they did during the entire ten days of last year's exposition.

Many of the consumer sales on the Amphitheatre floor were made by local dealers working in the booths

of manufacturers whom they represent in the Midwest area.

"The success of the 1955 Chicago Boat Show is an indication of the growing popularity of recreational boating in the U.S.," Hughes observed. "It proves conclusively the status of Chicago and the Midwest as the boating capital of the nation."

Outboard Motors and Inboard Engines

AIR-DRIVEN OUTBOARD MOTOR

Airboats, Inc., St. Louis, Mo.: The Airboy, which attaches to a boat like any other outboard, is air propelled, steered and cooled. The entire assembly is above water. It has an automatic recoil starter and the gas tank is built into the motor assembly. The two-cycle, one-cylinder engine is available in a 2-hp model with speeds from ½ to 7 mph and in a 3.5-hp model with speeds from ½ to 11 mph. The 28-inch propeller is enclosed in a 30-inch guard. Unit height from top of transom to top of guard is 33½ inches.

CHAMPION SHOWS LIGHTWEIGHT 16.5

Champion Motors, Minneapolis, Minn., is introducing a new 16.5 motor weighing only 58 pounds. The new Blue Streak is a large-bore, short-stroke, anti-frictionized motor which has checked out as high as 32 mph in time trials. A factory-unitized Midship Control Model is offered for use on steering-wheel-equipped cruisers and fast runabouts. Special aircraft-type cable controls, built with the motor at the factory, connect directly to motor magneto and powershift. Other '55 Champions are the Fishin' 7, Fishin' 5, 3.5 Guide and two new Blue Streak Hot Rods.

EVINRUDE QUIETS FOUR MOTORS

Aquasonic principles—soundproofing on water—are embodied in four 1955 outboards of Evinrude Motors, Milwaukee, Wis. The company has isolated vibration by "floating" motor

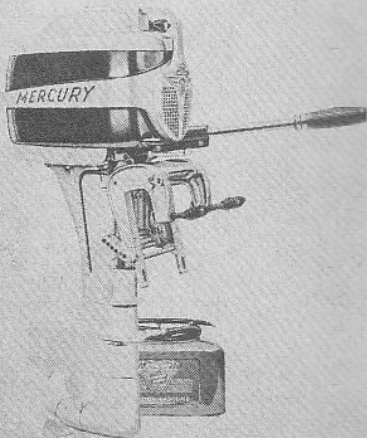
powerheads on resilient mounts. Quiet operation of the 25-hp Big Twin electric-starting and standard models, the 15-hp Fastwin and the 7.5-hp Fleetwin is achieved by use also of acoustically-tuned silencers for carburetor intakes, perfected underwater exhausts, water-sealed exhaust reliefs and auto-lift hoods enclosing the powerhead. The 3-hp Lightwin also utilizes carburetor air intake silencers. All '55 Evinrudes except the Lightwin feature a Roto-Matic speed control. The Big Twin and Fastwin are equipped with six-gallon Cruis-A-Day gas tanks and the Fleetwin has a four-gallon tank.

JOHNSON FEATURES QUIET OPERATION

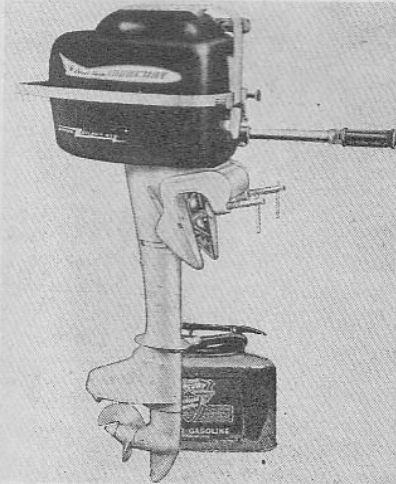
Suspension or cushion-drive silencing, featured on last year's Sea-Horse 5.5, has been incorporated in the four largest outboards manufactured this year by Johnson Motors, Waukegan, Ill. Johnson's engineers have utilized suspension drive, intake silencers, underwater exhaust and an exhaust relief silencer to make the Sea-Horse Electric 25, Standard 25, 10 and 5.5 hp models "really quiet." The 25s and the 10 also have sound-sealed hoods. Noise reduction principles have been extended to the Sea-Horse 3. The big 25 includes two new devices to protect motor and boat from damage — spring-loaded tilting lock and rubber-cushioned tilting stop. Full gearshift and twist-grip throttle are available on all but the smallest Sea-Horse, which has full pivot reverse with spark and throttle synchronized in one lever.

ACOUSTI-COWL ON MERCELECTRICS

Ignition-key 12-volt electric starting is feature don the new 40-hp Mark 55 and 18-hp Mark 25 Mercelectrics of the Kiekhaefer Corp., Fond du



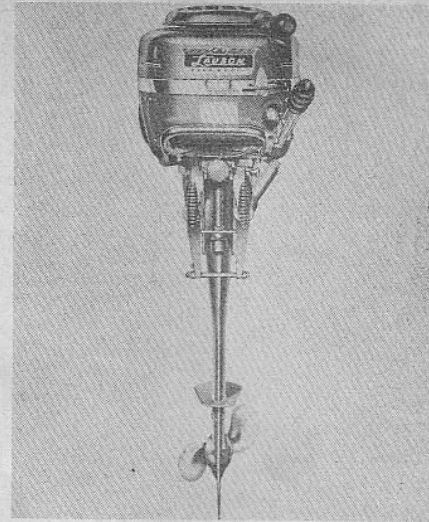
Lac, Wis. Both motors are also available in manual starter models. The four-cylinder-in-line Mark 55, the twin Mark 25 and the new 5.9-hp Mark 6 twin have Acousti-Cowl, a newly-developed sound absorbing principle which silences the powerhead. Mercury's two biggest motors also utilize Dynaflex rubber suspension mountings to further insulate the boat from power impulses and engine vibrations. Additional noise reduction stems from Vari-timed reed valves which are buried in the crankcase of the engine, where sound waves tend to cancel out each other. Other Mercurys are the 16-hp Mark 20, the 7.5-hp Mark 7, the 5-hp Mark 5 and Class A, B and D racing models.



FOUR-CYCLE MOTORS FROM LAUSON

The Lauson Co., New Holstein, Wis., manufactures four-cycle, air-cooled outboards in 3-hp single and 6-hp twin models. The twin 6 is available with a planetary transmission and shift control for neutral, forward and reverse. Lauson motors feature automatic rewind starting, automotive-type float feed carburetors, pressure oil pump, high tension magneto ignition and shear pin propeller protection. Cooling fins and fan elim-

inate water jacket and water pumps.

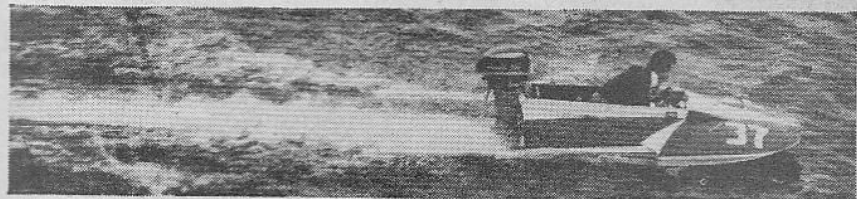


MUNCIE SHOWS SMALLEST OUTBOARD

Tabbed by the manufacturer as "the ideal motor for weekend or flying fishermen," the Neptune Mighty Mite of Muncie Gear Works, Muncie, Ind., weighs only 17 pounds. The 1.7-hp motor features moisture-proof magneto, siphon cooling and underwater exhaust.

OLIVER ENTERS OUTBOARD FIELD

The Oliver Corp., Battle Creek, Mich., bows into the outboard field this year with two motors—the Challenger 5.5 and the Commander 15-hp models. Noise level suppression is a basic design feature of both Oliver motors with spiral three-point contact gears and scientifically-balanced crankshaft and flywheel. Both motors have full gearshift and completely synchronized magneto and carburetor with twist-grip throttle. Automotive-type hoods with push-button release and remote full tanks are standard equipment. Completely enclosed drive



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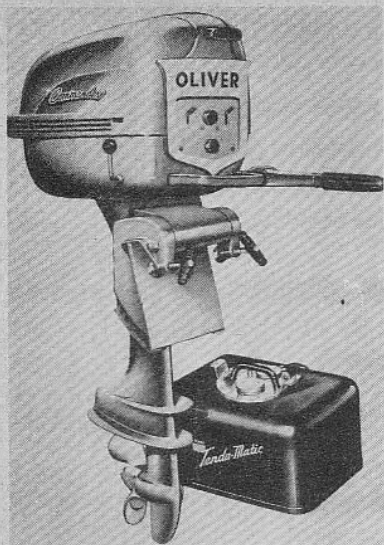
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SCOTT-ATWATER QUIETS NEW 30

Stepping up the trend toward both greater power and quieter operation in outboard motors, Scott-Atwater Mfg. Co., Inc., Minneapolis, Minn., features a complete underwater exhaust, intake silencer and spring-mounted sound and vibration deadeners on its new 30-hp motor. Capable of speeds up to 40 mph, the Scott-Atwater 30 is available with either electric or manual starting and has free-flow V-valves, auto-type dual exhaust and safety-zone shift lock. The Aqua-mute exhaust, Hush-Spring mounts, snap-off hood and Bail-a-matic automatic power bailing are also featured on Scott-Atwater's 5 7.5, 10 and 16-hp motors. Sixth model in the '55 line is the 3.6-hp Super Single. Other features on all but the 3.6 are remote control connections, complete gearshift, separate stow-away fuel tank, Aquablade lower unit and carburetor drain.

ARNOLT SEA-MITE FOR SMALL CRAFT

Weight-saving alloys are used by Arnolt Corp., Warsaw, Ind., in the construction of its 20-hp Sea-Mite marine engine. With a weight of only 281 pounds, the Arnolt engine develops its rated horsepower at a moderate 2,800 rpm. For use in runabouts and in new class racing boats, the Sea-Mite is designed also as an auxiliary engine for sail and motor boats. The Sea-Mite has a two-unit, six-volt electric system and built-in reversing gear and features the latest type carburetor with approved flame-arrester, electric fuel pump, water-cooled com-

bination manifold, bronze gear water pump and built-in thrust bearings. Arnolt also offers its utility clutch for low-powered marine and industrial engines.

NEW 150-HP CHRYSLER

Marine engines from the Chrysler Corp., Marine Engine Div., Trenton, Mich., include a new 150-hp V-8 model—the Royal V Special. Like last year's new 200-hp Imperial V Special, the new engine mounts on standard 22½" centers and requires no special hull construction. Features include overhead lateral valving with larger and wider-spaced valves, completely water-jacketed cylinders, free-flow intake and exhaust porting, fully-enclosed oil lines and centered spark plugs. Chrysler has also stepped up horsepower of its Ace 92 to 95 hp) and its Ace Special (105 to 110 hp). Other Chrysler engines are the 115-hp Crown, 125-hp Crown Special and 160-hp Majestic.

FOUR NEW DEARBORN INTERCEPTORS

A new series of four marine engines—rated at 125, 140, 155 and 175 hp—is produced by Dearborn Marine Engines, Inc., Detroit, Mich. The Dearborn Interceptor models are based on a new valve-in-head V-8 engine and feature low weight-to-horsepower ratio, quiet operation, new hydraulic clutch control and reverse gear, adjustable motor mounts and rugged but lightweight reduction gear box. Other features include an improved carburetion system, self-priming water pump and moisture-proof electrical system.

THIRTY-SIX GRAYMARINES FOR '55

Two new engines for runabouts and cruisers are being introduced by Gray Marine Motor Co., Detroit, Mich. Both the 175-hp and 165-hp Graymarines develop their rated power at 3,400 rpm. The 175 has dual updraft carburetors for high output and weighs only 1,050 pounds. Gray has also added a new 200-hp diesel to its line of 31 gasoline and five diesel power-plants. Gasoline engines include four- and six-cylinder models for stockboats. Ratings are amply spaced over the 25-, 45-, 60-, 75-, 100-, 115- and 135-hp range, built both in 3,200 rpm styles for heavier boats and 3,600 rpm styles for runabouts.

NORDBERG FEATURES KNIGHT 155

Six-cylinder gasoline marine engines from Nordberg Mfg. Co., Milwaukee, Wis., range from 95 to 155 hp. Big attraction of the Nordberg line is the Knight 155, which delivers its rated horsepower at only 3,200 rpm with standard accessories, single carburetion and on regular automotive grades of gasoline. Other Nordberg engines are the 130-hp Tarpon, 110-hp Marlin and Bullet and 95-hp Arrow and Bluefin. All except the Bluefin are available with manually or hydraulically-operated reverse gears and a wide range of reduction gear ratios. Another feature on all but the Bluefin is Nordberg's exclusive Sta-Nu-Tral clutch, which keeps the propeller stopped while the clutch lever is in neutral.

TWO NEW UNIVERSAL SIXES

New six-cylinder engines in the line of Universal Motor Co., Oshkosh, Wis., are the 145-hp Super-Six Commodore and the 130-hp Super-Six Stevedore. Other big Universals are available in 60-, 90-, 95-, 105- and 110-hp models. Leader of Universal's four-cylinder series is the 65-hp Unimite Four. Other fours are the 50-hp Super-Four and the 25-hp Atomic Four and Utility Four. Universal also offers its 12-hp Blue Jacket Twin and its 8-hp single-cylinder Fisherman. Choice of reduction drives is available on all Universals and both manual and hydraulic reversing is offered.

CHRIS CRAFT ADDS

New 60- and 190-horsepower engines are included in Chris-Craft's 1955 line of marine engines. All are engineered and built exclusively for marine use with emphasis on compact design and dependable, economical performance. The 60-hp engine, as an example, measures less than 32" overall and weighs only 456 pounds. All have full-length water jackets for efficient cooling, essential for marine engines that are called on for long hours of continuous service at full throttle.

The 60-hp Model "A," price leader of the Chris-Craft series, is a direct-drive engine. Reductions of 2.04:1 and 3.00:1 in addition to direct drive are available with a Model "B," also 60 hp. Both are well suited for installation in kit boats and other light hulls where low initial cost and operating economy are particularly important.

To fill the need for engines that are light, compact and powerful enough

to handle heavier runabouts, Chris-Craft offers a 95-hp "K" and a 105-hp "KL." Both can be obtained with reductions of 1.50:1 and 2.04:1. Internal helical gear and pinion reduction drives are lubricated from the reverse gear and bearing in three locations assure maximum rigidity.

The "KLC," "KBL" and "MBL," high-speed engines with ratings of 120, 131 and 158 horsepower, are designed especially for boats that call for quick acceleration and sustained high-speed operation.

Both the 130-hp "M" and the 145-hp "ML" series are offered with reductions of 1.50:1 and 2.03:1. They are intended for use in larger runabouts and utilities where peak load is required.

ACCESSORIES

In addition to racing equipment of its own design, Airmarine of Chicago showed racing propellers from Stanus Propeller Co., Detroit, Mich., and steering wheels and controls from Keller Mfg. Co., Oneida, N.Y.

Featured in the Nautalloy hardware line of Aluminum Marine Hardware Co., Auburn, N.Y., are ready-cut, curved plexiglas windshields in either tinted or clear glass.

Safety equipment from The American Pad and Textile Co., Greenfield, O., includes Tapatco Stay-A-Float jackets, which put an end to worries about youngsters falling overboard.

A complete line of water skis and saucers is produced by Aqua Glide Division, Monrovia, Calif.

Ivalite spotlights, with direct or remote control and featuring rotation beyond starting point, are one of the products of Arnold Corp., Warsaw, Ind.

Life preservers, ring buoys, boat fenders and water skis are among the equipment offered by Atlantic-Pacific Mfg. Co., Brooklyn, N.Y.

Feather-touch control and "on a dime" turns are features of the new Hydra-Steer hydraulic steering unit of Attwood Brass Works, Grand Rapids, Mich.

An outboard motor carrier with handle-bar type handles and heavy duty pneumatic tires is being introduced by Brinkton, Inc., Minneapolis, Minn.

Marine abrasives materials, includ-

(Continued on Page 36)

They're Off And Running—Continued

like the Long Beach Marine Stadium, except that here they have huge covered stands and of course the pari-mutuels. The stands are on one side only, but the whole area is fenced off. The pits are way down on one end with a fence around them and police every ten feet to keep the fixers out. I got in with a lot of talk and my A.P.B.A. card which they didn't understand but thought must be something important the way I waved it around. After the races I talked them into letting me try one of their runabouts. It broke over immediately and was a surprisingly good running boat which turned on a dime at full bore. The motor was a Kinuta and although it is a B with a 13/19 foot, it died in the turn worse than my A.

As you can imagine they have excellent competition and everyone seems to enjoy the races. They said they weren't getting good crowds as the weather was cold, but estimated that they had eight to ten thousand people there—also there were more races in the city the same day at another course.

Sincerely,
Maj. F. C. Thomas.

SUBSCRIBE TO SPEED AND SPRAY

Outboard Racers Manual

97 pages of information, illustrations, graphs, charts. Full explanation on readapting motors for racing. The hows and whys. Covers fuels, hulls, propellers, etc., completely. Every outboard racer should have a copy.

Postpaid \$3.75

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Approved by American Power Boat Assn. Hitenal aluminum alloy. Oversize ears, bosses. Anti-distortion ribs. SAE carburetor flange. LS-9 ball bearing boring. 65 ATDC rotor closing event. Finish machined, \$50.00.

Rough Casting \$15.00

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48 cu. in. Inboard Hydro Plans

FRAMES BLUE PRINTED FULL SIZE
LOTS OF INSTRUCTIONS
PHOTOS

World Record Boats Built
From These Plans

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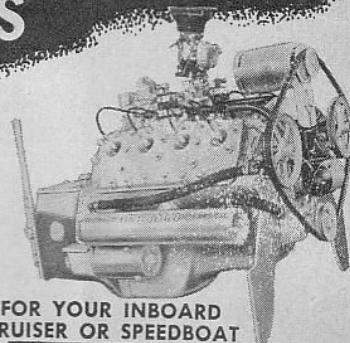
KENNY INGRAM

514 Museum Drive Los Angeles 65, Calif.

DEBBOLD MARINE ENGINES-CONVERSION KITS

FOR FORD AND MERCURY V-8 ENGINES
Manufactured by the World Renown
Speedboat Hardware Manufacturer

For smooth, powerful and dependable service, Debbold offers for the first time converted for marine use V-8 Ford, factory rebuilt engines. Completely assembled and equipped with the finest conversion equipment Debbolds have ever manufactured. Our Engine Kit includes 2-round water cooled exhaust manifolds, set of 4 engine hangers, pump brackets and pump plate covers, 2-rubber impeller water pumps, 2-pump pulleys, 1-small crankshaft pulley, 1-V-belt, 1-generator bracket, 1-carb. tilt plate, 1-approved flame arrester, all water lines and connections, water outlets, hose and clamps, bolts, studs, nuts and washers, and a genuine marine reverse gear "not the inferior automotive converted transmission!"



FOR YOUR INBOARD
CRUISER OR SPEEDBOAT

100 HP V-8 FORD
MARINE ENGINE

\$325 Complete Conversion Kit,
including Marine Reverse
Gear & Adaptor For Fresh
or Salt Water Use.

Big Savings

CONVERSION KITS, MARINE HARDWARE, FITTINGS AND EVERYTHING TO EQUIP YOUR CRUISER, SPEED-BOAT OR FULL RACING HYDRO OR RUNABOUT. We manufacture and distribute the largest selection of marine equipment for the builder of inboard power boats.

SEND 35¢ FOR BIG NEW CATALOG

I. E. Debbold's Marine Supply Co.
10366 Long Beach Blvd., Lynwood 5, Calif.
Please send me your big new marine catalog.
My 35¢ to be refunded first purchase.

Name _____
Address _____
City _____ State _____



I. E. DEBBOLD'S MARINE SUPPLY CO.
10366 LONG BEACH BLVD.
LYNWOOD 5, CALIFORNIA, U. S. A.

Water Hazard—Continued

the completed frame. If you have followed the dimensions exactly you should be able to juggle the patterns around so that each piece will have an excess of at least 1/2 an inch all the way around. (See layout in lower left corner of WATER HAZARD VI sheet.) In order to make certain that you'll be able to fit the sponson decks on the 4'x12' sheets be careful when bending the "one-piece" sponson chine-bow-sponson chine section so that its shape tends toward making a "pointed bow" rather than tending toward being "blunt."

Reinforcing

A large bending moment is imposed upon the transom when using a motor with hydrofoil attached and with the propeller nine to fifteen inches deeper than usual. This makes it necessary to reinforce the intersection of the four top-side longitudinal hull stringers with 2-inch by 2-inch cadmium-plated angles. The purpose of the two longitudinal 5/8" by 3" "splash boards" which are located sixteen inches apart in the bottom of the boat and parallel to the keel is to prevent any water which might accumulate from sloshing from side to side. The transfer of weight which accompanies sloshing would make it difficult to keep the boat in level flight. In addition these "splash boards" make convenient attachment points for the tube legs of the seats. Use 1/4" or larger bolts in fastening the seats.

Control Details

Referring now to the sheet of CONTROL DETAILS. The construction of the rudder pedals is practically self explanatory. The pedals are shown as being ten inches wide and they can be made as narrow as four or five inches. If the recommended eight-inch size is used, it will probably be best to use two hinges per rudder pedal. Be sure to use BOLTS and not wood screws to fasten the hinges and the angles to the pedals.

—OO—

To be continued in the next issue. Next month's article will include step-by-step instructions for the fabrication and assembly of all necessary parts, complete with detailed drawings and photos. Coming too are all the instructions for rigging up, flight testing and trimming and finally actual operating instructions — a regular short course in flying. As we go to press word comes from the author that they are now using with success the conventional length lower unit

without the extension that was necessary in the past. They have developed an easily attached motor foil for the standard lower unit.

The designers of the Hazard Hydrofoil invite all interested parties to write to them and get on the mailing list for the HAZARD HYDROFOIL NEWS which reports all new developments and information on this exciting new type of "flying boat." Address: 1908 Klein Ave., Las Cruces, N.M.

Accessories—Continued

ing the new Flexbac Pad Assembly for use on 1/4-inch electric drills or slow-speed polishers are shown by The Carborundum Co., Niagara Falls, N.Y.

Special outboard racing spark plugs are included in the line of Champion Spark Plug Co., Chicago, Ill.

Billy Boy boating equipment from Crotty Corp., Quincy, Mich., includes life jackets, racing and sportsman vests, boat cushions and boat and motor covers. New Ski-Jaks and Ski-Jak-Ettes afford complete protection for the water skier without hampering freedom of movement.

Filler cans with graduated oil measures and Duo-Pour detachable flexible spouts are marketed by Eagle Mfg. Co., Wellsburg, W. Va.

Marine safety equipment manufactured by Stearns Mfg. Co., St. Cloud, Minn., includes boat cushions, life jackets and vests, outboard motor covers and boat seat cushions.

Hydro-Flite water skis, aqua-planes and water saucers comprise the Chicago display of Hedlund Mfg. Co., Nokomis, Ill.

Boat fittings from Kainer & Co., Chicago, Ill., scale the nautical alphabet from "bearings, shaft and thrust" down to "windshield fittings." Corrosive-resistant special alloy materials are used throughout the Kainer line.

Kimball Mfg. Co., San Francisco, Calif., offers one-piece molded fiberglass water skis featuring special bindings with an automatic ratcheting lock for easy adjustment of heel plate. The company also manufactures single-bar and double-bar ski tow ropes.

Fiberglass boat covering and related materials are handled by Kristal Kraft, Inc., Palmetto, Fla.

Kuhls Sealtite, rubber base liquid sealer which expands and contracts

for an absolute watertight, oil resistant seal, is now offered by H. B. Fred Kuhls, Brooklyn, N.Y., in a plastic, squeeze-dispenser bottle.

Deep-water boarding for water skiers, swimmers and aqua-planers is made easy with the one-piece, welded aluminum alloy Aqua-Step of Lignacraft, Binghamton, N.Y. Easily attached and detached for use on boat, dock or float, the Aqua-Step may be used also as a ski tow-bar.

Propellers from Michigan Wheel Co., Grand Rapids, Mich., are cast of Michalloy-K, special alloy said by the manufacturer to be more resistant to corrosion and electrolysis than ordinary bronze.

Nearing a half-century of production for the marine industry, Phoenix Plating & Mfg. Co., Grand Rapids, Mich., offers a complete line of marine hardware in chromed brass, polished or plate brass.

Information on the construction of marinas is available from Socony-Vacuum Oil Co., Small Craft Div., New York, N.Y. Mobiloil marine products now include a tube with key attachment for outboard gear and grease oil, improved Little Skipper fenders and Mobiloil Outboard with the measuring scale on the reverse side of the can.

**CHRIS CRAFT
BOAT TRAILERS**

Styling to match modern motor cars and even-riding, road-hugging performance are features of Chris-Craft's new 1955 Boat Trailer line. All have individual wheel suspension with correctly proportioned conical springs allowing wheels to retract individually without affecting the balance of the load.

Larger trailers have shock absorbers for each wheel including individual "shocks" for all four wheels on tandem trailers. Tongles on all but the largest trailers are demountable for convenient storing. Streamlined yellow fenders are bolted onto extensions of the chassis frame and are actually strong enough to stand upon.

To facilitate easy launching and re-loading, center chassis beams are extended beyond the frame, at the rear of the trailer, so that the keel roller can be installed in a position where it can catch the weight of the boat while it's still in the water.

Editor's Note: A complete coverage of 1955 boats will appear in the next issue along with more on accessories.

Correspondence—Continued

take valves and also the number of oil and compression rings.

Ralph Barker,
Niagara Falls, N.Y.

We turned this one over to Ed Nabb who did the article. Here is his answer.—Ed.

"I am very sorry for the confusing statement about the piston rings in the Speed and Spray article. The 'four ring oil type' is local slang, and the deal is you use two oil and two compression rings. The two compression rings are 3/32nds and the oil rings are 5/32nds inch. The bottom ring is standard 3/4-inch, and the remaining three are 3/4 plus .030 over-size. No expanders are used.

"Removing excess metal from the underneath side of the valves has a two-fold purpose. It to some extent streamlines the valve, giving better mixture flow, but most important it lightens the valve enough to prevent 'valve float.' To accomplish the work, turn your valves in a small lathe, using a three-jaw universal chuck, and a sharp tool. Remove the excess metal from the under side of the valve. The amount can best be arrived at by studying the photos.

"Thompson Products have a good double spring setup, or if you prefer you may use the stock valve springs with a 1/16th-inch washer under the upper part. If you have any further difficulties contact the writer."

—Ed Nabb.

MORE PLYMOUTH

The technical article on the Screaming Plymouth is the finest ever published. Can you give me the address of Ambler, the manufacturer of the valve springs mentioned in the article. We are building up two of these engines.

Bill Knight,
Fort Worth, Tex.

Ed Nabb answers.—Ed.

"The Ambler referred to in the text was located on Germantown Avenue, in Philadelphia; but the latest phone directory does not list them. The identical valve spring setup is now manufactured by Thompson Products, and your local speed shop can get them for you. If you want to give it a try the stock springs can be made to do a good job. Use a 1/16th-inch washer under the upper end of the spring, and they work pretty well. Of course the double spring put out by Thompson or Ambler is better.

"Really the most important work you do is the clearance which you will work into the block and the

crank. Some substitutions on other parts of the engine setup may work for you, but Frank Foulke wrecked a lot of engines before he hit upon the proper clearances for the moving parts, and we recommend that you follow these directions to the letter. I suggest that you check the forthcoming issues of Speed and Spray for letters from other builders stating the questions, and the answers furnished them. Best wishes for your two engines."—Ed Nabb.

'136' and '135' PLANS WANTED

I have studied all the ads in your magazine and can't find any offering "136" Hydro and "135" Hydro plans. We have a group of members in our club who would like to get the "136" Class started here in Western Canada.

J. Van Bergen,
Port Alberni, B.C.

A very successful designer of inboard hydros recently advised us that in the very near future he would have plans available for all of the limited hydro classes. We will try to have authentic information on this in the next issue.—Ed.

Roostertail—Continued

running of this event over the course taken during the famed race between the river steamers *Robert E. Lee* and *Natchez*.

The original race between the two famed steamers took place 85 years ago and the winner, the *Robert E. Lee*, established the record time of 90 hours, 14 minutes; this was over a 218-mile course. Since that time the river channels have altered, shortening the course by almost 200 miles.

The present elapsed time record for the New Orleans-St. Louis run, 56 hours and 56 minutes, was set by Lee R. Sawyer, St. Louis, last August. The record for the New Orleans-Alton race, 23 miles longer, also set last year, was established by Roy F. Smith, Alton, when he made the gruelling

(Continued on Page 40)

THE CHOICE OF CHAMPIONS

THE RECORDS TELL THE STORY

Tinker Toy • Lou Kay • Screaming Eagle • Little Joe • Guess Who • Flying Saucer • Stinger III • Alter Ego • Sunshine Baby • Roughneck • 8 Ball • E'Gad • Slipper-E •

Hi J

Taper Bored
Inboard Race Props

HAROLD I. JOHNSON
2811 Villa Way, Newport Beach, Calif.

Mishey

AMERICAN CUSTOM BUILT
America's finest custom built racing boats

Hydroplanes — Runabouts
For Racing and Stock Motors

Original* in Design and Construction
Outstanding* in Quality and Performance

Mercury Motors - Fuel - Props - Helmets
All Racing Equipment

Send for Folder

Geo. Mishey, 2872 Grand Ave.,
Phoenix, Ariz.

A Valuable Book

Secrets of (Stock) Outboard Motorboat Racing

Information on:
Balancing the Boat
Setting up Motor
Proper Propellers
Running the Race

FOR EVERY OUTBOARD DRIVER
\$3.00 Postpaid

VAN PELT BOAT CO., Spring Lake 2Mich.

48ers LARGEST PRODUCER OF 48 COMPONENTS

- complete rigs
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- AMAL manifolds
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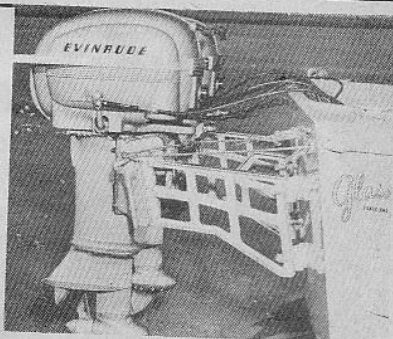
Speedsmith

CROOKSHANK ROAD
CINCINNATI 38, OHIO

Rubber Cushioned Outboard Motor Mounts

From \$42.50 to \$69.30

- A. New S25 and D25 models are adjustable. This assures easy installation with propeller at best depth for maximum performance.
- B. All four models are Heavy-Duty, permanent-in-place, safe instalations—an integral part of the hull. No joints or hinges to become worn or rattle.
- C. New D25 handles single or double motors. All mounts are equipped with remote steering hook-up brackets.



Pats. Pend.

Write For Full Information Today

Magic Tools, Inc., 991 Williams St. San Leandro, California

TRADE NOTES



made me high-point winner in A Class and second-high in B Class. The boat is a wonderful design and is tops in rough water. The only thing I think could be improved on it is that there should be one more frame put between No. 4 and 5 frame for a little more strength. The pounding I gave it in rough water broke both No. 4 and 5 frames inside the coamings but I repaired them and kept right on winning with it. I only flipped once with it but it was my own fault—not the boat's. I am going to build a new boat just like it for the '55 season, but before I do I would like to know if you have changed your design. If you have I will send for new plans. I could write all night about my boat because the design is the best.

P.S. The boys I ran against weren't slow. There are 26 clubs that belong to the Delaware River Yachtsman's League and each club puts on a race on Saturday and Sunday. That is the league in which I got high-point award.

George Stillwill,
Box 326 Chews P.O.
Glendora, N.J.

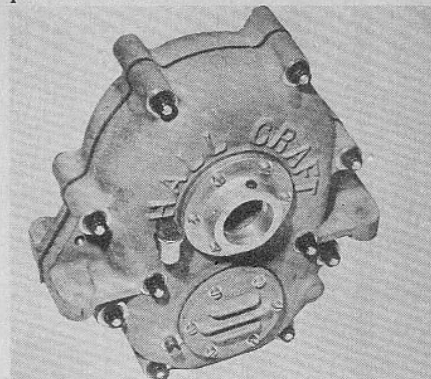
Sparky Outboard Ignition Tester tests spark to motor manufacturer's specifications at home or on the beach. Eliminate question of faulty ignition with this handy tool. Shipped anywhere in U.S.A. by Air \$1.00. Randolph Hubbell, 2511 No. Rosemead Blvd., El Monte, Calif.



The Hubbell transfer passage reed blocks described in the article in this issue "More Air for the Mercury" are available at \$10.00 each from the manufacturer. The mounting price labor charge is \$4.00 each. Hubbell catalog available.

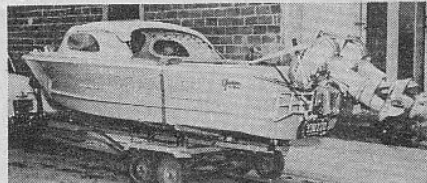
Hall Craft Boat Works of Los Angeles, manufacturers of Hall Craft "V" Drives and Gear Boxes announce that they have recently added facilities to provide complete marine machine work. Hall Craft are distributors for Stannus Propellers and also builders of Ski Boats, E Racing Runabouts and Hydros. Their gear boxes, extremely light in weight (24 pounds) are equally popular with the racing

driver and the fast runabout owner. Gear ratio change can be accomplished in 20 minutes.



The assembly is splined, not tied, which the builders feel is partially responsible for the fact that there is no record of failure in any of the boxes manufactured . . . some of them in constant use for five years. The gears are heat-treated with straight-cut teeth and bearings are Timken Taper Thrust and New Departure ball bearing. Gear ratios are designed to work under all conditions with racing conversions of the Chevrolet, Cadillac, DeSoto and Dodge, and any other motor now currently in use.

Magic Tool Company of Hawyard, Calif. offer a new design in Rubber Cushioned Outboard Motor Mounts.



Four models are now available, offering dealers a complete line for every type of outboard cruiser and motor regardless of size. New special metal shims make installation simple on boats with curved or flat transoms of any pitch. The twin mount models are designed to also handle a single motor, giving the owner the option of using either one or two motors. Several models permit the raising or lowering of the false transom for most efficient motor hight. Mounts are rubber cushioned to eliminate noise and hull vibration and are equipped with remote steering hook-up brackets so designed that steering need not be disconnected even when motors are tilted up.

Fred Wickens Boat Works of Inglewood, Calif., designers and builders of custom Ski Boats and Racing Boats. The Wickens Ski Boat is an 18-footer with a beam of 83 inches, offered in two freeboard heights, 23 or 26 inches, is available as a finished boat or

Mishey Boats and Motors of Phoenix, Ari., builders of Outboard Racing Hydroplanes offer their complete line for 1955. The line includes Midget, A-B, C-D, F and a custom runabout. Mishey boats are staunchly built of the finest materials, using proven methods of fastening to produce a hull that will retain its true form and not warp out of line. Careful consideration is given to the balance of the fore and aft planes. At planing speed a properly set-up Mishey will run high and level with side spray entirely absent. All boats are custom finished with special exclusive hardware, and sponge rubber padded cockpit. Circular available.

Challenge Boat Plans of Costa Mesa, Calif., (See ad in this issue), who offer a complete line of "easy to follow" building plans for outboard racing boats, ski tugs and fast pleasure boats wound up the 1954 season with many satisfied customers. Following are a pair of unsolicited testimonial letters that speak for themselves:

Nov. 26, 1954

Dear Sirs:

I bought a Challenge Plan for a hydroplane and I thought you would like to know the boat I built from your plans won high-point trophy in Canada for stock hydro, Class A Hydro; and was also very good in B Hydro Stock.

Yours truly,

Mr. James S. Aldredge,
Highland Creek P.O.
R.R. No. 1, Ontario, Can.

Nov. 20, 1954

Gentlemen:

I am enclosing a photograph of the A-B Hydro I built from your Challenge Plans. I ran both Classes A and B with it and in rough water most of the time on the Delaware River. I won 16 first-place trophies, 2 seconds and 2 thirds. I earned 8,100 points in A Class and 4,726 points in B Class for a total of 12,826 for both. It

in frame kits—oak or poplar. These popular fast ski-tow boats have built up an enviable reputation for stability—not a single record of a flip in 4 years. The Wickens custom racing line wound up the 1954 season with a fine record also. Carl Maginn's Hot Ice—National Champion and both the 1- and 5-mile records for the Cracker Boxes. Marion Beavers' Little Beaver—also a clean sweep: Champion and both records. Doc Hardin's E-Gad—the 5-mile record. Howard Johansen's 226 Class Mixmaster, another Wickens creation, has been flirting with the record in this class for two seasons.

Johnson Propeller Company of Oakland, Calif. now have "OJ" propellers available for the Service C and Racing C Runabouts and Hydros and F Racing Runabouts and Hydros. We have also developed three blade bronze propellers in the "OJ" design for water skiing and heavier loads for the Mark 40 engine equipped with either the stock or Quicksilver units. In our new Super "OJ" series, propellers are available for the Stock AU Runabout and A Hydro and Stock DU Runabout and D Hydro classes. The new Class A and F Outboard Hydro mile straightaway and competition records were set with "OJ" propellers, also the Class D Hydro.



The following APBA records were established during the '54 racing season by Bud Wiget, left, Concord, Calif., driver, and Roy Hansen, Berkeley, Calif., deck rider and mechanic.

- 63.811 mph—1 mile
Seattle, Wash.
- 55.752 mph—5 miles
Devil's Lake, Ore.

An Evinrude 4-60 powered the De Silva F Racing Runabout, shown here just prior to establishing the 1-mile standard at Devil's Lake, Ore.

SPEED and SPRAY, April 1955

De Silva Racing Boats had a successful season during the '54 campaign.

The De Silva "Marque" captured four World Records and six National Championships. Bud Wiget, Concord, Calif., startled the outboard racing group by establishing all the runabout records in the C and F Classes.

Bill Tenney, Vandalia, O., proved his consistency by winning both the NOA and APBA Championships in the C Racing Runabout Classes. He also established the NOA 1-mile mark, C Racing Runabout, 62.5 mph.

Bob Parish, Bakersfield, Calif., was high-point driver at the APBA Stock Nationals by winning the B Hydro Class and placing second in B Runabout, and third in A Hydro. Sixteen-year-old Bobby won the race for Stock High Point Champion.

Ron Loomis, Santa Barbara, Calif., in his first year of racing, drove his De Silva Runabout to the CU Championship at the APBA Stock Nationals.

Dave Livingston, Lake Village, Ark., and Ellis Willoughby, Alexander, Ill., respectively drove their De Silva Runabouts to the NOA C Service and Free-For-All Runabout Championships.

'55 models will incorporate important modifications. The Super Runabout design, initiated for the '52 season, has proved to be an exceptionally fine performing boat; and is the basis upon which most of the De Silva Runabout models are now produced.

Grossman Marine Supply House of St. Louis, Mo., offers Cyclone Exhaust Manifolds. These manifolds are made of one piece, cast aluminum, water jacketed and cooled, machined to fit perfectly on Mercury Models KG4, KE7, KF7, KG7, KH7, Mark 15 and Mark 20 on the "B" Model, and on the KF 9, KG9, and Mark 40 on the "D" Model. Water comes out with the exhaust, keeping the manifold cool all the time. Provision is made so that a plate can be used to close it quickly. Immediately available.

For the first time in its history, I. E. Debbold Marine Supply Company of Lynwood, Calif., is offering its customers a complete, marine conversion kit for Ford and Mercury V-8 engines. The kit includes a marine reverse gear and adaptor for fresh and saltwater use.

Also included in the new conversion kit are two, round water-cooled exhaust manifolds; a set of four engine hangers; pump brackets and pump plate covers; two pump pul-

(Continued on Page 42)

De Silva Boats

World Records '54—1 & 5 Miles:

- C Racing Run. 63.5 mph Bud Wiget
- C Racing Run. 57.8 mph Bud Wiget
- F Racing Run. 63.8 mph Bud Wiget
- F Racing Run. 55.7 mph Bud Wiget

De Silva racing boats are the leaders today and will be the leaders in the future. Experience in racing since 1926.

3215 So. La Cienega Boulevard
Culver City, California
VERmont 9-3238

NOW AVAILABLE HALL-CRAFT GEAR BOX



SAME AS
USED IN "MIXMASTER"

QUICK CHANGE
20 Min. to Change
Gears

LITE WEIGHT
24 lbs.

Available Either as V-Drive or In-Line

GEAR RATIOS
OVERDRIVE 1-1, 1.11-1, 1.16-1, 1.22-1, 1.28-1,
1.35-1, 1.5-1
UNDERDRIVE 1.11-1, 1.22-1

GEAR BOX COMPLETE.....\$150.00
EXTRA SETS GEARS..... 25.00
TACK DRIVE ADAPTER PLATE..... 2.75
Plus Freight and Tax

Gear Boxes for 7 LITRE Hydros available on Special Order. Same price and approximately same size and weight as Standard Box.

HALL-CRAFT GEAR BOX

9209 S. Avalon
Los Angeles 3, California

WORLD'S LARGEST STOCK OF RACING
OUTBOARD MOTORS AND PARTS

Randolph Hubbell

2511 Rosemead Blvd.,
El Monte, California

SHOP PHONE: LOS ANGELES F0rest 0-5912
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WORLD RECORD "48" EQUIPMENT

87.135 MPH—Duane Allen

NATIONAL CHAMP 1953-1954
Gillette Smith

NATIONAL HI PT. 1953-1954
F. C. (Doc) Moore

These 48 record holders used K-H
CAMS—

Mull and Ruby Scull, Vic Klette, Pete
Pierce, Bob McAllister, Ty Bain.

Write: Kenny Harman,

K-H CAMS

2511 N. Rosemead Blvd.
El Monte, Calif.

CLASSIFIED

Classified advertising rate: 20 cents per word — \$4.00 minimum charge — payments in advance.

FOR SALE—Plymouth 222 Cu. In. racing engine. Full House, built up under Frank Foulke specifications — \$650.00. Write for particulars, Ralph Barker, 1719 Pierce Avenue, Niagara Falls, N. Y.

FOR SALE—Johnson A, B, C motors and parts. Jacoby A conventional. Trades considered. Dean Worcester, RFD 1, Silver Spring Md.

Please insert this "For Sale" ad in the classified section of the World's only real good boating magazine.

FOR SALE—1954 135 cu. in. National Champion Hydro 8 Ball 4th. This boat has won over 50 heats and is the strongest 135 hull in the country today. All of its wins were with straight alcohol—no nitro was used. This boat is especially fine for some one new to 135's and yet is a champion. Complete with two props \$1,690.00—with trailer \$1,850.00. My only reason for selling is that I have just completed a new 266. Jim Townsend, 2545 Procter St., Port Arthur, Texas

BROOKS RUNABOUT—16' Plywood hull, Mahog. Deck. All like new. Mercury 185 H.P. Engine, Twin carbs, 50 MPH. \$2,150.00 cash, terms, trade. Fred Sopjes, 728 Whitcomb Drive, Kalamazoo, Michigan.

SELLING OUTBOARDS TO DRIVE IN-BOARDS—Ronnie Smith's prize winning Jersey Devil outboard outfit complete \$2,000.00. Worth new \$4,000.00. Will sell separate units as follows: Mercury 20H \$275.00; Mercury 20H \$275.00; Mercury KG4, \$200.00; Mercury KG4, \$200.00; Mercury KG4 Power Head, \$175.00; A & B Sid Craft Utility, \$250.00; B Sid Craft Utility, \$250.00; A & B Swift Hydro, \$200.00; Trailer, \$300.00. This outfit took more than forty trophies this season and is now in better than new racing condition. George L. Smith, 500 High Street, Mount Holly, New Jersey.

FOR SALE—1954 D Utility Speedliner, Model M213 Zephyr, perfect condition. Placed 5th in the Nationals at DePere, Wisconsin. Complete Hardware. Bottom perfect. Price \$325.00. Contact: Merle Oliver, 310 Armstrong Street, Greenville, Ohio. Phone 1764 or 1529.

WANTED—A RICH Millionaire or several hundred smaller investors who can visualize the future of the Patented WATER HAZARD Hydrofoil Boats described in the article "How To Build A WATER HAZARD." If YOU are an interested millionaire don't even bother to write—just pick up the phone and call "Hap" at Jackson 6-8426 in Las Cruces, N. M., and let him tell you all about the potentials of a good investment. It could be better than acres of oil wells and at the worst you might find relief from some of your income tax burden. Drop us a line for information. HAZARD HYDROFOIL, 1908 Klein Ave., Las Cruces, N. M.

Roostertail—Continued

trip in 63 hours flat.

The Piasa Challenge Trophy is awarded to the winner. Inquiries on the event should go to the Piasa Boating Association, 112 East Broadway, Alton, Ill.

Stock Outboarders will actually be shooting for the "Pot of Gold" in the Stockton, Calif., to Redding, Calif., marathon on August 4, 5, 6, and 7. Advance information has it that the purse will be \$12,000 in cash plus merchandise prizes. The event will be jointly sponsored by the Chambers of Commerce of the towns on the river. This will be a two-day event with an overnight stopover at the end of the first leg. The total distance between Stockton and Redding is 315 miles which will put this one up as a real test of the driver and the outfit. Crews can follow the race in cars along the highways that skirt the river bank for many miles. 400 patrol boats will look after the races. This should be a real show.

CLUB NEWS



Fourth annual boat show sponsored by the Modesto Power Boat Club is scheduled for April 2nd and 3rd in McHenry Village Shopping Center, just north of Modesto, Calif., at McHenry and Granger Avenues.

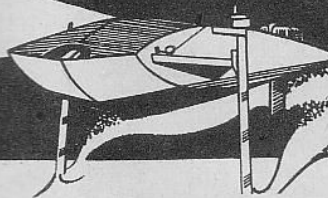
Included in the show will be power boats, inboard, outboard and cruisers; sailboats, boat trailers, equipment and accessories, house trailers and sports cars. Last year, more than 26,000 persons from as far as Fresno and Sacramento attended the show.

One of the features this year will be the exhibition of *Breathless*, 38 foot Gold Cup racer, owned by J. R. Murphy of Oakland. Known to have hit close to 175 miles per hour, it is valued at about \$100,000 and is one of approximately 25 such boats in the country.

The Golden Anchor Boat Club of Tracy, San Joaquin County, plans to show about 12 boats, including a Century Resorter, an inboard designed especially for pulling water skis. Sixty miles an hour is routine operating speed for this craft. An airboat, now under construction, will be on display.

Free prizes are to be awarded every hour. No admission charge for the show.

hazard hydrofoil



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Set of two struts with hydrofoils and motor foil, \$125.
Complete set of finished hardware, \$250.

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For attractive advertising rates write to Dealer Directory, Box 247, Newport Beach, Calif.

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OUTBOARD RACING HULLS—All Types

Down Under—Continued

cover the planking with a layer of birch aircraft three-ply 1/16" thick, the fastening being glue and hundreds of little brass boot brads driven through and clinched over. The re-
SPEED and SPRAY, April 1955

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sult is a bottom very slightly thicker than 1/4" which is hoped will hang together satisfactorily. The inside of the hull was painted with a dilute mix of the same glue and let to soak into the planks and so seal it before painting. The running faces of the sponsons were done in a similar manner, first of all a layer of 3/8" kahikatea planking then another of 3/8" tane-

kaha. The idea behind the use of these local timbers was that the kahikatea whilst being very strong and light, is awful soft, and doesn't wear well. The tanekaha has high resistance to scuffing as well as high strength. Zane Grey was an expert on the latter, as he used it for his top-grade deep-sea fishing rods, it's very springy. Local made kahikatea ply 1/4" on the sides and 3/16" in the deck completed that part. The bow arch was prefabricated out of 1/4" ply glued together on a former, the complete piece being then sliced into the chines and shears. Quite a job! For the main frames, Canadian aircraft grade birch plus a little local timbers in odd places. The whole assembly hasn't been weighed, but including part of the engine cowls, the tail, interior steering, and light alloy tank, can be readily lifted by two men without a grunt, possibly around 230 pounds I'd guess at.

Power is Merc Ford bored to 3 5/16" and fitted with a complete set of American race gear. This outfit might go with any sort of luck.

Speaking of American race gear, the local boaties have very little chance of ever getting near it, due, first of all, to the current dollar shortage, and secondly to the fabulous landed cost, most just can't afford to have it. Local tariffs, sales tax and freight added to the original dollar cost nearly trebles the American price. This problem has hampered our race men all along and goes a long way towards explaining why our performance figures don't rate so good. Fortunately, the odd piece is coming in and what with having a look at that and what can be gathered from speed magazines, one or two keen types are producing a local article which has helped a lot. Ron Hogan in Auckland is probably the best known of these types having got cracking three or four years back. He turns out a really useful set of bits and pieces for Ford and Dodge blocks, which includes twin ignition high com heads in light alloy for Ford V-8, Ford 6 and the Dodge line—twin inlet manifolds, pistons and fly wheels. Under development are several more fancy lines, main one of which is a twin ignition set for Ford V-8 or Merc based on a double '49 distributor which is a particularly cunning setup. He has also done several conversions of Bendix Scintilla aircraft mags which show considerable genius. His gear has sold well and is probably the most widely used in the game. I've used it myself for some years and find it quite satisfactory. There are one or two improvements which could be made no doubt, but

he's on the right track and little difficulties will be overcome in time.

Two others whose names come readily to mind are those of Mel Smith of Tauranga and Hec Green from Christchurch, both of whom are just getting under way as camshaft specialists. I've not used or seen any of their work as yet so can't comment, but I do know their own power is worthwhile. On a different tack are Leo Young and Ian Jarvie of Auckland who have done a lot of work on propellers and last season produced a fair proportion of blades successfully used. Carl Augustin, also of Auckland is in the same game, and he's also had a lot of good results, particularly for the smaller classes. I was talking to Carl's son, Ron, recently and I'm told that another Augustin hull is on the stocks. It appears to be similar in design to Carl's earlier productions such as *Grey Goose*, but as I've not seen it, can't swear to that. In actual runabout hull construction, Carl is probably the most successful, if you base your reckoning on straight counting, but if Olie Smith from Rotorua gets into mass production on his Scramble hulls, then it will be a different story. As it is, Olie must take the prize for top boat. In the hydro hull line, Ian Jarvie must still be reckoned the top mass-producer, with such hulls as *Hammerhead*, *Stingray*, and *Typhoon* to his credit. Individuals have built some very good singles, mostly for their own use, but they are not in the professional class, as Ian is.

Taken all round, the new figures produced at the end of last season, the increasing availability of special race gear, and the new hulls coming along, the signs are all for a bang-up show this year.

Water cooled manifold for Ford, Mercury and Oldsmobile engines, one of the Debbold Marine Supply Co. products for marine conversions.



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HARDWARE & GLASSING

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Trade Notes—Continued

leys; a V-belt, generator bracket, carburetor tilt plate, and approved flame arrestor; as well as all water lines and connections, water outlets, hose and clamps, bolts, studs, nuts, and washers.

It has been pointed out by the manufacturer that the reverse gear, supplied with the kit, is a genuine marine reverse gear and "not an inferior, automotive converted transmission."

In addition to the new conversion kit, builders of inboard power boats may also obtain, for the first time, factory-rebuilt, 100-hp, V-8 Ford engines, completely converted for marine use by the Debbold Company.

The Debbold Company state that they are now the world's largest manufacturer and distributor of marine hardware and accessories to equip inboard racing hydros and runabouts, speedboats and small kit built cruisers. They manufacture more than 100 items not manufactured by others including a new design in water cooled manifolds for Ford, Mercury and Oldsmobile engines. These manifolds, they state, are lighter, have better cooling characteristics, are precision machined and easier to install than others of this type.

In addition to the items they manufacture, the company also represents as distributor and jobber, 20 of the leading manufacturers of marine products who offer several hundred items.

The Debbold Marine Supply Company catalog of their own products, illustrated the entire line for 1955 is now ready for distribution (see their ad in this issue).

Flash!

The word is out that the Pacific Coast Water Ski Championships are definitely scheduled for Long Beach Marine Stadium, Long Beach, Calif., August 12th through the 14th.

Ray Crawford the Santa Monica chain store operator has teamed up with Howard Gidovlenko in production of a new Gold Cup challenger which will be ready for the big race at Seattle this year. Crawford was the winner in the big stock car division of the 1954 Mexican Road Race — first man of the Lincoln team to cross the finish line. Ray also races Midgets with considerable success—third several weeks ago to a big field including the top Indianapolis drivers. Gidovlenko, who produced the souped up Allisons for several of the Slo-Moshuns on various occasions is a wizzard on the big aircraft motors—his firm, Avia Union really gets the horsepower out of the big jobs. Given a good hull and the hp that Howard produced for the Hurricane at Salton Sea last fall we can expect to see a fiery challenger. Both of the co-owners are used to lots of speed and tight going. Howard cut his teeth on aircraft racing and he drives a mean boat. Have you seen the Lincoln film of the Mexican Road Race? This Crawford won't have to give any race boat driver any room.

Bill Stead, Reno sportsman, returned recently from a visit to Detroit with the word that the Eastern Unlimiteds would be quite interested in a race at Lake Mead. Negotiations are under way.

HOWARD'S CAM AND FUEL INJECTORS SET ANOTHER NEW WORLD

"E" INBOARD RACING RUNABOUT RECORD



"HULL BY WICKINS"

"E GAD" Doc Hardins Dodge Powered Runabout set a new World Competition record at Salton Sea November 6, 1954, averaging 72.757 MPH using straight Mentholal.

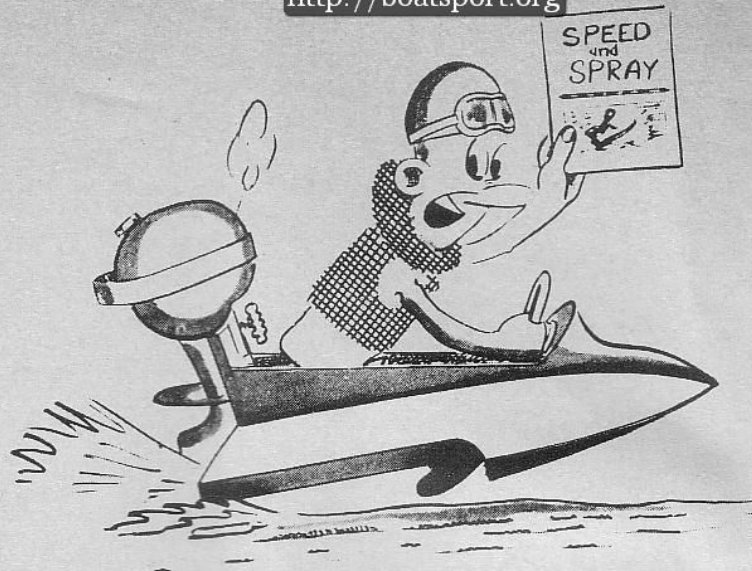
HOWARD'S Steel Billet Cam Shaft Kits, pistons, adjustable push rods for all OHV V-8 engines now available for immediate delivery.



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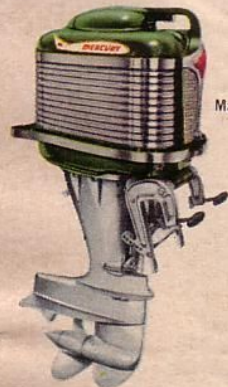
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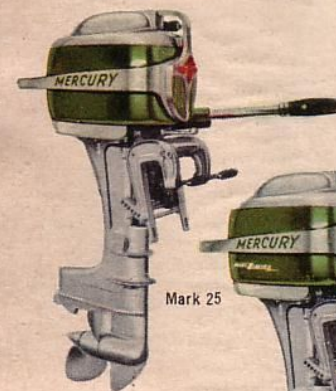
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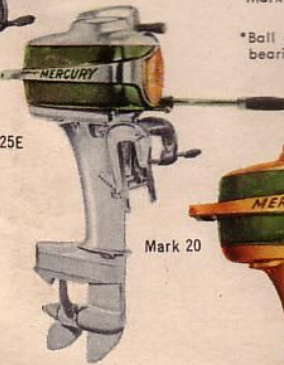
MERCURY for 1955



Mark 25



Mark 25E



Mark 20



Mark 40H



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furnished as standard
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*Ball and roller
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As usual, the 1955 Mercury line offers *more power, more features and more performance* than any other outboards — *plus* more models to match every purpose, and every purse! See them at your dealer's now! He's listed in the yellow pages of your telephone book. Go quality — buy Mercury!

*Horsepower determined in accordance with the requirements of the Society of Automotive Engineers Gasoline Engine Test Code.

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Turns Night-time Into Cruise-time! New Super Quiet!

MARK 55 MercElectric 40 h.p.* The only 4 Cylinder in Line Alternate Firing Outboard in the world. It's bound to be smoother, faster than any over-sized twin. Famous Thunderbolt engine.

Makes outboard cruising *all fun, all the time*, with the *first and only* 12-volt starter-generator system on any outboard! MercElectric AC generator keeps battery fully charged so you can operate lights, radio, accessories. Turn-the-key starting, with ignition lock, push-button choke, throttle and shift mounted together. Complete engine silencing, not just intake and exhaust silencing, gives you quietness without loss of performance. New Dynaflex Suspension with famous Lord shear mounts keeps vibration away from your boat.

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This Hurricane Whispers!

MARK 25 18 h.p.* Alternate Twin, Hurricane Engine, Reverse Gear and Neutral, Complete Engine Silencing and Dynaflex Suspension.

Sets new highs in quietness and smoothness — even for a Mercury! Complete engine silencing and Dynaflex Suspension mean quiet operation without sacrificing performance. With its new high compression power-head, the Mark 25 gives you more working power per pound of weight than any other outboard on earth!

NEW! World's Lightest, Most Compact Outboard with Electric Starting!

MARK 25E 18 h.p.* Alternate Twin, Hurricane Engine, Reverse Gear and Neutral, Complete Engine Silencing and Dynaflex Suspension

It's quiet! It's light! It starts electrically! All the quietness, performance and clean good looks of the Mark 25 — with Mercury's exclusive 12-volt MercElectric ignition key starter. Automatic rewind starter included for extra convenience and safety.

Speaks Softly — Carries A Big Kick!

MARK 6 5.9 h.p.* Alternate Twin, Comet Engine — Push-Button Neutral, Complete Engine Silencing and Remote Fuel Tank

This new "Super Silent Six" is soft music at a troll — a mere murmur of sound at open throttle. Complete engine silencing does it. The Mark 6 has Twist-Grip Synchronized Spark and Throttle Control specially designed for use with its 360° steering, Single Snap Quick Detachable Cowl, 100% ball and roller bearing construction, Dual-Purpose drive for truly weedless operation and much more. Weighs only 42 lbs.!

MARK 20 16 h.p.* Alternate Twin, Hurricane Engine
The 16 h.p. outboard that outperforms, outruns and *outlasts* many outboards of greater size and weight. Reverse Gear and Neutral, Remote Fuel Tank, Twist-Grip Spark and Throttle Control.

MARK 5 5 h.p.* Alternate Twin
Only '5' anywhere with 100% ball and roller bearing construction! Push-Button Clutch . . . full maneuverability with Full Efficiency Reverse, rear steering handle . . . Dual-Purpose Drive, truly weedless operation . . . weighs only 40 pounds!

MARK 7 7.5 h.p.* Alternate Twin, Rocket Engine
Power without frills. Here's the sportsman's choice for dependable outboarding, easy operation, smooth power.

MARK 20H *King of Class B Stock Utility Competition*

With famous Mercury Quicksilver Lower Unit . . . Hurricane-fast acceleration . . . beauty to match its thrilling, flashing speed!

MARK 40H *NEW Record-Breaker for Class D*
Sizzlingest thrill-mill on the water, with speed and power to match its raring-to-go styling! Quicksilver Lower Unit, advanced Kiekhaefer engineered performance, rocket-fast acceleration.