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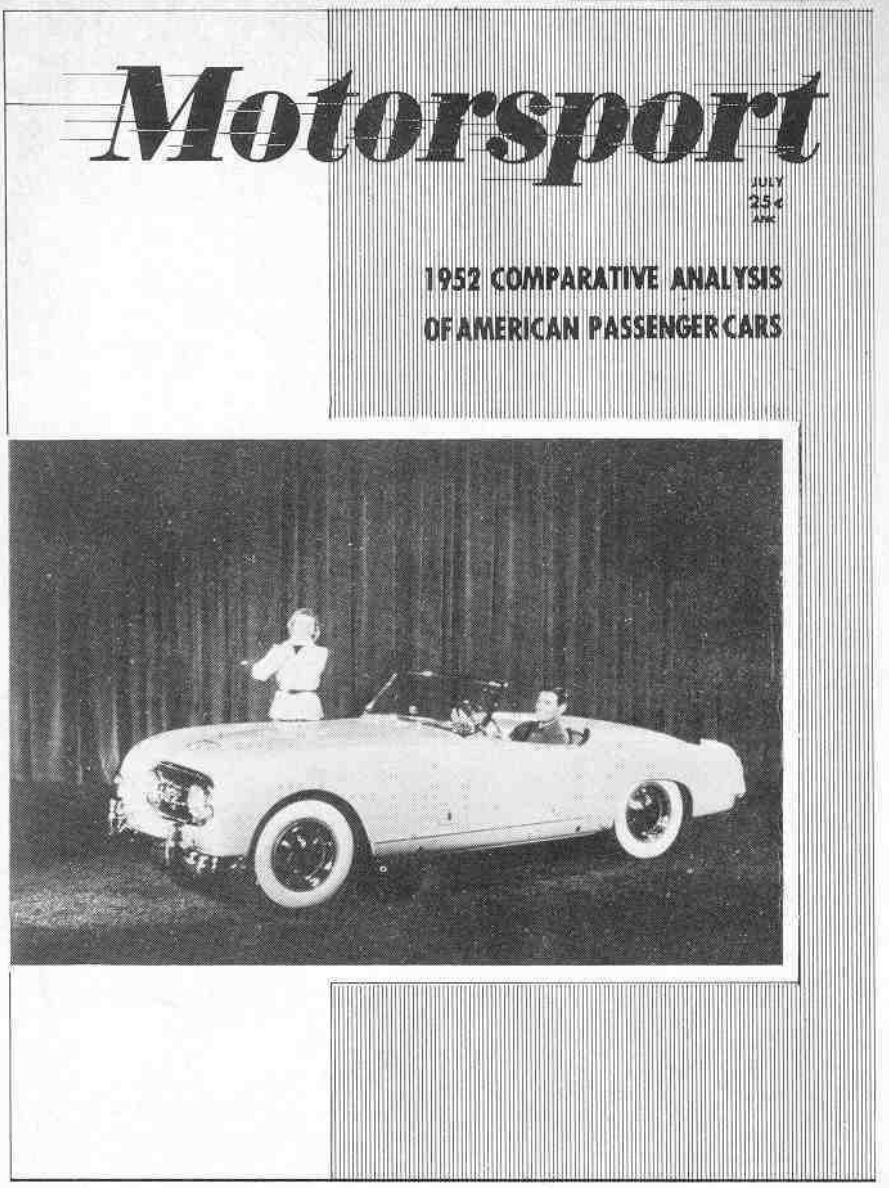
HOW IT FEELS TO DRIVE OVER 160 M.P.H. ON WATER . . .
STANLEY S. SAYRES



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BOAT SPORT

August, 1952 Vol. 1 No. 2
(Whole number two)

CONTENTS

Photos in this issue from: H. Wieand Bowman, Bob Ruskauff, Steve Cresse, United Press-Acme, Gulf Oil Corp., Seekconk Waterbowl (Hank Dyer), Switzer-Craft, Kiekhaefer Aeromarine Motors, Johnson Motors, Evinrude Motors, Scott-Atwater Motors, Martin Motors, Stanley S. Sayres, Wallace Francisco and Morris Rosenfeld.

BOAT SPORT is published Bi-Monthly by Rockley Publications, Inc., 1140 East West Highway, Silver Spring, Maryland. Editorial and Executive offices: 215 Fourth Ave., New York 3, N. Y. Application for entry as Second Class matter at the Post Office at Silver Spring, Md., pending. Although unsolicited manuscripts and pictures are handled with care, this magazine assumes no responsibility for their safety. Printed in U.S.A. **For advertising rates address:** Advertising Department, **BOAT SPORT,** 215 Fourth Ave., New York 3, N. Y. (Phone GRamercy 5-2509) West Coast Repr.: Ned **BRYDONE-JACK,** 714 W. Olympic Blvd., Los Angeles 15, Calif. (Richmond 9327). **Subscription rates:** $1.50 per annual subscription in U.S.A., its possessions and countries in the Pan-American Postal Union—$2.00 in Canada and elsewhere. Two-year subscriptions $2.50 in U.S.A. its possessions, and countries in the Pan-American Union—$3.50 in Canada and elsewhere.

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This Month's Cover . . .

GIL PETERMANN is the current Class A Outboard Hydroplane National Champion. Since 1947 the one-time Bronx, New York, now Malverne, Long Island, professional has been just about the hottest thing on the outboarding scene—at least in his class. In fact, although Gil largely sticks to the 14 cubic inch shingles, in 1950 at the Eastern Divisionals he was offered a C job. Uh-huh, you guessed it! Gil bounced out two solid first spots to take the sectional championship in a class in which he'd never before competed.

In recent years when Gil appears at a regatta the other hot A drivers start figuring on who they'll have to beat out for second as that first spot is automatically labelled Petermann.

His winning isn't inevitable although it almost seems that way. In 1951 Gil, who has a habit of crowding the starting clock, lost out on a couple of events because of disqualification, but the only heat he finished poorer than first was one at Lake Como, Pa. in which Doc Williams led him to the checker. This was reminiscent of old times when Gil started his rapid climb to the top.

Gil's racing history dates to 1935, a homemade hydro and a bailing wire motor. He was like any other newcomer then, usually an also-ran. Actually, until after World War II, Petermann was strictly just another stroker.

Then in 1947, along with about 35 other hydro drivers, Gil started to race at the Aquadrome, a ¼-mile land-locked Pennsylvania water speedway. Until Petermann's debut, veteran Doc Williams had as much as owned the Aquadrome in his class. Petermann changed the results in short order. A few weeks of finishing second and Gil started the practice that has been responsible for his success in the past four years. During the week he spent countless hours

(*Turn to Page* 33)

(Above) Slo-Mo-Shun IV on one of its world record runs. Photo taken on June 26, 1950. Note the groove in water cut by the boat's propeller.

(Left) Ted Jones, Lou Fageol and Stan Sayres have all driven Slo-Mo-Shun V faster than 160 m.p.h.

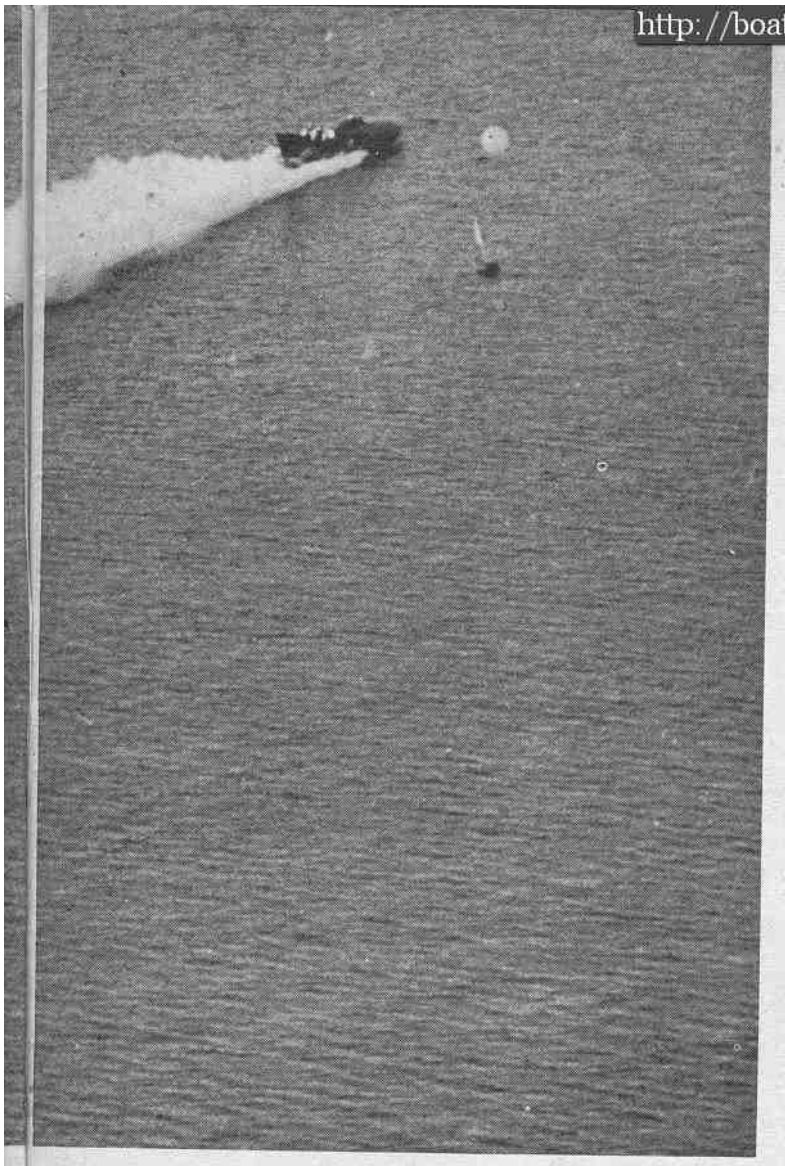
I am often asked how it feels to drive a boat over 160 m.p.h.

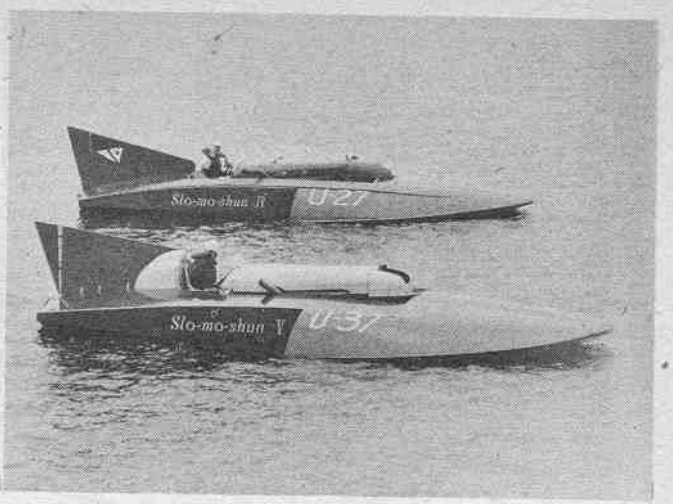
Were I gifted with eloquence or the ability to dramatize, I could give you quite a story. Lacking both, I am afraid my version will be a bit prosaic.

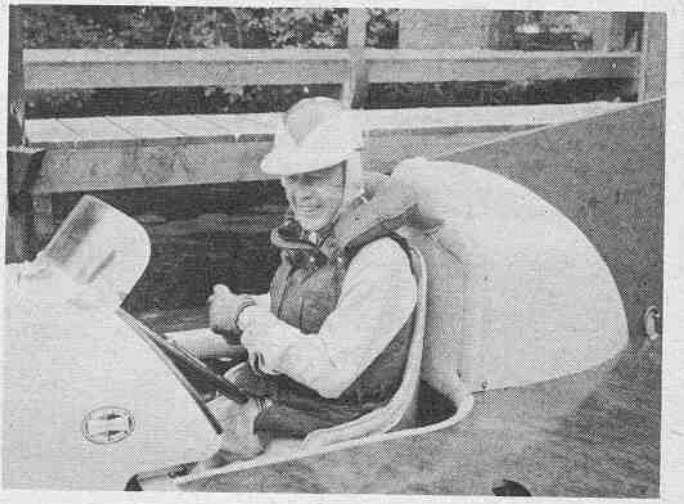
To me, driving a boat over 160 m.p.h. offers real fun, a great thrill and the satisfaction of reaching a mark established in my own mind a number of years ago.

In my opinion, the love of speed (whatever the vehicle) is a trait we are born with, or without. If you have it, the ailment is progressive—you are never quite satisfied—you are always wanting more.

I well remember the first time I ever drove an outboard more than 40 m.p.h. —the first time I drove 60 and then 70 and 80 and 90 in an inboard. Each mark







(Upper photo) Slo-Mo-Shun IV and Slo-Mo-Shun V rest side by side before making runs in good water needed for speeds over 160 m.p.h. mark.

(Lower photo) Owner-driver Stan Sayres ready for take-off in Slo-V.

HOW IT FEELS TO DRIVE OVER 160 M.P.H. ON WATER!

IF YOU'RE BORN WITH A LOVE OF SPEED YOU'RE NEVER SATISFIED — YOU ARE ALWAYS WANTING MORE.....

BY STANLEY S. SAYRES

was fun, thrilling and satisfying. Each upward notch in the initial running of "Slo-Mo-Shun IV" was the same story—the first 100—the first 120 and then faster.

Driving up in the 160 mile speed bracket is a matter of the desire, good eyesight, judgment of distance, fast reactions and experience. So far as the physical sensations are concerned, we must run 160 on good water, so the ride is smooth and comfortable. The vibration is considerable—the noise from the exhaust, supercharger and step-up gears is definitely hard on the ears. The terrific torque forces the driver to exert a lot of strength to hold the boat on a straight course. In acceleration, the seat back really gives you a shove. It is very difficult to see the average marker buoy at this speed and it is advisable to use land marks at each end of the course. Vision out of "IV" is excellent and the small windshield shunts most of the air blast over your head. It is important to stay down in the seat for if you ever raise up a few inches, you are apt to lose your helmet, goggles and to say the least, your composure.

I have driven both "Slos" many hours at speeds well above 100 in all kinds of water. (Lake Washington can get very rough and tough). We (three of us) have gotten accustomed to speeds of 120 to 135 to the point that it seems like cruising. I can truthfully tell you, however, that I have not reached the stage of becoming nonchalant about 160. I know I am going fast, I am hoping that I see everything that I should see—that the engine, gear box, prop, drive shaft, struts, rudder and steering gear will not come "unstuck" when I'm going over 160.

Each time I have topped the 160 mark, there has been a tremendous urge to shove the throttle flat out and hold it there—to see how much faster I can go. So far, this urge has been tempered by the realization that there was an important race coming up and that there was no wisdom in stressing the boat too severely. The "progressive ailment" still bites, however, and sooner or later I may try for another mark that I have in mind.

Two other men have driven the "Slos" beyond the 160 mark—Ted Jones, the very able designer, and Lou Fageol, whom I consider the greatest race boat driver of all. Their own description of 160 plus, might not be the same as mine but I am sure that they would both agree that it is fun, thrilling and satisfying.

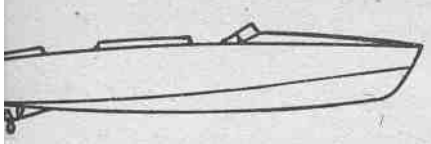


Figure 1: Inboard runabout with modified V-bottom. This type hull is a semi-displacement type. It presents more wetted surface than hydroplanes.

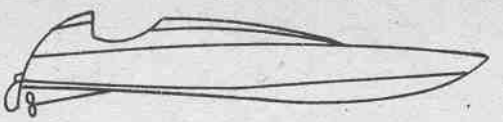


Figure 2: Inboard racing runabout. Note non-trip chines where side and bottom converge. This gives better handling characteristics in turns.

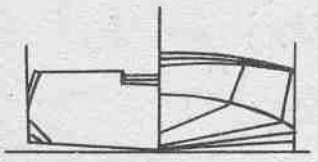


Figure 3: Body plan of typical runabout hull shows half frames and non-trip chines. Chine bevel is of varying sharpness of water attack.

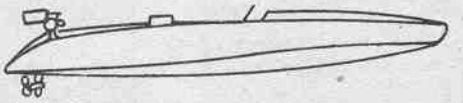


Figure 4: Outboard runabout with motor in keel set forward of transom. Such a hull increases wetted surface, gets on plane readily, wastes power.

Figure 5: A rockered keel design is quite satisfactory for rowing, but don't try this design for racing unless you want to troll on the course.

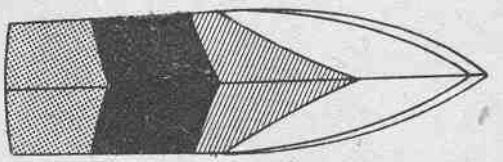


Figure 6: Bottom surface of conventional runabout. Striped section hits water occasionally. Black area is lifting surface, in water most of the time.

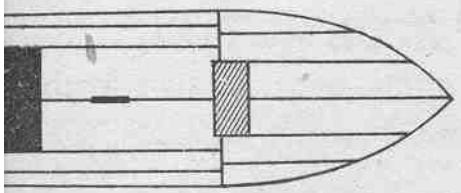


Figure 7: An under-water view of conventional hydroplane. Forward step riding surface indicated by striped lines. Blackened area is lifting surface.

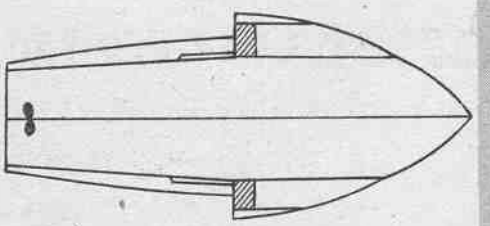


Figure 8: Inboard prop rider underway is supported by sections shown by parallel lines on forward sponsons, with prop as lift and forward thrust.

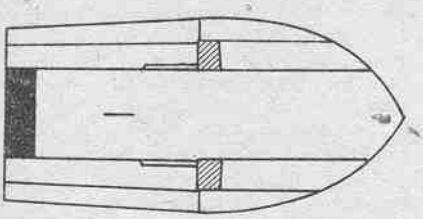


Figure 9: Most commonplace design of present outboard three-pointers has two riding sections forward (parallel lined area) and lift surface aft.

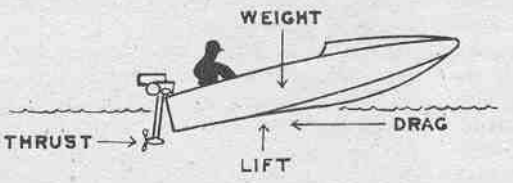
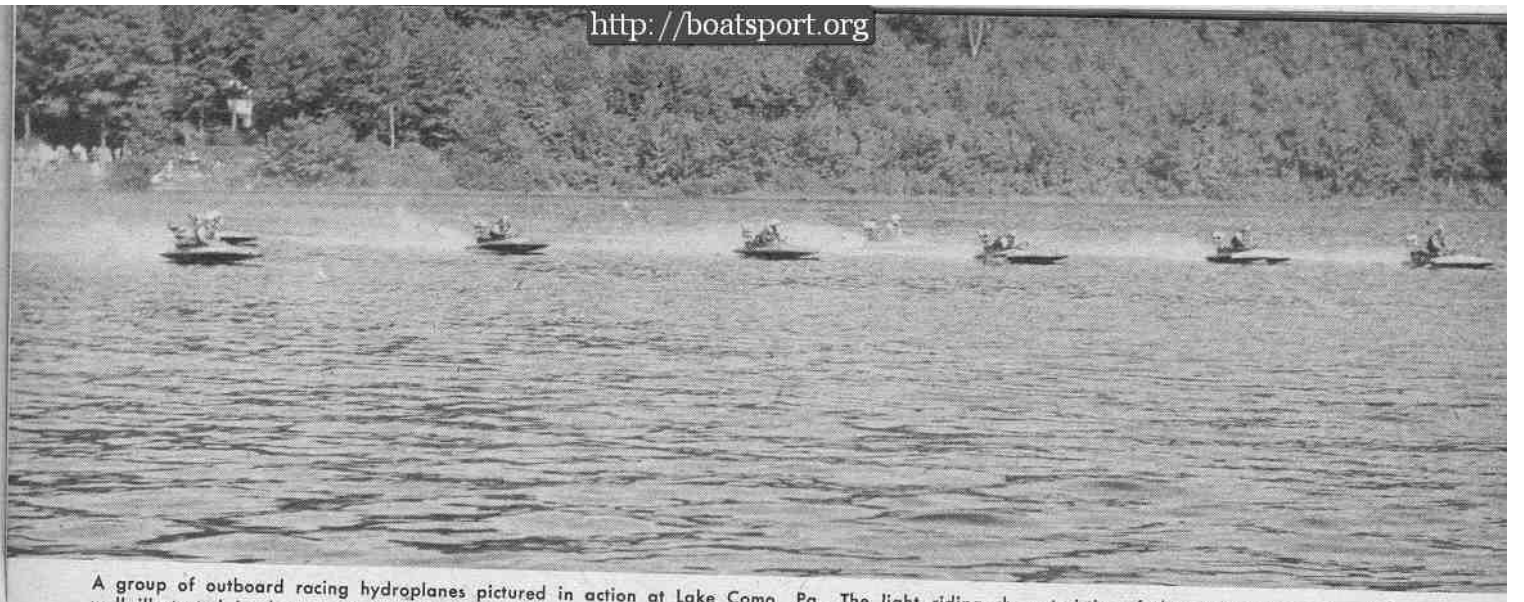


Figure 10: Four principal forces react on hull and must be balanced for efficient performance. Wind resistance is not important in lower speed ranges.



A group of outboard racing hydroplanes pictured in action at Lake Como, Pa., The light riding characteristics of three-point suspension design are well illustrated in the second boat from the right, a Swift-designed hull, driven by Joe Wotowitz, Hartford, Conn., who placed third in this heat.

LET'S GET TO THE BOTTOM OF IT

By DEAN WORCESTER

Boats, Like Women, Come in a Variety of Shapes and Temperaments. To Know How to Handle Them, Learn What to Expect . . .

AS any burlesque show habitué could tell you, the four S's of bottoms are (1) Shape, (2) Size, (3) Smoothness and (4) Shimmy.

The order above is guaranteed to be a statistically random sample, and any girl drivers who feel that the emphasis should be arranged differently are cautioned to sit still while we get to the meat of the subject.

1. SHAPE

Fortunately for girdle makers, bottoms come in a variety of shapes, which their owners frequently try to change. Forms common in contemporary speed circles include the monoplane (runabout), single-step hydroplane, and three-point hydroplane. All these are planing types, which means merely that the greater part of their support on the surface of the water, while underway, comes from the impact of the water against the bottom, not from the displacement of water. This becomes obvious if you note the change in water line as your hull picks up speed. Hydroplanes are not permitted in runabout races, and usually, vice-versa—not because the hydroplane has to fear the runabout's speed, but because the runabout drags a wake which most hydroplane drivers view with alarm. So choose your type—and we'll get along to some generalizations which may help you to determine the merits of any particular design.

The runabout has a bottom shape with no transverse breaks—steps to you and me—although it may have longitudinal steps or laps. In many classes the rules restrict the number and depth of such laps. Make sure any boat you buy or build fulfills all requirements of the class in which you plan to use it, or you may find yourself with a racing outfit and no one to race.

Most runabouts are of the modified V type—a very sharp V forward gradually flattens out to a very moderate V at the transom. Such bottoms, although tried and true, are condemned as wasteful of power by many contemporary designers, who are fond of the "parallel buttocks" design. The forward three-quarters of the hull are similar to the modified V type shape, but the angle of the V is held constant from that point to the transom. This means that the portion of the bottom supplying most of the lift has a constant section—all bottom frames are the same for the stern fourth of the hull. This bottom shape, its proponents claim, reduces drag, thereby permitting high speeds. They are probably right, but . . . factors other than bottom design are very important, especially in runabouts where the boat tends to be supported by a single small area near the transom—an unstable condition at best. Here weight distribution and propeller-shaft angle can make a tremendous difference, and the possibility exists that for two particular boats, one modified V and one parallel buttocks V, a faster setup might be possible with the modified V hull.

Other points to note:

Keel line: this is often kept fairly flat, so that in rough water the extra lift forward will increase more gradually than would be the case if the keel were high at the bow.

Nontrip chines: if permitted by class rules, beveled chines may give you an opportunity to sneak around the turn inside the other guy, and many a race has been won around the buoys.

Round bottoms: while the V bottom boat throws water out flat from beneath it, the water tends to follow around the curve of the bilge in round-bottom boats, thereby increasing the wetted surface and, therefore, drag. Some very good rough-water and marathon boats have had round bottoms: usually coupled with reverse lap-strake construction.

Motor wells (outboard engines set forward of the transom): undesirable for racing boats. Since the lifting area approaches the transom at high speeds, to produce a stable hull the moments have to be equal, the effective center of lift has to come under the effective center of gravity—determined by the actual center of gravity and the propeller thrust component. If the effective center of gravity is moved forward by moving the engine forward, the center of lift will move forward increasing the wetted surface and perhaps also causing suction instead of lift on portions of the bottom well aft of the impact point. Of course you might eliminate this by stopping the planing surface just aft of effective center of gravity, but some race committees might consider your bottom naughty and tell you to go run with the hydroplane classes.

With hydroplanes you have to make a choice, three point or conventional. The single-step (conventional) hydroplane has one transverse break in its bottom.

(*Turn to Page* 28)

GAR WOOD

INVENTIVE AND COURAGEOUS, THE GREAT GAR WOOD WROTE SPEEDBOATING HISTORY IN AMERICA FOR TWO DECADES . .

THE GRAY FOX OF ALGONAC

By H. Wieand Bowman

IN a gaunt medieval castle twenty miles outside of Detroit, on a peninsula jutting into Lake St. Clair, lives the man who has made the single greatest impact on the world of speedboating. Garfield Arthur Wood, better known as Gar Wood, and frequently referred to as the Gray Fox of Algonac, has a myriad of interests. They range from pipe organs, oil burners, telescopes, hydraulic hoists, cameras, rear engine motor coaches, to turtles and turkeys. Sometimes he has been called the Gadget King of America. But when it came to speed on water, Gar Wood's creations were spoken of condescendingly only once during his entire career as a driver.

Technician, amateur astronomer and inventor, the apple cheeked, hatchet faced mechanical genius held to one superstition. His faith rested in legendary twin Teddy bears, forty cent, sawdust stuffed wooly bodies that hung as talismans in every boat he raced.

During his competitive career that extended through his mid fifties, Gar suffered plenty of rough going. In nearly twenty years of competition, he was thrown from speedboats seventeen times. Lucky? Sure, but gutty, too.

Gar's racing career started inauspiciously. His first boat was a dingy powered by a one-lung engine from which he was able to nurse a modest 8 m.p.h. His father was a Minnesota ferry boat captain and the senior Wood owned a steam launch called the "Manitoba." During his boyhood, Gar had a burning desire for speed, but a kicker powered dingy or a steam launch scarcely offered breath taking performance. Yet one afternoon Gar was challenged to a two-mile race with the sluggish "Manitoba." Three-quarters of the way to the finish line, Gar and the lumbering launch started to drop behind. It was obvious to young Wood that without drastic action, defeat would be inevitable. The "Manitoba" wasn't designed for racing but her polished benches and shiny wood pilot stool made up for the "Manitoba's" ungainly seakeeping qualities, with a spit 'n polish appearance that was Gar's father's pride. Probably this race marked the beginning of Gar's terrific drive to win any speed competition event at any cost. Reports have it that, well-aware he would be confronted with his father's anger, Gar's will to win overcame his consciousness of parental ire. As the "Manitoba" continued to slip behind its competitor, Gar broke up the interior finishings and stoked them into the "Manitoba's" firebox. With the varnish-impregnated fuel, which was certainly an early evidence of a fuel hopup experiment, the "Manitoba" charged with burning gum spirits, belched greenish brown clouds of smoke and wallowed forward in a surge of speed that won Gar his first race.

From that early bit of competition

In a thrilling demonstration of speed and piloting, Gar Wood shot his "Miss America X" across the line at Detroit in 1932 to win first heat from Kay Don of England in Harmsworth Trophy Race. Don's boat failed him after he had led 4 laps, one of the motors going dead. Above is crucial moment when Wood crept up and passed lagging "Miss England III" in last lap of race.

through until his 1931 defense of the Harmsworth Trophy, Gar lost but few major races.

Gar was only ten years old at the time of the "Manitoba" incident and for the next decade little was heard of him speedwise. At twenty, Gar Wood was working as a mechanic in a St. Paul garage. His creative mechanical genius had been evidenced in numerous minor ways but he had yet to create the key invention which led eventually to a financial security that made it possible for him to indulge his love for speed. In 1911, after observing the awkwardness surrounding unloading trucks, his inventive gadgetry at last paid off. Gar designed and built the first hydraulic hoist to be run by a truck motor and sold this first prototype model for $200. Two years later, with the savings from additional hydraulic hoists sales, Gar built his first competition speedboat.

His first real racing contest occurred nearly thirty-six years ago at a speedboating event sponsored by the exclusive Detroit Yachting club. An unregistered and uninvited boat accompanied by a thin, shabbily dressed, thin faced, old-appearing young man met with a cool reception. Gar was definitely out of place in the peg bottom, flannel trousered, blue jacketed set. The appearance of his racing hull elicited laughs and a few sneering comments. There are some who distinctly remember hearing a member of the race committee stoop to such crudity as to comment, "It stinks," in reference to Gar's creation. But so nondescript and unpretentious appearing was the entry that no official bothered to disbar it. When the starting gun sounded, Gar was on the course. Embarrassment blended with anger as the skinny driver with the unruly hair proceeded to run rings around his competition. Post-race protests prevented the unofficial entry from being awarded the winner's trophy but it is to the credit of the officials that after their initial shock, they so admired the performance of Wood's tramp craft that he was presented with a special cup.

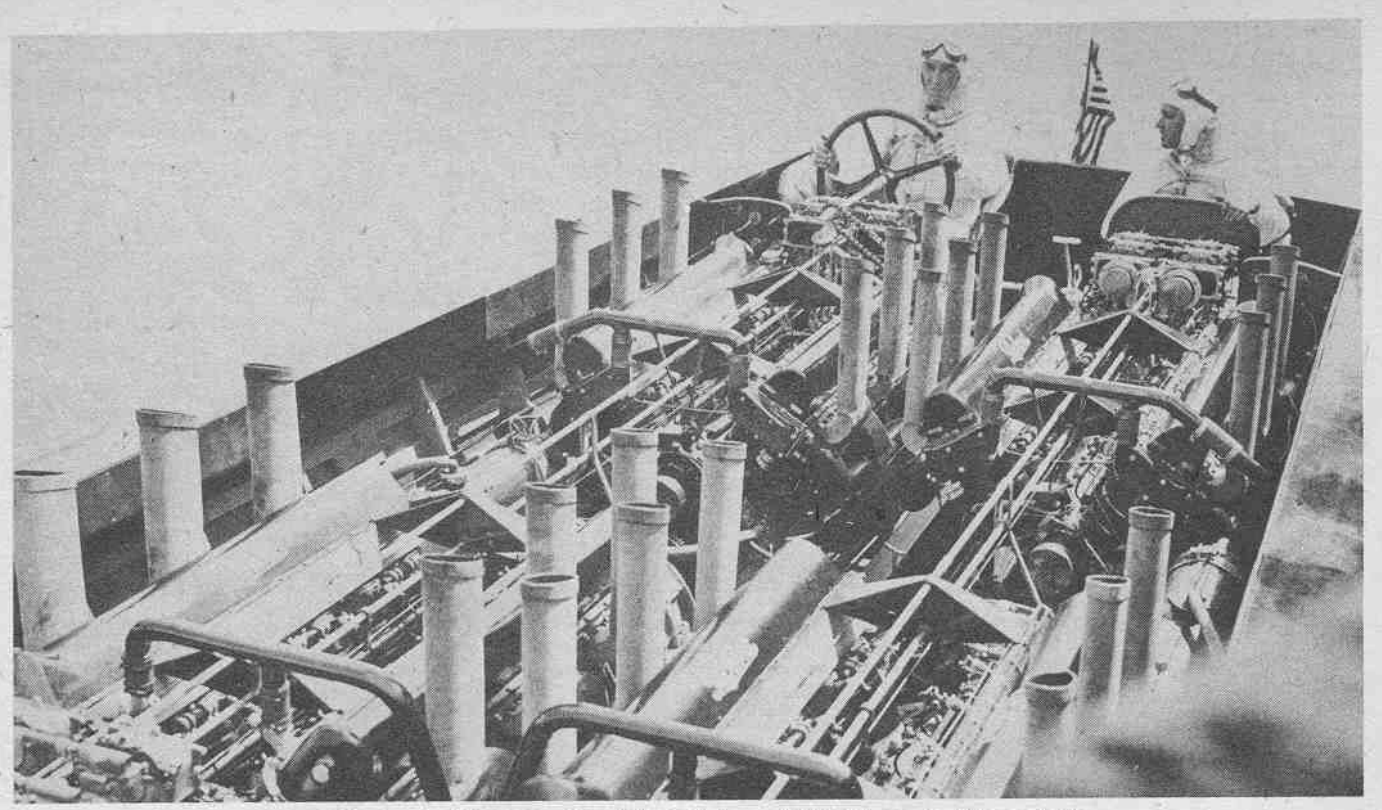
FOR more than two decades thereafter, Wood reigned supreme as the United States' outstanding speedboat driver and designer. Most active speedboating enthusiasts were disappointed when on Christmas Eve of 1948, Gar, at the age of 68, while still holder of the Harmsworth Trophy and the United States' unlimited speedboat record, announced his retirement from competition.

Once during his most active period from 1920 through 1934, Wood was subjected to bitter criticism for an alleged unsportsmanlike tactic during his unsuccessful 1931 Harmsworth defense—but only a man who had reached the pinnacle in the game could have evoked such criticism. Attacks and defenses have been made concerning his allegedly baiting British Challenger Kaye Don into a disqualification, but to even those who strongly believe that the incident was premeditated and definitely unsportsmanlike, at its worst to them it's a tiny blemish in a tremendous sporting career of a man who nearly single handedly built speed on water into the huge spectator and contestant game it is today.

Wood's deeds with a speedboat thrilled youngsters and adults alike and created an international interest in the game which never is likely to die. Wood originally won the Harmsworth Trophy (known also as the British International Trophy—a huge bronze plaque offered into competition by Sir Alfred Harmsworth, Lord Northcliffe, in 1904) in 1920. The boat was "Miss America I" powered by a twelve cylinder Liberty with which Gar went to England and captured the Harmsworth on Osborne Bay. Gar had been sold on aircraft marine conversions when in 1917 with his "Miss Detroit III," his first really hot job, Gar won the Gold Cup. With "Miss Detroit," which was powered by a Curtis aircraft twelve cylinder engine, he had hit a speed of 61.724 (a new world's record at the time).

In 1918 Gar temporarily lost his speed-on-water world supremacy to A. L. Judson, driving "Whippo-o-Will, Jr." Judson bounced out an average 63.498 m.p.h. but in 1920 Gar not only recaptured the Harmsworth Trophy for America in "Miss America I" but he also set a new water speed record of 74.87 m.p.h. In 1921 in "Miss America II," Gar drove a new Liberty powered hull to a successful defense of his Harmworth title against England's Sir E. MacKay Edgar. In 1925 Gar was ready to defend against a highly touted French challenger, "Excelsior France," but unfortunately that craft burned up in trial

(*See over*)



"Miss America X" with Gar Wood (left) at helm and Orlin Johnson as riding mechanic, is pictured on the St. Clair River, Michigan, in 1932, just before Gar Wood established an incredibly fast 124.86 m.p.h. speed record in the Harmsworth Trophy Race.

THE GRAY FOX OF ALGONAC

(*Continued from preceding page*)

runs and never had its crack at the Harmsworth. In 1926 with "Miss America V," his last Liberty powered speedboat, Gar's competition, "Excelsior France II," failed to finish.

Early in 1928 Miss Marion Barbara Carstairs issued a challenge and Gar started work on "Miss America VI" in which he planned two twelve-cylinder 60° Packards. Each of these aircraft type engines were rated at 770 h.p. Rival boat designers in America claimed it would be impossible for Wood to build a hull that could safely carry the brute torque of the 1440 h.p. Fifteen days before "America VI" was scheduled to go to the starting line against the fabulous British woman daredevil, Wood and his riding mechanic, Orlin Johnson, mushed away from the Algonac plant docks and moved onto the St. Clair River for their initial trial run. Wood later admitted that for the first time in his racing career he hesitated to order Orlin to crack wide the throttles. The first shakedown run was made at a moderate 65 m.p.h.

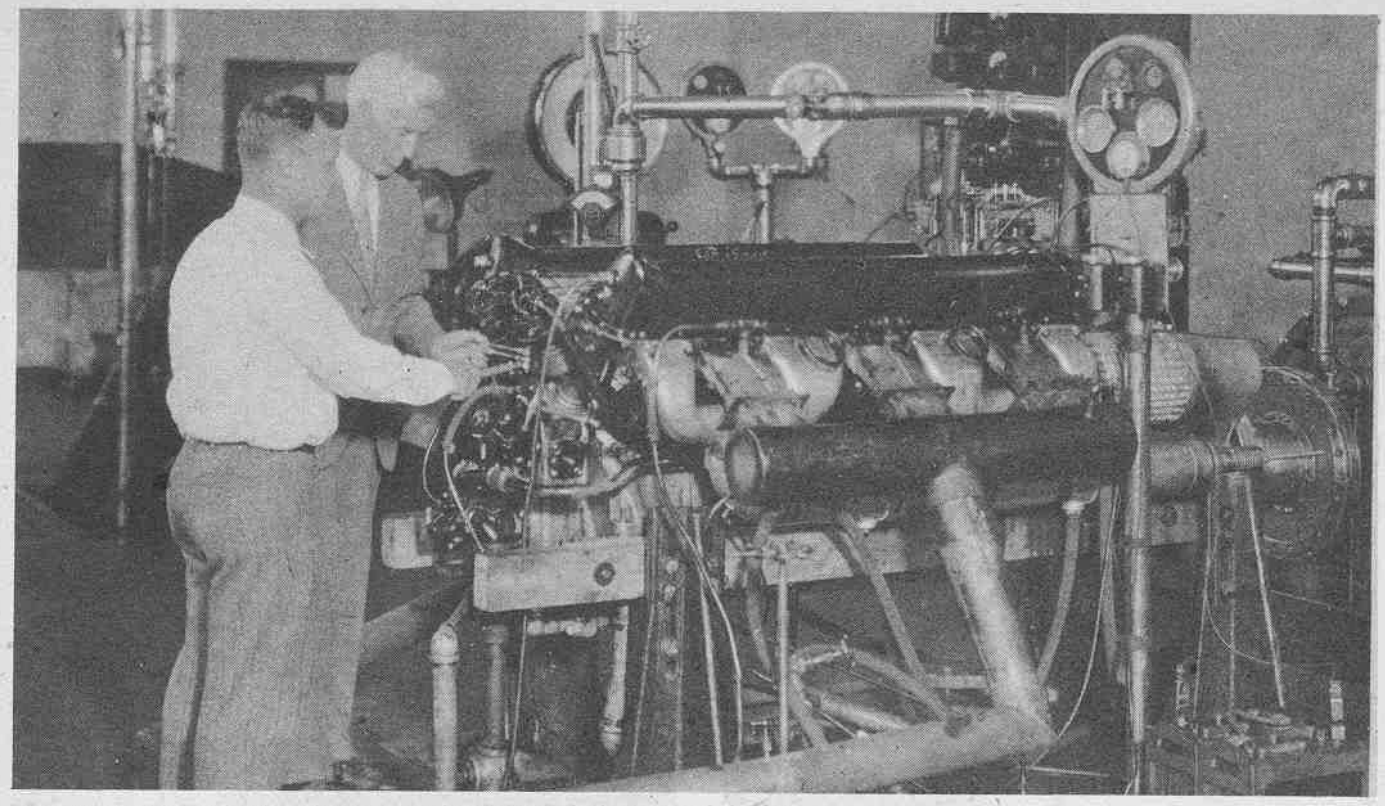
After minor adjustments at the dock, Gar turned to Orlin. "Shall we give them full throttle?" he asked.

"If you can steer her, Gar, I can feed her all the gas she will take," Orlin replied.

The tachs on the new boat bobbled near the 2400 r.p.m. mark as flames belched skyward and their heat scorched the greased faces of the two tense riders. Wood later recalled performing some quick mental figuring. He estimated that with two 36" props, discounting slippage, "Miss America VI" should have been moving at about 105 m.p.h. Actually allowing for cavitation he figured the new boat was kissing the waves at better than 95 and handling well. Then suddenly, with no forewarning, a terrific explosion occurred. One instant Wood gripped the wheel with wind lashing at his scorched face. The next second he was catapulted through a spray of flying splinters, oil and spume. So rapid had been the accident that Wood never released his grip on the wheel. He remembers his eyes were open as he was thrown downward through the water by the terrific momentum of boat speed plus the added impetus imparted by the explosion. He vaguely saw hazily outlined sections of shattered hull swirl about him. Water pressure on his body become almost unbearable. His last conscious realization was that the weight of the steering wheel which he still gripped, the steering shaft and the gearbox which had been torn or blown intact from the cockpit of the boat, combined to act like a huge anchor dragging him rapidly downward. Instinctively he relaxed his hold. In reminiscing he thinks he regained consciousness shortly after reaching the surface. And in that ominous moment in his career of speed, fear stabbed angrily at his heart. Mingled with splintered chunks of mahogany, fuel and oil on the surface were unmistakable crimson stains of blood. His thoughts were of Johnson who had supreme confidence in Gar's masterly touch at the wheel. Gar wondered if he had failed Orlin. Seconds ticked by slower even than fleeting minutes during a race. Then Johnson's inert body bobbed to the surface. The mechanic's head was unrecognizable in a sickening jelly-like encirclement of oil and gore. Yet an hour later after rescuers had rushed the two victims of speed to shore in a motor runabout, Johnson regained consciousness. During the shrapnel-like blast of undetermined origin a jagged splinter of wood or metal gashed Johnson's throat from ear to ear. Despite this experience both Gar and Orlin lived to race again. In fact both men's passion for speed was such that they were convinced they raced to live.

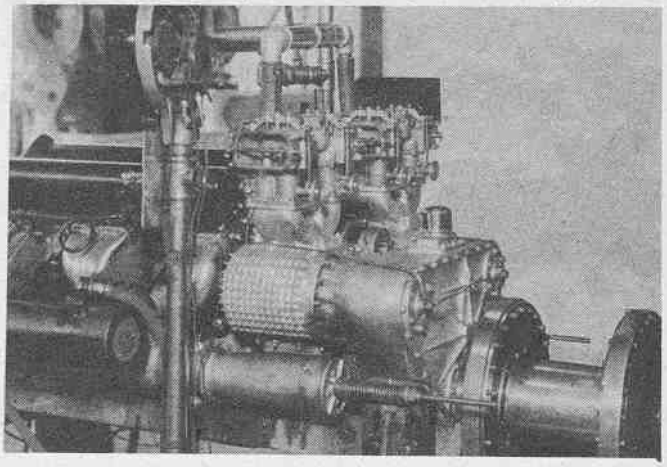
Reporters, speedboating fans and even Wood's most intimate friends thought that he would cede victory to Miss Carstairs who even at the time of "America VI's" ill-fated accident, was running successful practice tests not ten miles away in her twin Napier engined "Estelle III."

Still shaken from his accident, and



Gar Wood (right) and Orlin Johnson run a dynamometer check on one of the four Packards that powered the former record holder, "Miss America X." Gar Wood's boat still represents the greatest massing of horsepower in any single speedboat in history.

(Below) The superchargers for Gar Wood's Packards were Roots type designed by Louis Schwitzer. Rotors of the superchargers turned at 6400 r.p.m. when the engine was developing 2600.



only fourteen days before his title defense was scheduled, Wood roughed out sketches for a "Miss America VIII." As he lost himself in the complexity of drawing board work, divers in bell outfits searched the 60' deep river bottom for the two marine conversion Packards into which Wood reportedly had poured $20,000. On the fourth day, the engines were located and hauled to the surface. Colonel J. G. Vincent of the Packard Company and his staff tore down and completely over-hauled the power plants. And nine days after the two twelve-cylinder giants had settled to the bottom of the St. Clair River, they were lowered onto the motor rails of a new hull.

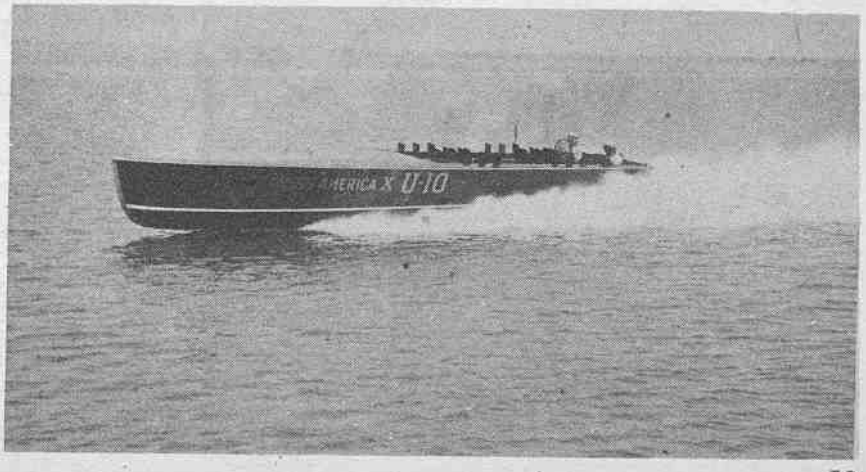
Lucky? Wood would grin at such a question, but tied securely to one of those engines were the two 40c talisman Teddy bears.

Ten days after being recovered, those engines pushed "Miss America VII" to another new world's record of 92.838 m.p.h. on the Detroit River.

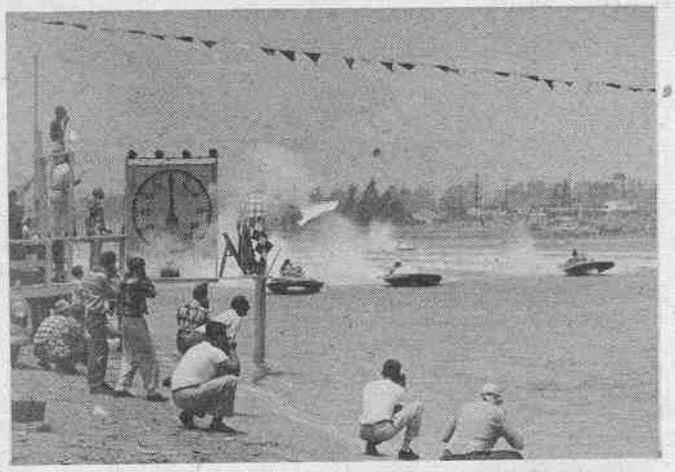
Miss Carstairs' attempt to return the Harmsworth to England was destined to end in failure as "Estelle III," while performing well, split a plank before the first heat was completed, cracked up and dunked the attractive British woman. Wood coasted to a slow 59.325 m.p.h. automatic victory and his third

(*Turn to Page* 28)

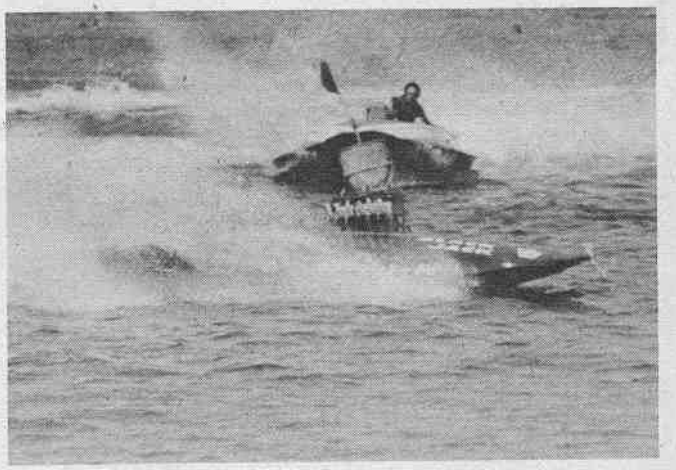
(Below) Gar Wood cutting through the waters of Biscayne Bay of Miami, Florida, in his supercharged "Miss America X" in 1935 during a test run before trying to break his own world's speed record. Orlin Johnson, riding mechanic, is seated at Wood's left.



"Pay gates" of over 12,000 gather at Marine Stadium, originally built to handle rowing races at 12th Olympiad in '32. Here Cracker Boxes come up for the start.



The fast 225 hydros hit the line at Long Beach Marine Stadium in Southern California as veteran starter Don Steans drops the flag.



Art Maynard pursues Chuck Powell in close action at Long Beach. First major event in '52 will be inboard regatta on May 30th.

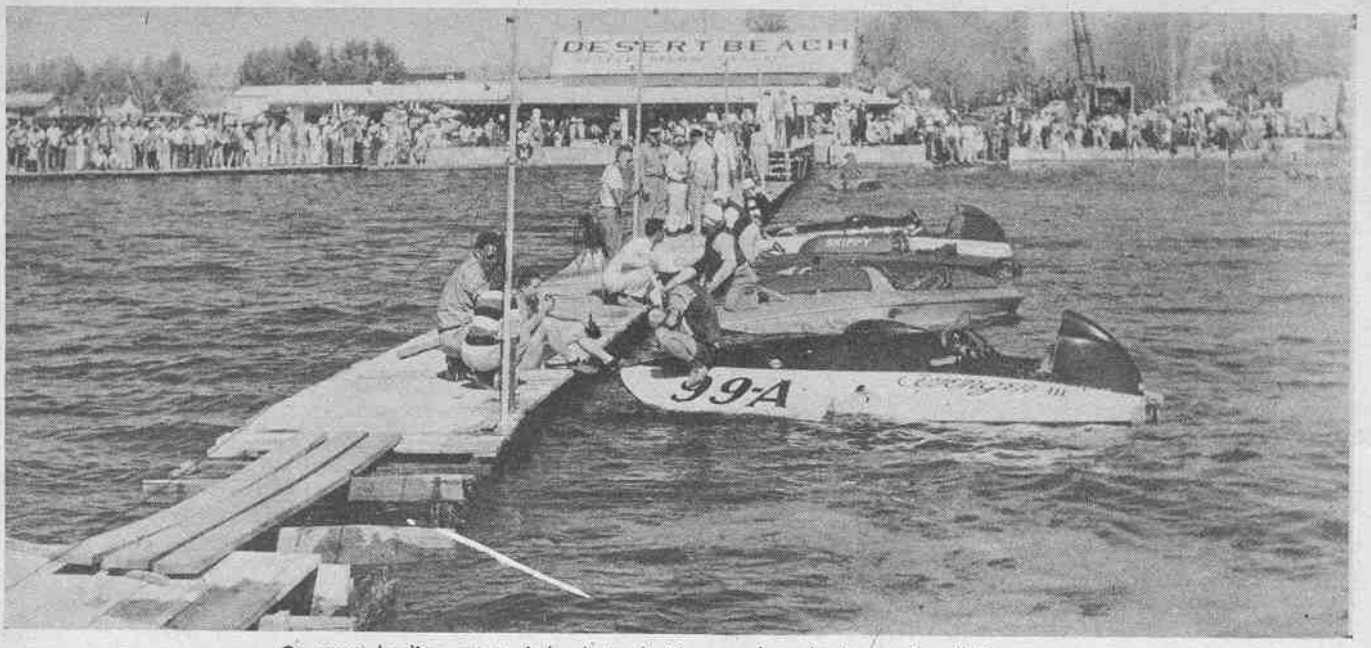
The Salton Sea is sometimes whipped by vicious "santana" winds. Drivers often sit it out for 2 days waiting for calm water.

SOUTHERN CALIFORNIA, a western segment of land known to the Almighty, the Chambers of Commerce (both Florida and Southern California), and to speedboat drivers over the world, has two race courses which are about as much alike as yes and no.

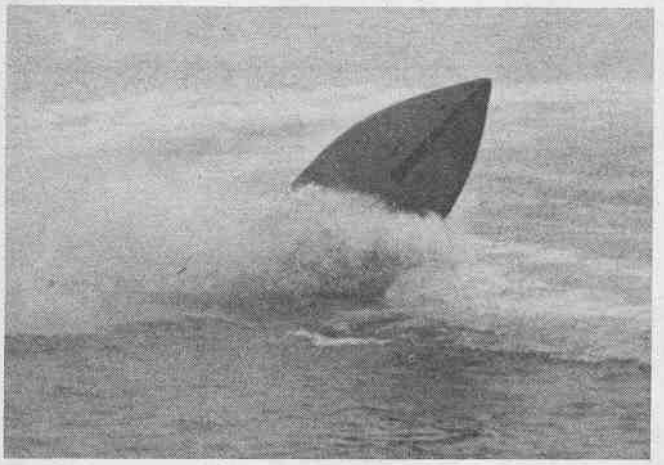
One is the fabulous, 10- by 40-mile saline body known as Salton Sea, which lies in the heart of the Colorado Desert, 250 feet below the level of the sea. On it, drivers from everywhere have been knocking off world records since 1929.

The other is a narrow, tidal lagoon which is 2,000 meters long and some 200 yards wide, called the Marine Stadium. It lies at the eastern extremity of the city of Long Beach (pop. 250,000). It is colorful course, but there has never been, nor probably ever will be, an official record made over it although for action packed water thrills it is tops.

Of the two water speedways the Salton Sea is the more renowned and justly, although one huge regatta each year is about all that the drivers can manage. Then the hotshots assemble from everywhere. Freakish and unpredictable Salton, when nice, is fast and records are the alpha and omega.



On ramp leading out to judges' stand drivers and mechanics await call for race start on Salton Sea. This famed California raceway is 250 feet below sea level.



And this . . . well, it could happen anywhere, with water as a necessary adjunct. Driver flipped during race on Salton Sea.

Southern California Lays Claim to Record Breaking Speeds and to Record Breaking Crowds in its Two Crucibles of speeds: "Lanky Lagoon" and Salton Sea

RECORD BREAKERS — WEST

By Bob Ruskauff

Long Beach Marine Stadium, however, is the one course in the west where it is possible to put on successful "pay gates." As a result, clubs which can offer a sporting performance that John Q. Public is willing to pay for, may profit. The "Lanky Lagoon" has put one inboard organization, the Southern California Speedboat Club, into the chips over a period of several years. Today, with something like $5,000 in its general fund, the SCSC is one of the nations most solvent race clubs.

Because of this kitty built up from Marine Stadium regattas, the SCSC was last year able to underwrite the 12th renewed desert regatta on Salton Sea, during which 22 speed marks were tumbled.

Boats up to the 264 cubin inch class can race at Long Beach. The course is too short for mile trials and the one-buoy turns in the narrow channel make competitive records impossible.

Two years ago, some 17 years after the events were started, the City of Long Beach set up bleachers capable of seating 4,500 spectators, black-topped the highway around the course and built rest rooms. But more improvements, especially drivers' pits, should be added. Latest word is that they're on the way. It's a terrific show course designed for spectator as well as driver pleasure. Each year its water churns to at least 5 racing events. The first big one this year will be the SCSC's traditional all-inboard meet on Memorial Day. These Marine Stadium events are frequently sponsored by service groups and this May 30th the Lions Club of adjacent Belmont Shore is doing the underwriting.

Salton Sea, however, is truly the "story book" course.

Few are the world's famed drivers who haven't raced, or desired to race there. Stan Sayres has considered it, I understand, with a Slo-Mo-Shun, but up to this writing he has obviously felt no need. The late Sir Malcolm Campbell some years back toyed with the idea of "salting" Blue Bird's tail. His untimely death intervened.

Four years ago, Guy Lombardo in his frustrated effort to break the 141 m.p.h. record held by Blue Bird II, turned the "fastest Salton Sea mile" in his Gold Cupper, Tempo VI, at

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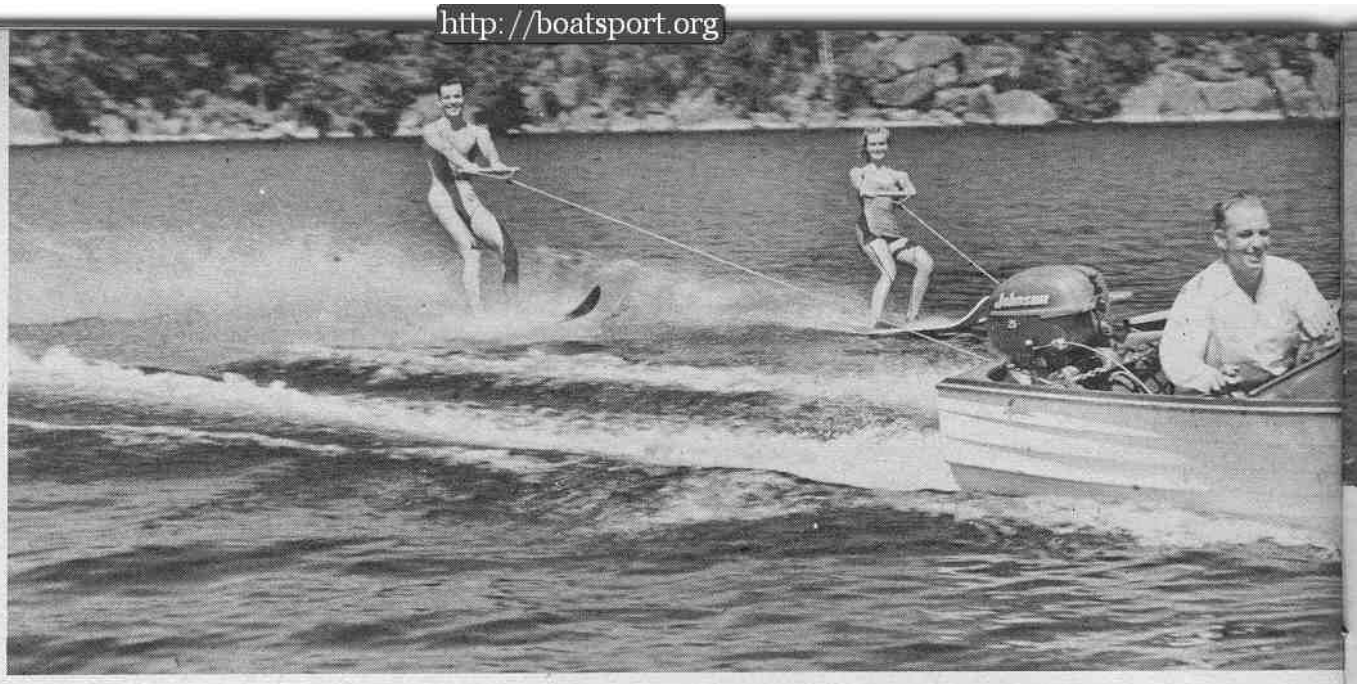

You don't have to "Swing your partner" in water skiing—a fast motor like this Johnson does it for you, spinning her out in a graceful arc of spray. But watch the other curves, too, or you may start to "Dig for the Oyster." But even a good ducking can be fun in this most fascinating outdoor sport.

OUTDOORS WITH THE OUTBOARDS

By Dick Van Benschoten

There's a Motor for Every Size Boat and a Boat for Every Size Motor—and Both of Them for Every Size Pocketbook

THE carefree sound of outboard motors on the rivers and lakes all over America is as sure a sign of mid-spring as the buzzing of the bees. It is a typically American sound, too, for where else could so many people own and enjoy what is considered an expensive luxury in other countries. Already there are over two-and-a-half million outboards in operation in the United States, and the number is increasing rapidly each year as people discover the pleasures of healthful outdoor relaxation, going where they want when they want to over the peaceful waters of our great country.

There are many ways of getting outdoors, but the outboarding way is one of the best. Along in late winter, when the gardener is restricted to leafing through his new seed catalog and the golfer is confined to a few practice swings and an occasional divot out of the living room rug, the outboard enthusiast is busy and happy getting his boat into perfect shape and tuning up his motor to its peak of built-in power and performance. New boats are being built from the readily available plans and from the many boat kits now on the market all ready for assembling. Think of the activity that has been going on in the basements and garages throughout the country!

Outboarding pleasure goes on all year even in the coldest climates. And there are other differences, too, during the season. As the Skipper says, "I never heard of an outboarder being pestered by rabbits the way a gardener is." For that matter, we might add that we never heard of one having to spend much time looking for lost golf balls, either—but any outboarder who is foolish enough not to have a safety-tie of some kind may find himself spending the whole summer looking for a lost motor down at the bottom of the lake. Even water-holes were never as much of a hazard as that.

Memorial Day and the Fourth of July both come on a Friday this year, so why not plan two long three-day weekends on the water as a good starter for the season? Or maybe you want to try out that new boat-trailer you've just finished building and see how the fishing is on that lake you've heard so much about. But be sure you know the State laws about what lakes outboards can be used on, and also what sizes of motors are allowed, as well as whether trolling is permitted or not. Each State seems to have its own ideas on this subject—which is a pity indeed—but checking up ahead of time may save you time and trouble, as well as some remorse. As the Skipper always says, "Ignorance sure ain't bliss when you come up against the law and have a fine slapped against you."

If you've never taken an outboard camping trip, maybe a short one over one of these weekends would be just the thing. They say it's better to take a sort of shake-down cruise first in order to learn the ropes. But after that first one, we'll bet you'll be planning to spend a good part of your vacation that way this summer. All you need is a boat and motor big enough to take your party and whatever gear you need.

Don't take anything you aren't absolutely sure you'll need. It's too much trouble loading and unloading it every time. Another thing the old-timers will tell you is pick out a good camping site early enough in the afternoon because maybe you won't find another one before it gets dark. A piece of high ground is the best place for your tent, in case of rain; also a spot where you get all the breezes will be cooler as well as not having as many mosquitoes.

Be very careful of drinking any water

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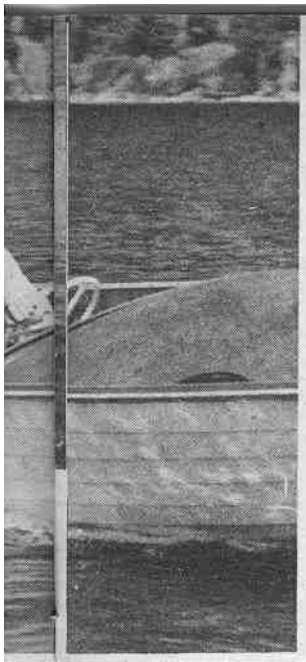
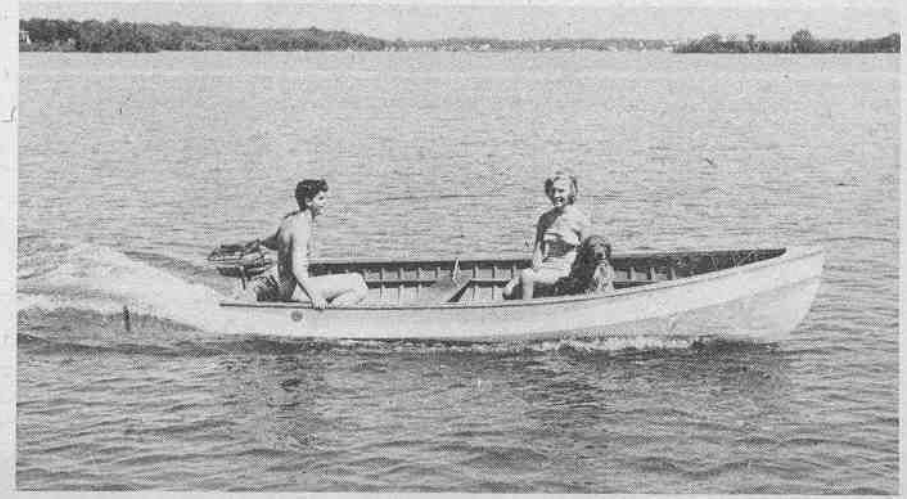


How's this for the perfect vacation spot? All equipment needed—including the sturdy Thompson boat and Mercury Comet motor—is well within the means of any family whose summer budget includes a two-week's vacation anywhere. A sure investment for many annual dividends of pleasure.

"Thar she blows!" or "He jumped thataway!" But this Evinrude-powered Shell Lake boat will take them right there before he has another chance to jump. This is no fish story—but it is a big one that gets away fast every time. Or if they want to creep up on him—or troll—it can do that, too.

A lake, a boat, a motor like this Scott-Atwater—and thou! Perhaps a book of verses underneath the bow—(or under the bow-wow who knows a good thing when he sees one, too). Ah, boating on a summer's day were paradise enow! Even without poetry, outboard boating of any kind is close to it.



A SPECTATOR SOUNDS OFF

By Blake Gilpin

Speedboat Racing is Called a Spectator Sport, But the Spectators Don't Always Agree . . .

ONCE upon a time, way, way back in 1909, when young Ole Evinrude first clamped an outboard motor on his rowboat and putted across that lake in Wisconsin, he had one very interested spectator—his girl friend. She balanced herself uncomfortably on a muddy bank and strained her eyes enthusiastically to make out the indistinct boat bearing down on her at a whipping 8 m.p.h. She was plenty interested because Ole was coming to ask her hand in marriage.

From such humble beginnings a great sport was born. From 8 m.p.h., and no competition, speedboats have developed to thrilling speeds and exciting competition. But the poor spectators are still back in 1909, balancing on muddy banks, peering at indistinct boats and with too-often dubious enthusiasm. After all, how many speedboat drivers are beating through a course intent upon proposing matrimony?

To those spectators to whom matrimony has already been proposed, the girl friends, boy friends and spouses, interest of course runs as high as the potential Mrs. Evinrude's. But then they'd be just as fascinated if their loved ones chose flagpole sitting on top of the Empire State building for a sport, which they also could probably witness only dimly.

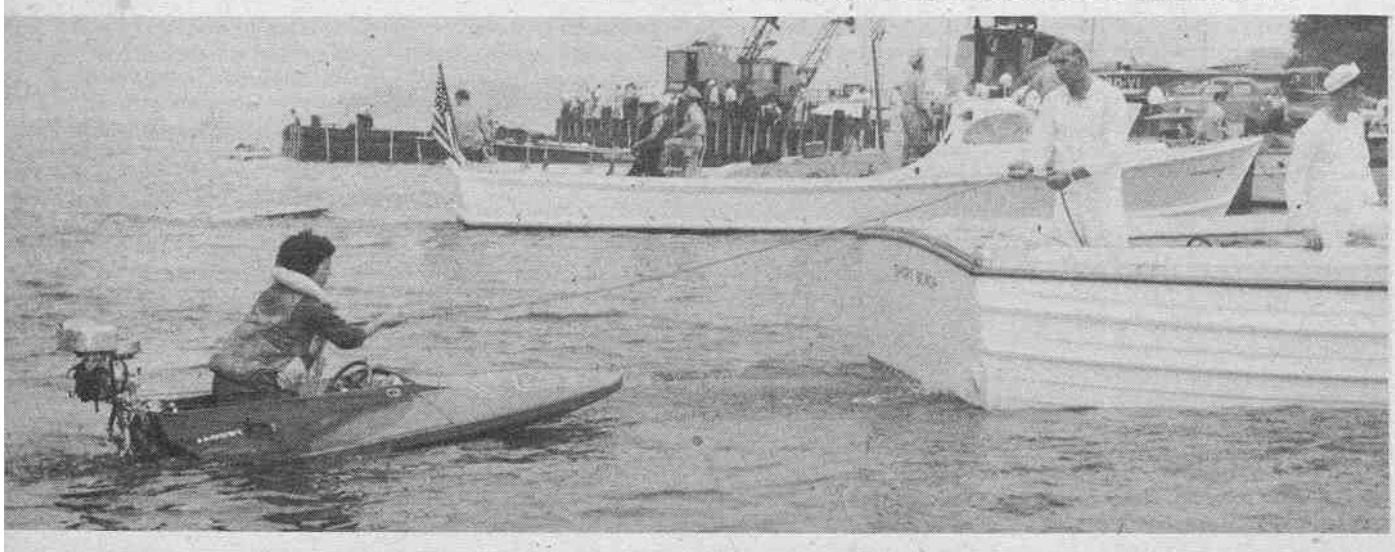
It is apparent that too many regatta chairmen have heard the expression, "You pays your money and you takes your cherce." They figure by reverse reasoning that since you pay no money to look at most of their speedboating shows, what are you kicking about if conditions are somewhat less than ideal? This is shallow reasoning and it's bound to end up eventually in a drought of regattas. Those guys and gals aren't sweating out their bouncing way over the bounding main solely for exercise. Even when the cash on the line is missing from the pay-off sheet, the tool-kit prizes and tin-plated trophies still cost money. Somebody puts it up. Chambers of Commerce hope there will be spectators to appreciate their efforts at civic advancement via boat races.

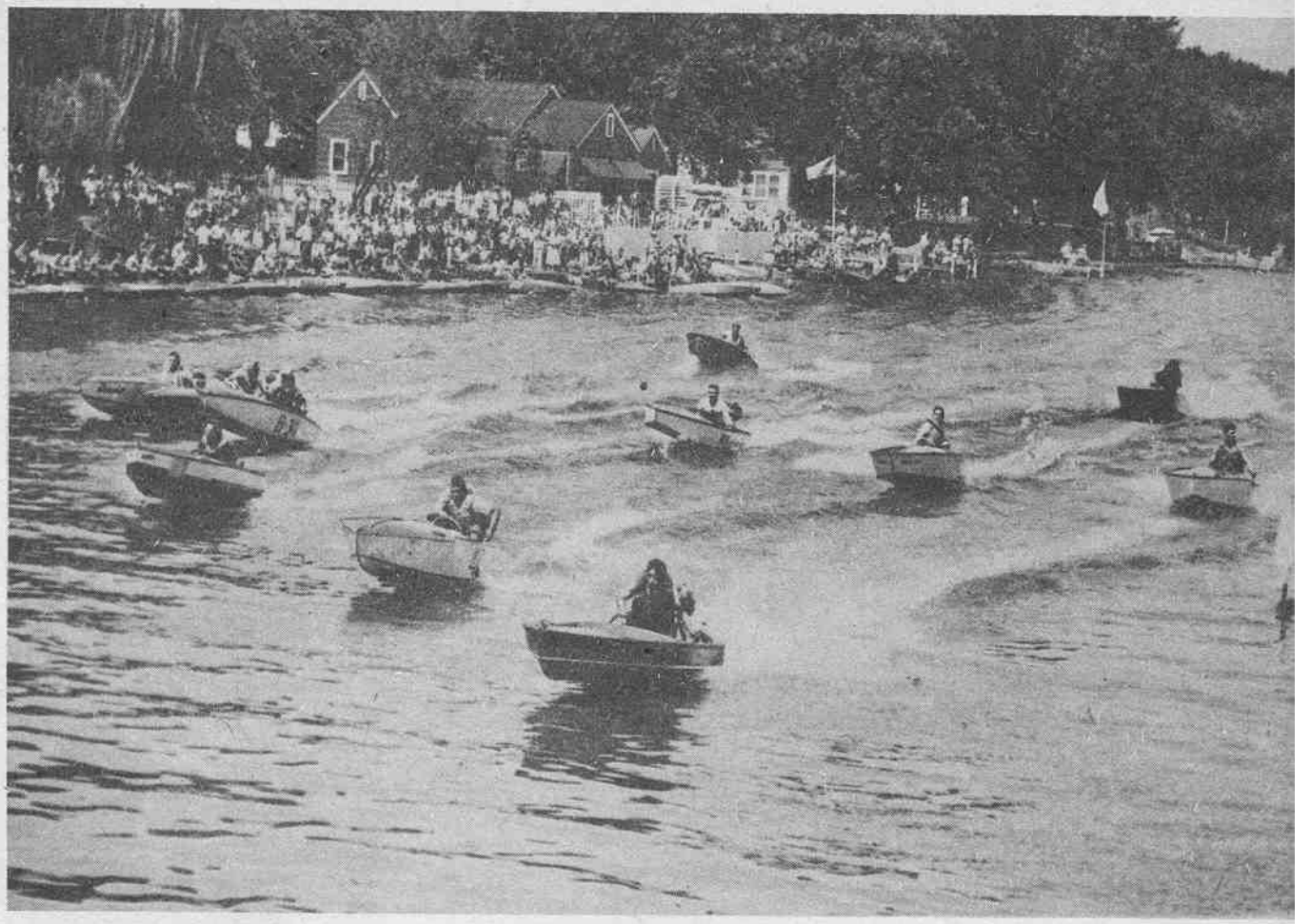
So, let's forget the show being for free and consider the poor spectator who has, or should have, some rights.

Spectator John Doe arrives at a much touted regatta. First he finds all reasonable parking space near the water crammed to overflowing with cars and trailers, and pit crews' cars and relatives' cars. So he takes his car back into town and hoofs it. He's not very tired yet, so he bears this hardship relatively cheerfully. After all, he knows that without boats, trailers and pit crews' cars full of fuel and spare parts, there would be no regatta. Of course if the equipment has been parked with rhyme, reason and foresight, allowances might have been made for spectators' cars, too, but that isn't too important.

Doe gets to the race site and wonders where to go. He inquires as to the whereabouts of the starting line. Somebody calls his attention to a float anchored way off down the water. Spectator Doe nods eagerly; he's proud he can see that far. Then the blow falls. That, it develops, *is* the starting line. Next he considers the possibilities of a turn as a vantage

The author comes in from one race she saw . . . part of! Photo taken during National Sweepstakes Regatta at Red Bank, N. J.





Eager teen-agers give a thrilling performance in Class B stock utility race on Marine Day at McHenry, Illinois, in 1951.

point. The only available turn is in front of the inboard pits. He *could* watch the races from there, under constant threat of decapitation by a crane. He has no choice but to pull up on a piece of bank on the straightaway and resign himself, his enthusiasm beginning to flag, to watching the boats go by.

Now, our friend Doe, being no more, or no less, intelligent than the average citizen who wasn't brought up in a boat trailer, knows he can't tell the difference between a 135 and a 225 cubic incher without a program. Considering the distinction between 48 hydros and 48 runabouts makes him a little dizzy. He forks up two-bits for a program and learns therefrom a lot of pertinent data about Jake's Bar and Grill, watches and fuels, along with the prides and fancies of many other advertisers. He glances over an imposing roster of officials and a list of boat names and numbers. The latter is part of what he is looking for (there is no descriptive material which would clear up the confusion in his mind concerning three-point vs. conventional). But since he is not wearing his telescopic eyes today, he is not able to read the numbers on the boats. Consequently he can't even have the fun of rooting for the guy from Schenectady to beat a guy from Philadelphia. He sits on the program.

On stand long regatta courses, ranging from a mile-and-a-half up in length, the biggest excitement and the most skill is exhibited in the jockeying for the start. There, as the big sweep-second hand on the starting clock relentlessly moves up to the sixty second mark, the drivers weave and maneuver, pitting their sense of time, balance and driving ability against one another until the final gun goes off. Then the men take off for the first buoy leaving the boys behind. With a flock of tiny hydros bumping and bouncing their way down to the line, tension and excitement can run high—*if* the clock is visible and if the spectator knows what the clock is there for and how it regulates the start. Poor John Doe, who can only see the back of a big blank board, wonders why the boats are throttled down to half when they stroke their way to the line, or why they just circled and came back when they took off once to such a flying start. Maybe someone *is* calling the seconds over a P.A.—a public address system that might do good service for a square dance caller in a moderate sized room but is no competitor for a dozen or two unmuffled outboard motors. Why couldn't the clock have hands and numbers on both sides—so the spectators could share the suspense of good-or-bad starts with the drivers?

It would also seem elementary to invest in a decently amplified P.A. system. Auto race track announcers seem to be able to make themselves audible over equally unmuffled and even noisier race cars.

Without an adequate public address system, Doe will never know who won, or why X won when Y came in first, because disqualifications, too, will only be clear on the result sheets. These sheets are, of course, unavailable for general distribution through the crowd. Our friend Doe must read the results in the paper the next day . . . that is, if the regatta committee condescends to pass them along to the press.

Spectators have on the average made out better at regattas where admissions were charged. There efforts are made to

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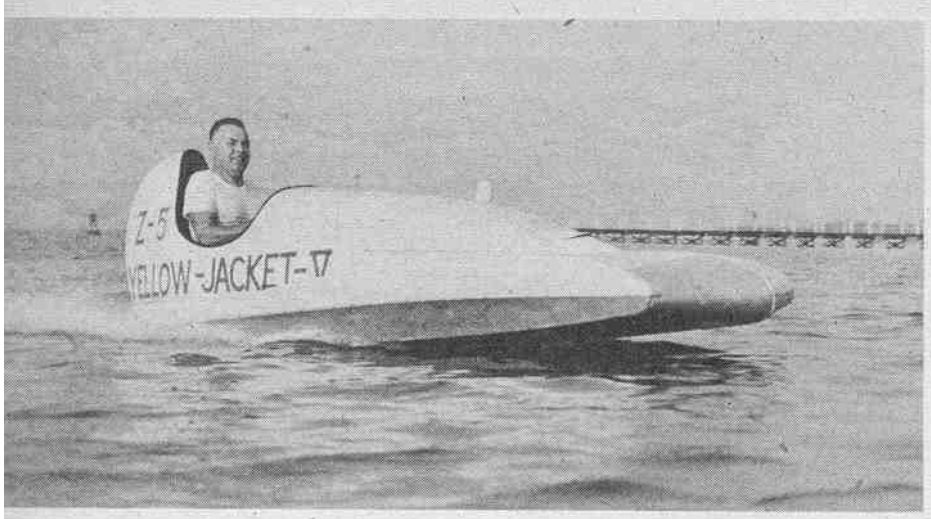
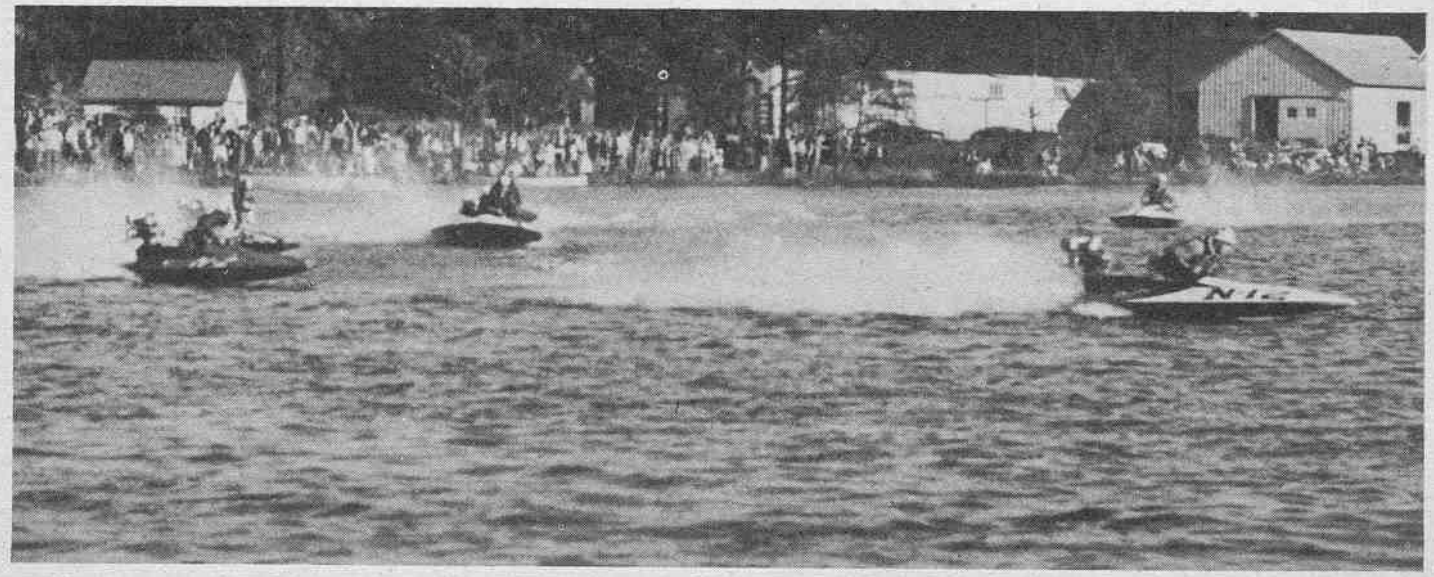


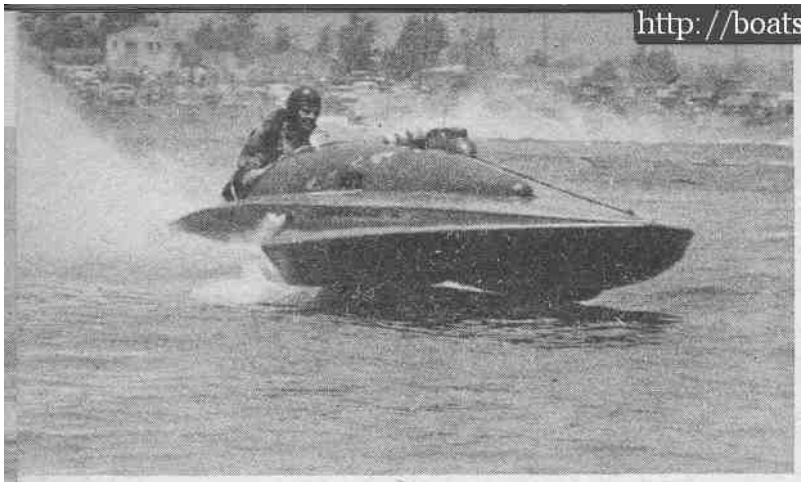
Newcomers to inboarding ranks are the 48 c.i. hydros and runabouts. Largely responsible for the development of the new class is W. Reese Layton, Baltimore, Md., shown here in a 1948 model runabout designed by George Rhoads, Lancaster, Pa. The class is now well established in the U. S.

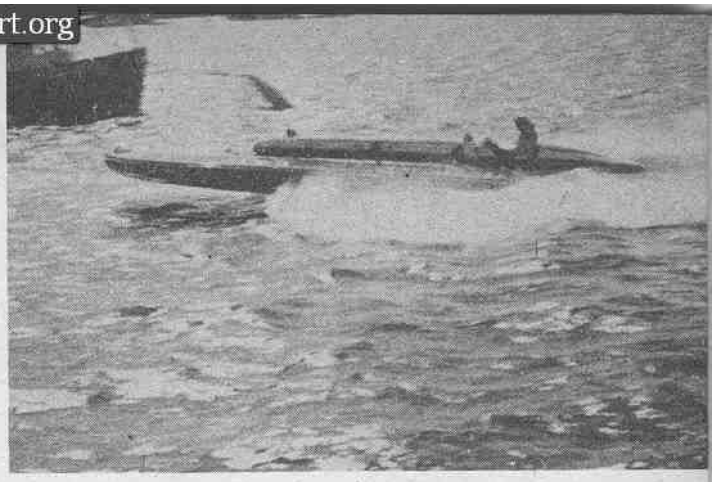
Promoters of Rhode Island's Seekconk Speedway have flooded their former midget bowl with a reported 15,000,000 gallons of water and plan galloping shingles instead of four-wheeled action in 1952. A Merc.-powered hydro gets in a pre-season test run. The course measures 1/4 mile.

Two West Coast hydro pilots, fifteen-year-old Johnny Drake o of Los Angeles, practice a lil' close harmony in their Class A program of outboard, inboard and stock racing is slated for

Class C racing outboard hydroplanes are shown jamming through a turn at Jamesburg, N. J., at the SCODA short-course championships. More than forty hydros battled for titles in Classes A, B and C over a dizzy half-mile oval course. Vic Scott, eventual point winner of Class C and title winner three years running, is pictured in second position. Pack Kelly, Pinebush, N. Y., leads at this stage. Short courses have added spectator appeal.







(Above) Lorin Pennington in "Copperhead 11."
(Right) Lorin Pennington.

(Above) Charles Thompson at helm of "Miss Pepsi."
(Left) W. Melvin Crook.

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timing facilities for laps are available.

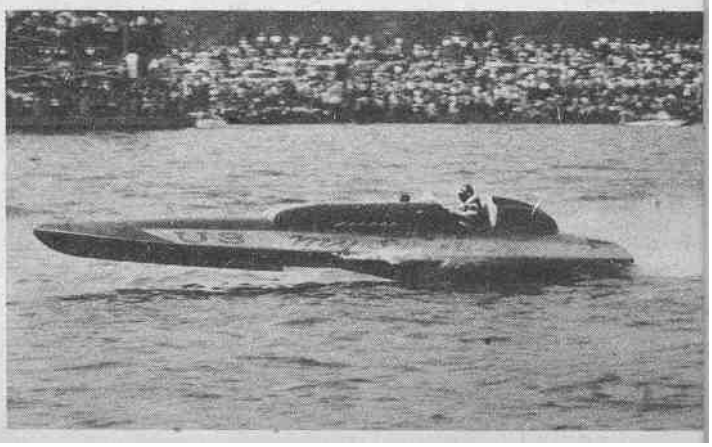
The other twelve drivers who have previously qualified for the 100 Mile an Hour Club are: Guy Lombardo, Gar Wood, Stanley Dollar, Bill Cantrell, Harold Wilson, Jr., Lou Fageol, Dan Arena, Horace Dodge, Stanley Sayres, Paul Sawyer, Chuck Thompson and W. Melvin Crook.

A considerable number of European drivers have also topped the 100 mile mark both in competition and honestly timed trials. These records, however, were made under the rules of the International Boat Federation rather than the American Power Boat Ass'n. We hope to have an article on the European "Hundred Milers" in a forthcoming issue of BOAT SPORT.

Charles Thompson (left) is given Hall of Fame award by W. R. Huber.

(Right) Guy Lombardo.
(Below) Guy Lombardo in "Tempo VI."

(Left) William Cantrell.
(Below) William Cantrell in "My Sweetie."



Stanley S. Sayres

Louis J. Fageol

IT'S THE 100 MILE AN HOUR CLUB TODAY . . . TOMORROW IT WILL BE THE 200 MILE AN HOUR CLUB . . . THE DAY AFTER TOMORROW, WHO KNOWS? . . .

AMERICA'S 100 MILE AN HOUR CLUB

THE most exclusive speed society in North America is speedboatings' 100 Mile an Hour Club. Membership is open to any water speed king who has topped the century mark either in competition or during an officially approved mile trial in accordance with the regulations and within the boundaries of one of the regions of the American Power Boat Association. Sounds easy in this day of supersonic speed, but the doing is something else again.

The late British speed king, Sir Malcolm Campbell, the first man to travel at more than 300 m.p.h. in an automobile and also the first driver to top 125 m.p.h. in a speedboat, when asked to compare the two, said, "There is no basis of comparison between high speed on land and on water. A mile trial on land is a relatively stable experience with little other than a visual sensation of movement. On water, high speed has the same snarling lack of stability one might expect to encounter on a ride on an angry lion's back."

In the first half of the Twentieth Century only twelve men qualified under the rules for the Gulf 100 Mile an Hour Club. Early in 1952 three new members were presented the coveted certificates of membership in the Club at the Gulf Marine Racing Hall of Fame Awards breakfast at the Belmont Plaza Hotel, New York City, in recognition of their speed accomplishments during 1951.

Newcomers to the exclusive group included Ted Jones, Seattle, Wash., who drove Slo-Mo-Shun V to an average of 108.524 m.p.h. in the second heat of the Seafair Trophy Race at Seattle, Washington, August 12, 1951.

That August afternoon on Lake Washington was a high speed boating fans' heyday. Lou Fageol helmed Slo-Mo-Shun IV to two new world's speedboat competition records. Lou clocked 112.530 m.p.h. in the second lap of the second heat and averaged 111.742 for the entire heat to, ironically enough, beat Ted Jones. But Jones in joining the Club that heat, with a 108 plus average, and also in beating Fageol in the first and third heats to take the trophy on high points, had many reasons to be proud. Not only did he claim the Seafair Trophy and membership in the 100 Mile an Hour Club, but the lone boat to top him all day was Slo-Mo-Shun IV, which, like Slo V, had been designed by Jones himself. This gives Jones the distinction of being the designer of two of the world's fastest speedboats.

Slo-Mo-Shun IV in 1950 with owner Stanley Sayres at the helm broke the world's records for unlimited speedboats with a mile average of 160.323 m.p.h.

Lake Washington was a busy speedway in 1951 for new water records. Morlan A. Visel, designer-driver of Los Angeles, Calif., hurled Hurricane in two directions over a measured mile on Lake Washington August 6 at 133.493 m.p.h., a plenty respectable clip for any boatsman and more than worthy of the century club award.

The third newcomer to the 100 Mile an Hour Club in 1951 was Lorin Pennington, Santa Monica, Calif., who became the second member of the exclusive group to better the mystical 100-mile-an-hour mark in other than a Gold Cup Class boat. On Salton Sea, Calif., Nov. 9, 1951, Pennington drove his 266 cubic inch hydro Copperhead III at an average speed of 101.141 m.p.h. to join Paul Sawyer in winning his place with "the fifteen" the hard way.

Rules of the Club's charter stipulate that the speed shall have been registered in accordance with all the regulations of the American Power Boat Association for mile trials or competitive racing. A mile-trial mark shall be an official one of two consecutive one-mile runs, one of which shall be made in one direction and one in the opposite direction. A competitive mark shall be the average speed for one heat, not for one lap, except in certain races such as the "Gold Cup," "President's Cup," and others, where

(*See over*)

WHAT KIND OF FUELS ARE THE FAST BOYS USING?

By Wallace Francisco

TO know something of fuels is to know many of the answers to varying engine performance. A more than nodding acquaintance with the value of properly blended fuel is necessary if you hope to have your boat consistently up in front of the pack in competition, or listed in the record books as a competition titleholder.

Since alcohol as a fuel base offers from 3% to 15% extra power over gasoline I will discuss only some of the factors concerning obtaining best performance with alcohol-base fuels.

It is important to realize immediately that there is no all-purpose fuel. Technically, the internal combustion engine burns oxygen—not fuel. The greater the weight of oxygen the engine can burn per unit of time and per unit of engine capacity the higher its efficiency.

As the fuel vapor is less than 20% of the volume of air packed into the combustion chamber the condition of the atmosphere is highly important if maximum power output is to be obtained. Where air pressure is lighter and humidity lower, as at high elevations, output drops off. A supercharging effect must be added or a different fuel blend introduced to offset the adverse carburetion effect higher altitude operation introduces.

In the boating world an irrefutable example of the advantage to be found with heavier atmospheric operation is the 250-feet-below-sea-level Salton Sea, Cal. course so often the setting for new records. By reverse token, complaints of power drop-off experienced by Eastern outboard drivers last year at Lake Como, Pa., high in the Pocono Mountains, illustrates the adverse combustion efficiency at locations where the atmosphere is less dense.

Definitely, if you are an alcohol burner with either a two or four-cycle engine you must recognize that trying to operate with a single fuel blend under all atmospheric conditions is like attempting to play golf with one club.

Some fuels are "hot," some are "cold," but no fuel can be both. A "hot" fuel favors operation at low compression; gives easier starting and greatest efficiency in low humidity at high r.p.m. and low torque. "Cold" fuels do best under conditions of high compression, high humidity and high thrust. Believe me, and every other fuel expert—there just is no such thing as an all-purpose fuel. The fast boys recognize this fact.

Chemicals have been added to fuels for several purposes. The term blend is used to refer to alcohol and to lubricants to which additives have been mixed with definite ends in view. Some chemicals are "inhibitors:" these keep acid from forming, prevent corrosion and rust, prevent oxidation and keep oil from breaking down under heat and moisture into dirt and sludge.

Other chemicals are "detergents": these not only dissolve dirt, acids and carbon that form in the fuel and oil during combustion, but hold these deposits in suspension until they are carried away.

Other fuel additives are used to prevent erratic engine operation. For example one of my own additives, *Power Mist Stabilene*, is designed to counteract effects of moisture and impurities in methanol alcohol and to reduce the likelihood of shock explosion when heavy nitrates are added to a fuel.

Anyone can make up a simple methanol alcohol—castor oil blend that will operate, and at times operate well, but for competitive operation under varying conditions such a mixture will not give as efficient results as a fuel specially blended for specific atmospheric and compression conditions. And only by making the most of every potential to realize peak power under any given set of circumstances can you hope to keep up with the savvy boys who are doing just that.

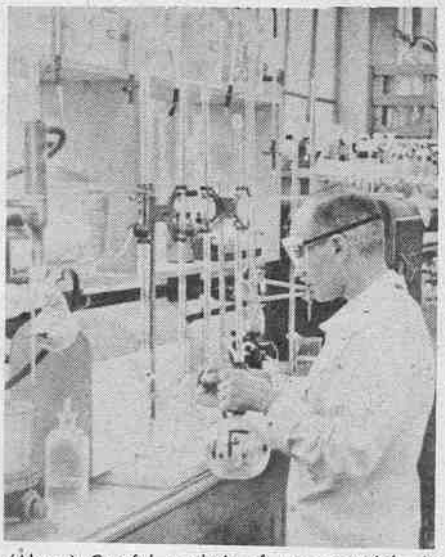
Competition engine owners, faced with variable timing factors, should conduct considerable experimentation and patient testing with different fuel blends. Logging results obtained during different atmospheric conditions is important. Don't always blame that poor operation on faulty ignition, a hook in the bottom of your hull or on the prop—it may be fuel.

Chemical additives play an important part by either increasing or decreasing normal explosion period of fuel. Too rapid propogation of flame must be slowed down to suppress detonation which is the abnormally rapid explosion taking place while the normal charge is burning. The pressure curve reaches a high peak and then quickly drops off to a low level during the remainder of the power stroke, subjecting the engine to general overloading, value burning, bearing strain and lubrication failure.

Pre-ignition is another trouble due to uncontrolled combustion which occurs prior to normal spark ignition and which may be controlled through fuel additives. Pre-ignition may start detonation and transversely detonation may cause pre-ignition. Both are destructive, causing excess heat and wear.

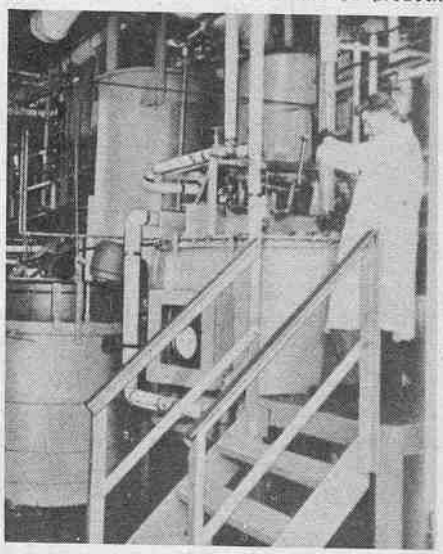
A correctly blended fuel maintains a high pressure throughout the entire power stroke and permits the most power to be delivered from the fuel-atmosphere mixture.

(*Turn to Page* 34)



(Above) Careful analysis of raw materials, intermediates and finished products insures maintenance of high standards of purity and potency.

(Below) Constant sampling and careful analysis are required to control the course of the reactions from raw materials to finished product.



PRINCIPAL RACE DATES FROM COAST TO COAST

(BOAT SPORT publishes these dates in good faith but assumes no responsibility for last minute cancellations. For confirmation check with race sponsors or officials.)

A.P.B.A. RACE DATES

REGION NO. 2

8/3	E. Hampton, L. I., N. Y.	O.H.
8/30-9/1	Rochester, N. Y.	SO
9/7	New York, N. Y. (Harwood Trophy)	I

REGION NO. 3

7/4	Mays Landing, N. J.	O.H.
7/27	Long Branch, N. J.	I
9/1	Millville, N. J.	I & SO
9/13-14	Red Bank, N. J.	I & O

REGION NO. 4

5/31-6/1	Elizabeth City, N. C.	I
6/14-15	Baltimore, Md.	I
8/3	Essex, Md.	SO
9/20-21	Washington, D. C. (President's Cup)	I-O.H.-SO

REGION NO. 5

4/27	Miami, Fla.	I

REGION NO. 6

6/7	Pittsburgh, Pa. (Steel Cup)	I
6/8	Columbus, Ohio	O.H.
6/15	Russells Pt., Ohio	O.H.
6/21	Akron, Ohio	O.H.
6/22	Akron, Ohio	I
6/22	Dayton, Ohio	O.H.
6/28	Windsor, Ont. (Maple Leaf)	I
6/29	Pontiac, Michigan	I
7/4	Detroit, Mich. (Detroit Memorial)	I
7/4	Algonac, Mich.	O,H.
7/4	Paw Paw, Mich.	SO
7/6	Cheboygan, Mich.	SO
7/13	Columbus, Ohio	I
7/13	Dayton, Ohio	SO
7/20	Unrichsville, Ohio	I
7/27	Ludington, Mich.	O.H.
7/27	Portsmouth, Ohio	I & O.H.
8/3	Louisville, Ky.	I
8/3	Paw Paw, Mich.	SO
8/9-10	Marine City, Mich.	O.H.
8/10	Dayton, Ohio	I
8/16-17	Marietta, Ohio	O.H.
8/24	Cincinnati, Ohio	I
8/30	Detroit, Mich.	I
9/1	Detroit, Mich. (Silver Cup)	I
9/1	Paw Paw, Mich.	SO
9/7	Frankfort, Ky.	I

REGION NO. 7

6/29	Bedford, Ind.	O.H.
7/5	Sturgeon Bay, Wis.	O.H.
8/19	Winneconne, Wis.	SO
10/16-17	Madison, Ind.	I

REGION NO. 8

7/4	Keokuk, Iowa	I

REGION NO. 9

4/27	Baton Rouge, La.	I & O
5/25	Jackson, Miss.	O.H.
6/8	Pensacola, Fla.	I & O
6/14-15	New Orleans, La.	I & O
6/22	El Dorado, Ark.	O.H.
6/29	Montgomery, Ala.	I
6/29	Biloxi, Miss.	I & O
7/4	Lake Village, Ark.	O.H.
7/13	Lafitte, La.	I & O
8/3	Baton Rouge, La.	I & O
8/31	Madisonville, La.	I & O
9/1	Concordia, Miss.	O.H.

REGION NO. 10

7/4	Seattle, Wash. (Seafair Trophy)	I
8/9	Seattle, Wash. (Gold Cup)	I

REGION NO. 11

4/13	San Francisco, Calif.	SO
4/20	San Francisco, Calif.	O.H. & SO
4/27	Fresno, Calif.	I & O
5/18	Modesto, Calif.	I
5/30	Stockton, Calif.	O.H.
5/30-31	Lucerne, Calif.	SO
6/1	Stockton, Calif.	I
6/8	Redding, Calif.	SO
6/8	Sacramento, Calif.	I
6/22	Richmond, Calif.	SO
6/22	Merced, Calif.	I
6/29	Sacramento, Calif.	O.H. & SO
7/4	Oakland, Calif.	I
7/4	Modesto, Calif.	O.H.
7/4	Turlock, Calif.	SO
7/5	Lakeport, Calif.	I
7/6	Donner Lake, Calif.	O.H. & SO
7/13	Lake Tahoe, Calif.	I
7/20	Sacramento, Calif.	I
8/17	Redding, Calif.	SO
8/24	Oakland, Calif.	I
8/31	Sacramento, Calif.	O.H. & SO
9/7	Sacramento, Calif.	I
10/5	Oakland, Calif.	I
11/2	San Francisco, Calif.	O.H.

REGION NO. 12

3/30	Blythe, Calif.	SO
4/6	Bakersfield, Calif.	I
4/6	Canyon Lake, Ariz.	O.H. & SO
4/13	San Diego, Calif.	SO
4/20	Lake Malibou, Calif.	O.H. & SO
4/27	Hansen Dam, Calif.	SO
5/4	Parker, Ariz.	I
5/11	Bakersfield, Calif.	O.H.
5/25	San Diego, Calif.	O.H.
5/30	Long Beach, Calif.	I
6/15	Bakersfield, Calif.	SO
6/15	San Diego, Calif.	I & O.H.
6/22	Long Beach, Calif.	O.H.
7/4	Long Beach, Calif.	I
7/5	Santa Barbara, Calif.	I
7/6	Santa Barbara, Calif.	O.H. & SO
7/13	San Diego, Calif.	SO
7/27	Long Beach, Calif.	O.H.
8/10	San Diego, Calif.	O.H.
8/17	Long Beach, Calif	SO
6/17	San Diego, Calif.	I
9/1	Long Beach, Calif.	I
9/14	Bakersfield, Calif.	SO
9/21	San Diego, Calif.	I
10/12	Long Beach, Calif.	I
10/19	Parker, Ariz.	O.H. & SO
10/26	Blythe, Calif.	SO
11/8-11	Salton Sea, Calif.	I-O-SO

REGION NO. 14

5/18	Southmont, N. C.	O.H.

REGION NO. 15

5/4	Beaumont, Texas	I & O

REGION NO. 16

5/25	Salt Lake City, Utah (Regionals Outboard)	I-O.H.-SO
6/1	Nampa, Idaho	I-O.H.-SO
6/8	Ogden, Utah	I-O.H.-SO
6/29	Loveland, Colo.	I-O.H.-SO
7/4	Provo, Utah	I-O.H.-SO
7/13	Casper, Wyo. (Regionals, SO)	I-O.H.-SO
7/20	Grand Lake, Colo.	I-O.H.-SO
7/27	Denver, Colo.	I-O.H.-SO
8/24	Logan, Utah (Regionals Inboard)	I-O.H.-SO

SU MARATHONS

5/4	Santa Barbara, Calif.	(?) Miles
5/11	Brigham City, Utah	35 Miles
5/18	Lake Mead, Calif.	80 Miles
5/30	Detroit, Mich.	50 Miles
6/15	Fresno, Calif.	80 Miles
6/22	Fruita, Colo.	(?) Miles
6/29	Neenah, Wis.	92 Miles
7/4	Daytona-Hollywood, Fla.	(?) Miles
7/4	Modesto, Calif.	75 Miles
7/20	Marysville, Mich.	85 Miles
7/20	Sacramento, Calif.	(?) Miles
8/10	Topinabee, Mich.	87 Miles
9/7	Kalamazoo, Mich.	100 Miles
10/5	Needles, Calif.	115 Miles
10/12	Oakland, Calif.	85 Miles

N.O.A. RACE DATES

5/11	Rome, Ga.	S.O. & O.H.
5/18	Hamlet, N. C.	S.O. & O.H.
5/25	Cleveland, Tenn.	S.O. & O.H.
5/30	North-South Championship Somerset, Ky.	O.H.

N.J.O.A. RACE DATE

5/25	Carlstadt, N. J.	O.H.

S.C.O.D.A. RACE DATES

5/30	Moorestown, N J.	O.H.
6/14	Hagerstown, Md.	O.H.

LONG ISLAND EVENTS

Bill Steinfield called us up just as we were going to press to say that the Stock Outboard Racing Ass'n. of Long Island, Inc. is scheduling the following events for June and July:

June 1 at Glen Cove (A.P.B.A. sanctioned)

June 8 at Rockaway Playland (not sanctioned by the A.P.B.A.)

July 27 at Huntington (A.P.B.A. sanctioned)

COMPETITION HINTS

A red-painted squirt gun full of carbon tetrachloride and a bottle of castor oil should be a must in every tool box. After pre-race testing, if spark plugs have been functioning properly they will show a rich chocolate brown color on the porcelain. Don't replace them untouched and expect them to start readily. Squirt the electrodes and porcelain carefully with the carbon tet., permit them to dry and then replace them in spark plug holes. Be certain that the high-tension leads are securely fastened to the plugs —a lost wire in competition means a lost heat. Then, when plugs are properly installed, pour a small quantity of castor oil over high-tension contacts to prevent shorting out in competition. The use of castor oil is particularly important in salt water racing where ignition short circuits are more likely to occur.

Use a red-painted or distinctive squirt gun so that it will not be confused with your carburetor squirt gun.

In cold weather operation ether may be squirted into the carburetor intake. For warm weather operation white gasoline or benzol will suffice. But remember that your squirt prime won't do any good if the rotor is not open so the raw mixture can get into the crankcase.

For extremely balky engines have your pit stooge squirt a small amount of ether directly into the plug holes, then replace plugs immediately. Start up as soon as possible or the ether will evaporate.

Sid Street, winner of the 1951 266 c.i. class nationals, is pictured being awarded the Governor's Cup in recognition of winning the Free-for-all event at the Fort Lauderdale, Fla., Power Boat Regatta, March 2. More than 10,000 spectators watched Street in "Z-Z-Zip III" beat out second place finisher Ray Gassner of St. Petersburg. Co-chairman, R. C. Wells, presents the Cup.

(Left) Impish-faced, tow-headed Kenny has been in 19 Class A races; placed first 11 times; second, 6 times; beaten 200 older rivals. But he says, "I like the nice people that I meet best of all."

(Above) Kenny's boat, "Poor Kid," is 9½ ft. long and weighs 160 pounds. "You ought to see her go!" he told us recently "I'll stack my outfit against anything in her class for real speed."

10-YEAR-OLD KENNY STALLMAN HAS WON MORE SPEEDBOATING TROPHIES THAN HE CAN CARRY UNDER BOTH ARMS. HERE—IN HIS OWN WORDS—IS THE STORY OF A CHAMPION WHO COMPETES IN CLASS A ADULT RACES ONLY . . . . . .

WHIZ KID OF THE OUTBOARDS

By Kenny Stallman

THIS is the first time I have been asked to write something for a magazine and I have thought and thought of what I should say about outboard racing and why I like to race and how I learned to race.

Maybe first I should tell something of myself. I was born in Eagle River, Wisconsin. I weigh sixty pounds and I am four feet, four inches tall. The boat I race is named The Poor Kid, and it is powered by a Martin "60." The boat is nine and a half feet long and the engine is 7.2 horsepower. You ought to see it go—The job takes off like it's rocket powered and has plenty of umph! My father named the boat The Poor Kid because the first time he saw me in a race, he said to my mother, "The poor kid, he looks so small out there." I won the race.

So far, I have been in 19 Class A races in the past two years. I have placed first 11 times; second 6 times and I guess I have beaten about 200 racers, almost all of them grown-ups. Some of the men I have raced against have been pretty old, about 45 years old, I guess.

What I like most about racing is squeezing the throttle. It's great when you're passing someone. But when they pass you, oh boy! The spray! We call it the rooster's tail. It has drops as big as quarters. They come up and hit you hard in the face. But that's nothing like when someone climbs over you. That happened to me in one of my early races. The water was very choppy and one fellow climbed right up the side of The Poor Kid. He bent the steering wheel and knocked off the throttle. But I fixed it right away and I won that race. I beat the fellow who climbed over me.

I have lived all my life on Bass Lake at Eagle River. My father bought a speedboat when I was four years old and he let me try it. When I was seven years old, he began training me. Soon after my eighth birthday, my father let me enter a local race. There were ten starters, all grown-ups. I guess I was kind of scared. I almost turned the wrong way around the first buoy. But I followed the others until I was second with four lengths behind. I passed the leader and came in first by around 15 lengths.

I'm in the fifth grade at school. I've got the walls and ceiling of my room at home just covered with the models of ships and planes I love to build. I go in for baseball and football, and I'm right wing on our Pee Wee hockey team for boys under 12. Guess I'm really a water man: ice in the winter and the lake in the summer.

So far, my father and I have never raced. He says he won't take me on because I take the turns too easily. It's not easy, though—I practice them hour after hour.

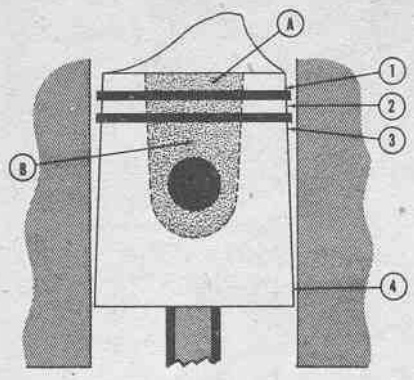
People ask me what I want to be when I grow up. I hope to race for a long time and then become a salesman of boats and motors.

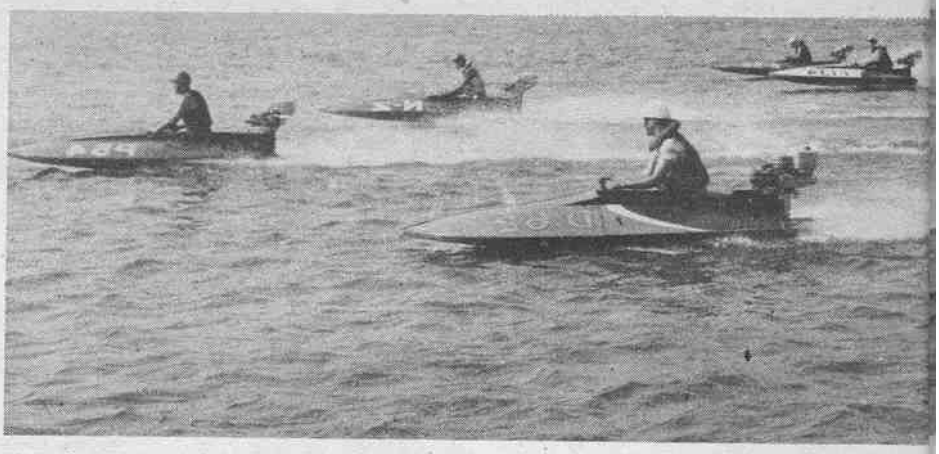
KENNY STALLMAN'S RACING RECORD

1949—aged 8, Kenny raced in 5 juvenile events. Rec'd. 2 firsts, 1 second, 2 thirds.

1950—in Class A runabout against adults: Wakefield, Mich. first; Michigamme, Mich. second; Eagle River, Wis. first: Three Lakes, Wis. 2 firsts; Land O'Lakes. Wis. fourth; Gladstone, Mich. first.

1951—Mosinee, Wis. first; Wausau, Wis. second; Crystal Falls, Mich. second; Michigamme, Mich. (Governors Race) first; Eagle River, Wis. first; Three Lakes, Wis. first and second; Minocqua, Wis. second; Freemont, Wis. 2 firsts.





To reduce piston sticking to a minimum, the pistons should be very carefully tapered from the top as is shown in this exaggerated drawing. The area of the greatest expansion is shown in dotted outline at A and B. By pocking this area with a sharp tool the indentations that are made will help carry more lubricant to this point.

THE outboard racing fraternity is composed of a vast number of guys and gals dedicated to a life of bruised knees, stiff joints and telltale grease stains under fingernails. Some of them run consistently in the money race after race. Others go to regatta after regatta and never finish a heat. Still others get their eggbeaters going for every event but always finish back in the spray in the rear of the field.

Drivers can't be made or taught to drive by the printed word, but engine and boat performance can be improved by carefully following out long proved tips and discarding some of the phony theories that have no more substance in fact than witch doctors' tribal practices have in accepted medical profession.

If you are new to outboard racing keep in mind that drivers like Fred Jacoby, Jr., Frank Vincent, Bobby Meyers, C. Mulford Scull, Dick Neal, Thom Cooper and others who won plenty of races 10 years ago knew substantially everything about engine hop-up practice that is known today. Few real secrets exist in the game. Don't think you are the first to try nitromethane or hydrogen peroxide as a fuel additive. Doubtless Tommy Tyson or some other hot shot of his day tried the same thing and many others.

Applying your available free time profitably to proved means of bettering your engine and forgetting about those pet secrets you dreamed up that you are sure will add four m.p.h. to that PR-65 or new 10 hp Merc. offer the quickest and surest means of getting your outfit into the front running ranks. Jimmy Mullen and Doug Fonda in their day believed in perfect refinement of the factory product. The same theory keeps Gil Petermann, Doug Creech, Vic Scott, Paul Wearly, Bud Widget and other drivers in the top ranks.

Sure, outboarders collectively hold to more screwball ideas than a ten-year-old scientist with his first chemical set. I know of a B-driver who has cut up and ruined more than a few good racing components with experiments on altered rotor valves, block porting of a radical nature, fancy windowed pistons, fuel additives, radical experiments with lubrication and timing ideas unique to his own mind.

That he isn't overly laden with knowledge of two-cycle engine operation and knows absolutely nothing about ignition hasn't caused him to bone up on the subjects. He prefers to ad lib. He spent one entire winter converting a fair Class A engine from magneto to battery ignition system with the noteworthy results that in two full seasons of starts he failed to finish a heat in Class A racing. But even with that background he'll still swear that battery ignition on a A engine is better than the stock magneto set-up. If two seasons of ho-hum racing experience can't convince him nothing else will.

Okay, so he gets a kick out of experimenting. So does the driver who works along recognized lines. I don't mean one should not strive for originality, but until you have worked an engine to its finest point with known means of bettering it, I think it is plain simple-mindedness to leap off into the unknown.

Another driver of my acquaintance had a really hot C that ran like crazy for parts of a race and then bogged down enough to keep the outfit back with the strokers. This driver had a propeller fixation and wasted two years and countless dollars trimming, repitching and testing new wheels. Actually his performance problem was licked when he gave in to suggestions that he check his ignition and carburetion. A new condenser, a flywheel bump and a new carburetor float gave him a consistency he'd been looking for for two years.

Actually there is no "royal road to success" in outboard racing. The drivers who run out front understand the operation of their engines, lay stress on perfection of the original factory set-up with a minor number of modifications and plenty of hours spent on balancing, lapping, and the establishment of perfect timing.

In the past 20 years of playing around with two-cycle engines I have tried a lot of hocus pocus, held to some pretty hair-brained ideas and finally realized that attention to detail pays off far better than originality of design. Factory engineers basically set up a good engine based on plenty of predesign experimentation with more and better shop facilities than those available to the average race driver. Short of that final hand work, balance and fuel conversions, the factory racing engines originally are as good as most hop-up experts can make them.

Here are some of the false theories held by tyros as well as experienced outboarders. Maybe your pet theory is one of these. If it is, shake it but quick.

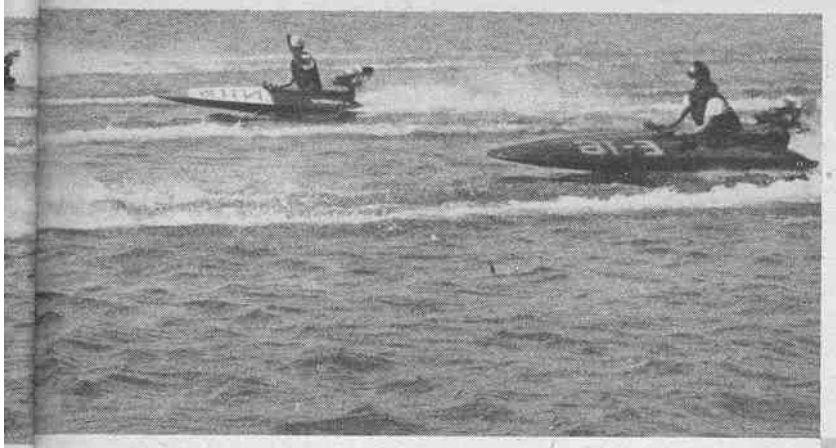
Very prevalent is the thought that chromed cylinder walls add to an engine's speed. This just ain't so. In fact cast iron bores are faster.

Why then add expensive chrome to cylinder walls if not to add speed? Chroming is done for two reasons. It prevents excessive wear and with a block that is true, it aids in maintaining it in perfect round longer. Second, since rules permit only slight oversize, usually .020", chroming is used as the most effective method to return oversize blocks to legal limits —blocks which otherwise would not be raceable within the rules.

As cast iron is more porous than chrome, cast iron retains more oil and has a tendency to provide a better piston to cylinder wall seal thus offering better head compression. But, and this is the joker, a perfect cast iron bore has a very short life because of its softness. Actually some hot running cast iron blocks begin to fall off noticeably after several heats. So chroming is certainly recommended—and by an outboard chroming specialist who knows your problems.

Another popular misconception is that polished rods will add to the speed of an engine. Try a set of polished connecting rods against a standard factory set and if you detect any appreciable difference in rpm between the two sets you must have micrometric sensitivity. Polishing rods just won't give added speed. Though the difference would be too slight to notice on a tachometer, polishing by removing some slight area from the rods increases crankcase area infinitesimally and actually would slow up the engine.

If rods have slight nicks, and most of them have, they may



(Left) Fast field of Class C hydros get underway. Letters preceding numbers on hydros indicate drivers' home regions. P-54 is from Pa., D-62 from Conn., E-16 from Wash. and N-116 from N. Y.

(Below) Important to outboard racers are the stooges who do the heavy hauling, sit on sidelines during the action and get cussed out for slow spark plug changes. Pictured here is pre-race activity at the SCODA Outboard Regatta, Morrisville, Pa.

be given prolonged life by polishing. Removal of nicks and indentations will cut down possibility of crystalization prone to start at these points. Of value to running balance of the engine is perfect weight balance between rods. They should be weighed on a pharmacist's scale and in the polishing process enough metal should be removed from the heavier to put it in weight balance with its mate.

The pride-in-cold-plug school of drivers is a sizeable one. I have known outboarders who sat out races because they refused to substitute an R2 for an R2S plug, feeling that the use of the warmer plug would adversely effect their engines. The answer to that is "nuts." Be guided in plug selection by the range plug which by its nice dry, chocolate brown appearance indicates proper operation for the engine's particular block, piston and ring condition. I have known instances in which two different range plugs have been used on an engine at a given time. Naturally the ideal situation is to have both cylinders of an engine operate at the same compression ratio, same degree of heat distribution and with the same compression chamber contouring so the same range plug is suitable for both cylinders. When plugs of the same heat range won't operate with the same insulator and electrode appearance on a twin-cylindered engine this is a definite indication that one cylinder is imperfect or improperly set-up. But if this condition shows up at a race don't hesitate to switch to a plug that will temporarily compensate for the ignition difference.

Here are a few plug tips. When inserting plugs be sure the cylinder head plug threads are clean. Be sure the gasket is squared properly on the plug. Be particularly careful with aluminum heads that in pulling plugs up tightly you don't strip the threads. Be certain though that plugs are pulled up tight (about three-quarters of a turn beyond finger tightness with new gaskets—less with used gaskets) as loss of compression or burned pistons may result. Be sure to check plugs for radical cracks in the porcelain or foreign matter as grains of sand get in between the electrodes. Finally, burr the high-tension lead contact threads so vibration won't shake the nut loose, or better still flow a drop of solder onto the threads just beyond the nut to assure that the nut won't unscrew.

SOUP-UP SUPERSTITIONS

DRIVERS CAN'T BE MADE OR TAUGHT TO DRIVE BY ONLY THE PRINTED WORD, BUT ENGINE AND BOAT TROUBLE CAN BE IMPROVED IF YOU FOLLOW THE TIPS GIVEN BY THE VETERAN EGGBEATER WHO WROTE THIS ARTICLE . . . .

PART II

CAN an outboard engine be given a supercharged effect by increasing the size, direction or configuration of the carburetor air intake? Let's kill that one quickly. Outboard speeds in general are in the under 65 mph and the additional air pressure created by use of any reasonably sized air funnel at this speed is negligible. Actually the ram-jet principle is not effective except at speeds many times that of an outboard racing boat so an attempt to supercharge in this way is impractical. Racing rules preclude the use of a mechanical supercharger of any type so look for your speed gains elsewhere. Here, however, is one of the best spots to try

(*Turn to Page* 32)

GAR WOOD — THE GRAY FOX OF ALGONAC

(*Continued from page* 11)

successful defense and fourth Harmsworth win.

The history of these two world's record-breaking Packard engines is amazing. Not only did they rest for four days at the bottom of the St. Clair River, get a quick refurbishing and then break the world's record, but those same two engines stuck with Gar Wood for the balance of his career, serving him as strong witch medicine that ranked with his Teddy bears.

In 1929 Wood's "America VII" was challenged by H. O. D. Segrave to compete in the Count Volpi Cup race at Venice, Italy. Gar was at work on "Miss America VIII" but he could scarcely ignore Segrave's challenge since the winter before at Miami, Fla., Segrave had beaten Wood—albeit inconclusively as Wood's rudder had broken during the race making it a one-sided match.

The only phase of speedboating that offered a greater challenge to Gar than competition was the excitement and thrill of working on a new and yet untried design. With "Miss America VIII" underway, Wood passed up the opportunity to even his match competition with Segrave and sent his brother, Phil, and Orlin Johnson to handle "Miss America VII" in his stead. Shortly after the start of the event, "Miss America VII," apparently shook loose some planking on her forward step. She porpoised several times, then with the full power of the two 770 horse Packards behind her, leaped with a twisting motion twenty feet clear of the water. Phil and Orlin were hurled nearly thirty yards through the air while the wildly careening boat finally crashed at 90 m.p.h. into the shore line and sank below the surface of the Gulf of Venice. Johnson suffered a fractured skull. Phil was shaken up and suffered minor cuts. But again those two engines were recovered.

Wood's competition record from that stage onward consisted of five more Harmsworth defenses in which he successfully retained his crown four times. His brother George won the lone defense for the United States that Wood himself failed to win.

And ironically, the two motors that had already been dunked in two continents rode to six Harmsworth titles, three new speed records in "Miss America VII" at 93.12 m.p.h. in 1929, "Miss America IX" at 102.256 in 1931 and "Miss America IX" at 111.712 in 1932. This in itself was enough to prove both stamina and speed of the V 12 Packards but these same engines were two of the four that made up the power plant in "Miss America X" when on September 20, 1932 on the St. Clair River the gigantic powered mahogany splinter roared to a then phenomenal 124.76 m.p.h. record. This was to be a world's mark for five years and a United States record for a decade and a half, and "Miss America X" was to win the Harmsworth in 1932 and 1933.

Wood earned his nickname, the Gray Fox of Algonac, because of the secrecy that inevitably surrounded his boats prior to their first test runs, combined with his prematurely gray shock of unruly hair and his racing technique which in several instances converted pre-race prophecies of defeat into race course wins.

Only once did Wood's strategy backfire. That one incident created an international furor. It occurred when Wood's philosophy of race-to-win made him the focal point of censure or support by two conflicting schools of sportsman philosophy. It was in 1931 when Kaye Don challenged and Gar defended in his new "Miss America IX" with George Wood a third contestant and outsider in "Miss America VIII." Rivalry had run high. The race assumed international prominence when in April at Buenos Aires, Argentina, Kaye Don in "Miss England II" took over the world's speed crown at a 103.49 m.p.h. average, breaking "Miss America IX's" mark by about a mile and a half. As the summer gradually passed, additional interest was added when in July on Lake Garde, Italy, Don pushed "Miss England II" to a nearly unbelievable 110.223. On the Detroit River, Sept. 6, the world's fastest and most evenly matched speedboats were to tangle. Before 400,000 amazed speedboating fans "Miss England II" beat Gar by more than a mile over the thirty mile distance in the first heat. Don averaged 89.913 and clocked 93.017 for one lap.

It was evident that "Miss England II" powered by a pair of 2000 horsepower Rolls Royce engines outclassed Wood's "IX" with two new Packards supercharged to attain 1200 h.p. from each motor. George Wood in "Miss America VIII" was definitely an outsider. After all, his power came from two competition worn engines—or at least that's what the fans figured.

Wood was annoyed by his first Harmsworth defeat and then angered by Don's refusal to grant a forty-five minute delay to permit fuel tank repairs to "IX." It was then that Wood resorted to alleged "trickery."

Under the international rules governing the Harmsworth, if a contestant jumps the starting gun by less than 5 seconds, he is penalized three times the number or fraction of seconds by which he violates the start. But if the gun jumping is by an interval of greater than 5 seconds, disqualification is automatic. Presumably, and according to a later statement by one of the officials, Wood with his "Miss America IX" realized that he was hopelessly outclassed. He purposely baited Don across the startling line and into disqualifiation knowing that "Miss America VIII" with George Wood at the helm, a poor third place finisher in the first heat, would then need only to finish to keep the Harmsworth trophy for America. Critics of Wood seemingly overlooked the fact that while the move on Wood's part might be considered somewhat "foxy," Don could see the clock as well as Wood. After all, Don was a big boy who knew the rules of the game. In damning Wood, his detractors seemed to infer that Gar forcibly towed Don across the starting line ahead of the gun. Actually Gar crossed the line 9.56 seconds before the official start. "Miss England II" following his lead was over 7.26 seconds before the cannon fired. Both Gar and Kaye automatically were disqualified. But—unfortunately from the standpoint of good press—Don's sleek white hydro caught Wood's wash in the first turn, flipped and tossed the thirty-eight-year-old Dubliner and his mechanics into the Detroit River, while "Miss England II" sank to the bottom.

A cold analysis of the incident leaves Wood blameless. Granted he used foxy strategy but in present day pit stooging lingo, Don was strictly a schnook to fall for such a corny gag.

Wood's "Miss America X" with its four 60° V 12 engines supercharged by Roots type blowers designed by Louis Schwitzer, presented the most awe-inspiring piece of speedboat racing equipment ever seen and probably ever likely to be seen. Wood worked without the advantage of present day three-point design. To attain speed Gar used only one formula—add more and more horsepower and more speed should result—and it did.

The closest race Gar ever ran was one the spectators couldn't appreciate for it was a race against time. And it wasn't done with his fabulous 48 cylindered "Miss America X" but in his "Miss America IX." Intent on breaking "Miss England II's" record in 1932 Wood made seven complete mile runs with and against the tide on the Indian River. On one two-way run, he hit 110.785 as an average, faster by a fraction of a mile per hour than Don's record but not an official new mark. The rules require a half a mile per hour to be added or the old record stands. So on that "new record that wasn't a record", had Wood been running side by side with Don, at the end of the mile Gar would have nosed out Don by 5.2′ in what would have been unlimited speedboating's closest finish.

Later Wood averaged 111.712 m.p.h. to regain the crown but for our money speedboating's thriller of thrillers and Wood's closest race was that record-that-wasn't-a-record that the fans missed.

LET'S GET TO THE BOTTOM OF IT!

(*Continued from Page* 7)

This usually extends across the boat from chine to chine, providing two riding surfaces—one at the transom and one amidships, both surfaces centered around the keel.

Years ago some bright naval architect had the idea that if three riding surfaces were provided, two near the chines and

one near the keel, no surface would be planing in water disturbed by a planing surface directly ahead of it. Further, since any one who has squatted on a milking stool knows that if three points are required to support a bottom without rocking, stability would be gained.

The first actual plans which I personally had seen, however, were made by George Crouch in the Twenties. Everything worked out as predicted, speeds were raised and stability was increased to a point. Then someone noted that when the two planing surfaces were forward, air could be trapped under the hull, lifting it from the water and decreasing the drag still more. Consequently the contour of the bow was modified to increase the volume of trapped air and up went speeds again.

Further development, in inboard three-point hydroplanes, came when some of the California's hot-rod enthusiasts, lung weary from the desert dusts, put their souped Fords in homemade hydroplanes and sought ways of outdoing the speeds of their Eastern contemporaries who seemed content with Ventnor three-point hulls and Lycoming engines. "Okay," they said "we got the front airborne, suppose we could get the tail end up there, too" and, with the help of Hi Johnson, the propeller wizard, they did just that by balancing their craft so that the weight normally supported by the afterplane was now supported by the propeller. The only contact with the water was made by the starboard forward riding surface—which occasionally dipped in to counteract the prop torque, and by the lower half of the prop.

Did speeds go up? A 265-cubic inch Merc has bettered 120 mph—a speed formerly attained in a single-step hydroplane by powering it with four aircraft Packards—10,160 cubic inches, no less. The stability of these prop riders has proven so good that only in the unlimited class, where 100-mph speeds are commonplace, have other types of hulls given them any competition.

Outboad hydroplanes present an entirely different picture, as no one has yet, to my knowledge, perfected a prop rider. If you manage to do it, I'd appreciate being let in on the secret. Single-step outboard hydroplanes are usually balanced up so that the forward plane rides free in smooth water. Although the three point's more efficient way of doing this may give it a couple miles per hour top speed advantage, it is at considerable sacrifice of stability.

Your choice of three-point or conventional should depend largely on the water conditions to be expected at the races in which you plan to participate. Here in the East, the three-point owner may find himself sitting out two or three races a season, while the fellow in the conventional is out dodging combers and wishing he'd had a good excuse for staying on shore. Here, three-point hulls are common in Midget and A classes, but outnumbered by conventionals in B, C, and F. Farther South, where many regattas are held on small inland lakes, conventional hydros are a rarity.

2. SIZE

In most all sanctioned classes, except outboard hydroplanes, minimum dimensions are specified by the governing body. Usual dimensions for conventional outboard hydroplanes are similar to these.

Class	*Over-all Length*	*Max. Beam*
FX	11′ 0″	58″
M	8′ 0″	43″
A	9′ 0″	46″
B	9′ 10″	49″
CD	10′ 3″	53″

These represent a good compromise, but let us consider the factors which affect the fellow who climbs into a smaller—or larger—boat. Speed in smooth water—for the same all up weight—should show little change with boat size, all other factors being unchanged. Any racing boat will tend to lift out to the minimum wetted surface which will support it. Once the stuff gets rough, the larger boat will present more surface to get wetted—but the smaller boat will give a more rugged ride, believe me, and may have to be slowed down when the driver of the larger hull has still got his foot in it.

The real disadvantage of the small boat comes in turning in choppy water. Here pee wee finds himself swimming while satchel butt skims around with ease. This is largely a matter of beam—the more beam, the more overturning momentum is needed to produce an upset. But before you run out and build yourself a square boat remember that any hull which banks in a turn is at the same time pulling its prop out of the briny—and the wider the faster.

3. SMOOTHNESS

Bottom smoothness is a subject which most of us have definite feelings about but which few of us discuss except on very special occasions. The reason for this reticence is probably due to a shortage of fundamental information. We can all assume that the bottom must be sanded real smooth, but what then? There was a day when the fellow who didn't rub graphite on the bottom of his racing rig was not considered a serious competitor—now the one who does is referred to as a damn finger print expert.

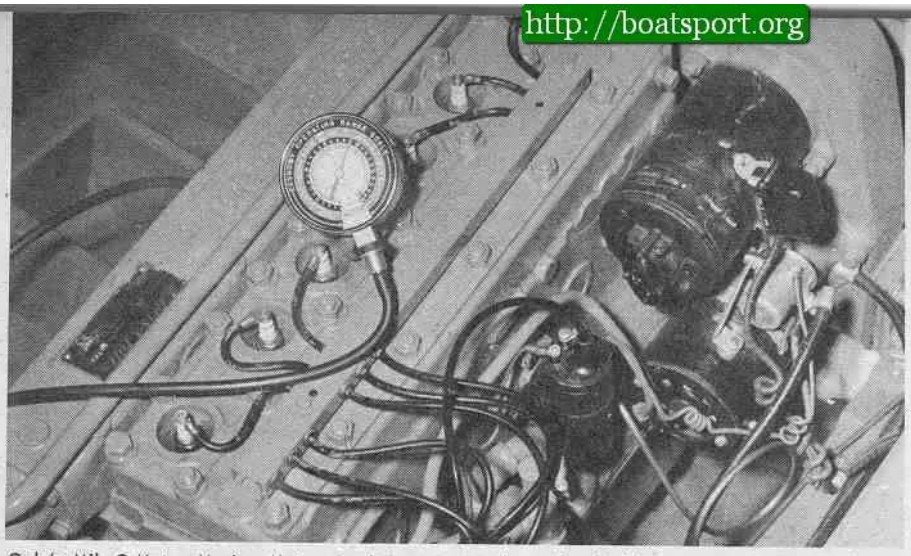
The next fad required the use of grease—the more rancid the better. Keeping up with contemporary Joneses requires the use of wax—some well-known brand or what-have-you and how's the water humidity today? A similar state of confusion exists in the selection of a finishing coat for the planing surfaces. Some state that varnish is too soft—hard enamel is much faster. But most rigs are varnished—six or seven coats. A week or so towing planks in a test tank could clear up both questions.

Anybody got a model basin they're not using?

If you have the same bottom finish as the other fellow, at least he hasn't got any advantage over you. But, as Casey Stengel says, "You're not sliding one over on him either."

4. SHIMMY

Maybe undulations is a more descriptive word. To get to the point—a boat bottom is not supposed to be wavy. Frequently the afterpart of the planing surface is intended to be perfectly flat or, in a V bottom, made up of straight-line elements. In an outboard hull the weight of the engine often distorts the bottom shape, causing a concavity or hook just forward of the transom. There is some evidence that such a cancavity may give more lift than a straight section, and this shape is used on the forward surfaces of prop-riding hydros. Experience shows that it is not suitable in outboard boats, and may contribute to propeller caitation. In severe cases correction may have to be made by structural changes within the hull, but the final alignment is usually made by chalking the bottom of a level, and rubbing it over the planing surface. Hold it parallel to the keel, since transverse irregularities are not so serious as longitudinal ones. High spots will show chalk, and may be taken down with plane, scraper or sandpaper. Repeat until all hills and valleys have been graded to billiard-table level, then pause for refreshment. Your rest is well deserved, for there are few things in life more satisfying than a good bottom.



Gale's Mile-O-Meter Marine Motor Monitor can be used right in the engine compartment for variety of valuable motor tune-up checks. Pictured here is a six-cylinder Chris-Craft engine.

MILE-O-METER HELPFUL FOR MARINE TUNE-UP

GALE HALL ENGINEERING of Boston, Mass., which created the Mile-O-Meter to indicate relative miles per gallon of gas consumed at all speeds in an automobile and to make running checks on car condition, has designed a new gauge called the Marine Motor Monitor. Although the Monitor is primarily designed as an aid to boat owners for economy of operation, it can also be of value to the inboarder interested solely in high speed operation.

A simple-to-attach single fitting connected to the intake manifold of marine engines is all that is necessary.

With the Mile-O-Meter Marine Motor Monitor placed in the engine compartment as illustrated, or mounted conveniently on the dashboard, an induction system tune-up and a host of tests are possible with this vacuum gauge.

To clearly understand the gauge's action, you must know the factors affecting manifold vacuum. Vacuum is produced when the piston is on the intake stroke (that is, when the piston is moving downward with the intake valves open and the exhaust valves closed). Each cylinder during the intake stroke operates as a vacuum pump. The gauge reading is the result of the total suction of all cylinders during intake strokes. When the engine is running and is suddenly accelerated, the gauge needle drops to zero and gradually moves to a higher reading. The reason for the sudden drop and the slow increase in needle reading is the greater carburetor opening permitting the induction of a larger fuel charge and consequently lower vacuum. The reverse is true when an engine is running at high speed. In sudden deceleration the higher needle response results from a closed, or partially closed, throttle valve opening. In either case the needle returns to a "normal" setting as the engine again reaches its optimum load-speed stage.

With the Gale Hall Monitor it is possible to determine whether or not the spark plugs are operating properly under every load and at every speed. An engine can be timed and its ignition, compression and carburetion condition can be checked using this meter as a guide. Such troubles as valve springs, worn valve guides and worn piston rings can be spotted almost immediately by use of the Marine Motor Monitor. In competition or in testing, if timing should slip or points burn, the meter will indicate this fault to the operator.

The Meter can also be put to valuable use in checking various fuel formulas at varying atmospheric conditions. Leaks in fuel lines due to improper installations or loose connections will be indicated by a less-than-normal vacuum pressure reading.

SPEEDBOAT EQUIPMENT LEADER

I. E. "IRV" DEBBOLD, speedboat racing champion, has turned his vast knowledge of racing into the manufacturing of speedboat equipment. It must be noted that an overwhelming percentage of all current record holding speedboats carry Debbold marine hardware.

As former professional world record holder and winner of more than 300 competitive events, Debbold's twenty-year background in speedboat construction and accessories is assurance of sound advice and superior racing hardware.

Debbold established his plant for the manufacture of marine hardware in 1940 and in 1945 moved to his new factory at 10366 Long Beach Blvd., Lynwood, California In the ensuing twelve years, Debbold has grown to the point where he is a most important supplier of a complete line of fittings and racing equipment for full race or pleasure hydros and runabouts.

THE BOAT BUILDER'S FRIEND

By PAUL VANDERVOORT II

ANYBODY who can read can build a speedboat! That's the opinion of E. R. "Ed" Lindberg, youthful president of Champion Boats, of Long Beach, California.

In four years, Champion Boats has mushroomed from a part-time occupation conducted in a small apartment to a big-business enterprise that turns out nine utility hulls a week and occupies 12,000 square feet of space, with another 8,000 to be added soon.

Ed knows the problems of the amateur boat sport enthusiast because he encountered them, himself, when he attempted his first racing hull design. That was in 1938 and he spent hours at the library trying to dig out information on the subject.

"Most of it was so technical I couldn't understand it," he smiled. "So when I started making my own designs as a business, I deliberately simplified the plans to make them understandable by anyone."

The secret of designing a racing boat, he says, is to get the hull up and out of the water, reduce friction on the submerged surfaces and develop maximum horse power per pound.

"I start every design with the engine," Lindberg said. "Then I work back to the propeller and around the hull." He has a general idea of the hull's profile to start with but this is altered to conform with the demands made by the engine, which is the key to the whole plan.

"Designing boats is a trial and error thing," Ed remarked. "In this game, it's the experience that counts. You learn from every boat and apply what you learn to making the next one better."

Lindberg has plenty of experience, as well as a marine background. His grandfather was a shipwright, his father a navy man, and Ed, himself, was practically raised on the docks at Long Beach.

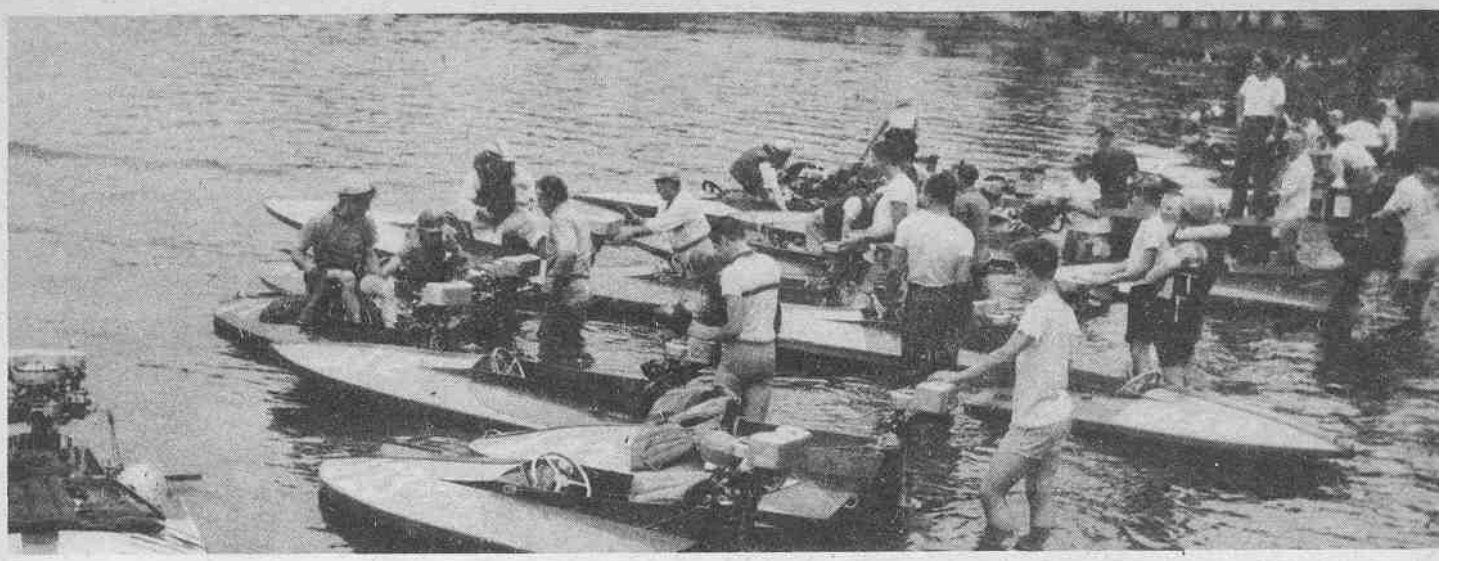
Oddly, he has never raced in regular competition, himself. His interest has always been in the designing end. He worked with the Chrysler Engineering Corp., and with Allis-Chalmers.

He was, in fact, still with the latter company when he and his wife, Lee, started the business of selling plans by mail.

As far as interest in boating is concerned, Lindberg says it's just now starting to boom. He says the tremendous growth of the sport in the past few years is only the beginning. "I predict that within the next ten years speedboat racing will be a billion dollar business," he said.

BUILD IT FROM A KIT

The next issue of BOAT SPORT will feature an article by Bill Effinger, telling you how to build your boat in the shortest time, at the least cost and with guaranteeed performance.



Outboarders are a hardy lot as evidenced here by this pit scene at Mays Landing, N. J. When no pits are available stooges constantly trek the needed tools and fuels to and from the beach.

PIT STOOGES

UNPAID REGATTA PACK MULES CAN MAKE OR BREAK DRIVERS WHEN RACING CHIPS ARE DOWN . . .

THE easiest way to gain advance knowledge on how to get into outboard hydroplane racing is first to pick up some experience as a pit stooge. The pit stooge is simply the guy who lugs boats, holds engines, keeps his fingers crossed while his driver is out on the course, gets cussed when the engine won't start, gets cussed again when the engine starts and his driver doesn't win, and then carries boats and engines at the end of the day.

Actually these few duties don't begin to cover a pit stooge's job. Every driver needs a stooge; most of them wear out three or four during the course of any given racing season. But still, although it's hard, dirty work, it's a good way to get a first hand insight into the sport and to learn a lot about the game at someone else's expense. Not that you're paid, but at least you're not paying for parts and fuel, and usually you can hope for a few post-race beers, a lunch and an occasional good dinner.

Even with the best pre-race planning, a perfectly set up engine, a boat in line, and all of the hours of work that these have entailed, smart pit stooging can win races and bum pit stooging can lose them.

Here's a typical race routine: most drivers haul their boats, engines and necessary spares to and from races on a trailer. Some few prefer car top hauling, but in either event the pit stooge's work usually starts at the driver's home where he helps pack up gear. Believe it or not, I know of one instance when a top flight driver trailered his boat and engine several hundred miles to a regatta with more than an even chance of taking down one of the first money positions, only to find on his arrival that he'd forgotten to pack the drive shaft!

One thing to learn if you plan to go into the sport is that races are never run without complete equipment on hand at the race site, so a full and complete check-off list, posted in the back of your trailer or pasted inside the top of your tool kit (but don't forget the tool kit—that's been done, too) saves a lot of bitterly muttered "where the hell's the plug wrench" or "why isn't the spare mag plate in the trailer?"

Once at the race site the first job is to unload the boat. If your driver is particular, and if he is smart he'll have a box of detergent powder, and non-rubber sponge (alcohol fuels turn rubber sponges into gummy messes in a few minutes). These should head your list. A pair of easy to pack, folding sawhorses is another desirable item. Spare fuel cans serve in a pinch. At any rate, before you put the boat in the water, be sure to clean off the abrasive coating of road film that adheres to the varnished planing surface.

The next job is to unload the engine from the trailer box. Most drivers remove and carry separately their entire lower unit and driveshaft for more convenient packing. The lower unit gear case housing should be checked to be sure the lubricant packs approximately three-quarters of the gear case housing area. Wide variations of thought concern what is the proper lubricant. Lubriplate or Dixons are two standard lubricants, both of which are considered top rate. Some drivers use heavy engine oil and recently Shell has produced a special lower unit lubricant that seems quite good.

Actually the type of lubricant is going to depend somewhat on the characteristics of your lower unit. About 50% of the racing units have the baffling characteristic of always winding up a day's racing with nothing but water left in the gear case. If yours proves to be one of these, be doubly sure that your gear case housing is kept properly flushed (particularly after salt water racing) so that water won't have an opportunity to exert a corrosive effect on the unit bearings. Since even the best units pick up some water and lose some lubricant during an afternoon's racing, it's recommended that the unit always be flushed with some degreasing agent, such as Varsol, immediately after a race and topped off to about the three-quarter mark before the next setting up of the lower unit.

The next job on the pit stooge's agenda is to get the boat into the water and the engine properly mounted. If you're the driver's only stooge, it will be a 50-50 job. Once in the water the driver usually hooks up the bowdoin cable remote control for the throttle and checks the steering ropes. Tying down the engine is usually the pit stooge's job. A section of fresh cotton clothes line about six feet in length is ideal for the job.

Fueling is another chore for the pit stooge. The engine should never be fueled without first violently shaking the racing fuel to be sure of proper mixing of the lubricant. Further, the fuel should be strained to prevent water or any foreign matter from entering the fuel tank. The importance of keeping the funnel clean is obvious.

Finally, before testing, plugs should

(*See Over*)

PIT STOOGES

(*Continued from preceding page*)

be checked to see that they are of the proper and desired heat range.

If the engine is known to be a temperamental and balky starter suggest that your driver start roping it over right at the five minute gun. Better to waste a little extra fuel rather than be left still trying to start at the dock when the heat is under way.

After each heat, too, quickly check over the power head bolts which are most likely to have been loosened by vibration, i.e. those securing the steering bar, the fly wheel locking nut and the studs fastening the powerhead to the drift shaft housing. Don't ever be tempted to put a wrench on the head studs. That's the driver's worry and if he's savvy, he won't tighten down on warm heads.

Spare equipment that you carry should be limited to parts which are readily replaceable in the pits and not those parts requiring shop facilities.

Pit stooges are usually kept so busy the only racing they see are heats in which their own drivers are involved. Don't think that in between heats you can just tie up the boat and walk away up on the beach somewhere and grab a quick Coke or a beer, because it just ain't done—or at least it shouldn't be.

An "F" driver had trailered his 4-60 job some 200 miles to one particular event and picked up an inexperienced pit hand at the regatta location. After he and the tyro pit man had rigged up the boat and completed testing, the driver was called off to attend the customary drivers' meeting. Maybe the helper felt lonely, but at any rate, he noticed a 10-foot section of line secured to a ring bolt on the float and tied the line to one of the transom carrying handles at water level off to one side at the stern.

The stooge left the dock and spent 10 or 15 minutes chatting with a friend until he saw the driver returning. For the next hour, the driver gave the boat a very methodical checking over, while the pit stooge sat by with his feet dangling in the water, holding onto the steering bar and watching the smaller class boats in competition. Finally the five minute gun sounded for the first heat of "F." The driver crawled into the cockpit, locked the throttle in full open position, cupped his hand over the carburetor and rocked the flywheel a few times to choke the cold engine, then roped her over. A 4-60 takes off from the pits like a bucking bronc with burrs under its cinch belt. This 4-60 was no exception. It gave out with the high winding four-cylinder scream of power, pointed its bow upward at a 45° angle, sprayed out a five foot long rooster tail as it cavitated momentarily and then took off. At least it took off to the end of the ten foot tether and then with a nearly irresistible force of 60 cubic inches revving like crazy against a taut rope, the hydro reared up, did a beautiful barrel roll and flipped.

Then when our "F" driver spotted the line attached to the transom, he let forth with many loud remarks—unfortunately, all unprintable. But they boiled down to: Never tie up your boat in the pits if you want to pit stooge more than once.

SOUP-UP SUPERSTITIONS

(*Continued from Page 27*)

some individualized effort. Rules permit the substitution of, and use of, any standard carburetor which gives you literally thousands of combined models and manufacturers' types to play with. Here's one spot where you might pick up some added mph.

Many service engine readers have written in with questions concerning changes of crankcase valves in service engines using reed-type valves. As the name implies, reed valves are constructed in much the manner of reeds in mouth organs or accordions. The valves are made of flexible metal. When pistons are advancing toward the cylinder head on that part of the stroke which causes compression in the cylinder and vacuum in the crankcase the reed valves are drawn from their seats to permit entry of fuel-air mixture. When pistons are on the down stroke and the case is under compression the reed valves are forced back into the valve seat and effectively close or seal the case. Those service engines equipped with reed valves offer varying timing that closes and opens valves as the movement of the pistons demand. The inefficiency of the system occurs through the spring action which tends to shorten the valve action. In general little is to be gained by increasing the size of the reeds and the disadvantage of shorter valve opening may result from replacement of the stock valves with substitutes of greater spring tension. Experience, too, has shown that increasing the valve channel has little plus effect.

A very common mistake is the pride-in-setting-up-pistons-too-close school of mechanics. These are the boys who stick their engines a half dozen times before they can get them to run freely, if they are lucky enough not to have ruined both bores and pistons or flipped during the sticking process. To digress a bit: when testing a green block I have found it advisable not to tie down the engine so in the event of a stick up the engine is free to cock up into the boat and let the outfit ski. When tied down there is always the tendency of a stuck engine to cock when it is suddenly being dragged to a stop and in cocking the rider is dumped or the entire oufit flips. Tieing in the engine is advisable in competition as in turns in rough water, jumping wakes and such antics the engine would doubtless cock out of water if not tied and the driver would be out of competition.

Back to the pistons. A knowledge of hot areas of the piston and cylinder in operation quickly illustrates the need for a tapered fit if compression and freedom without too much friction is to be had. Pistons dissipate heat by conduction to the cylinder walls largely through the rings and through that section of the piston at the wrist pin boss which because of its greater bulk dissipates more heat than other sections of the piston.

Burned pistons occur when the piston is unable to release its heat quickly enough to maintain it below the melting point. Sticks occur when the piston expands to the extent that friction against the cylinder wall becomes too great for the developed hp to overcome.

While the wrist pin boss with its beefed up metal area provides a media to draw heat away from the piston head and offer quicker cooling to the head, by so doing it also becomes a hot spot in the piston. Most piston sticks occur on the wrist pin sides of the piston in that area from the top of the uppermost ring land (slot in which ring fits is ring groove, ridges between grooves are lands) to about ¼" below the wrist pin hole. It is a good idea to rub down this section with fine emery and with an index tool or other sharp tool make a myriad of tiny holes over the entire area so that the piston at this point will be slightly more free and will carry more lubricant. Remember that a smooth finish to the piston is not desirable. A mildly roughed surface will carry more oil and offer a better compression seal while minimizing chances of sticking.

Vaporized fuel not under compression that fills the interior of the piston during the compression stroke is close to the freezing point. Hot residual gasses not completely scavenged during the exhaust stroke heat the cylinder and the piston on the exhaust port side of the block during intake. However, as aluminum has a high thermal conductivity it dissipates this heat quickly. Aluminum also has a high co-efficient of expansion and so the pistons grow more at the top where exposed to the most heat than at the skirt where less heat is radiated. Much of the heat from the top of the piston has already dissipated before it reaches the skirt.

Remember that a piston fit that is tighter than necessary creates undue friction. Let's shake one final idea. The test of compression of an engine is in its running warm condition when pistons and rings as well as blocks are heated. It is not necessarily true that an engine that can hardly be pulled over in cold condition will have good running compression. Keep in mind that the piston rings, not the pistons, act to seal compression.

A SPECTATOR SOUNDS OFF!

(*Continued from Page* 17)

please the paying customer, to put the racing acting where he can see it, to give adequate announcements not only to explain the sport in general, but to tell what is immediately going on, and to put some personalities in the game by giving a little background of the drivers. But there's no reason why the sponsors of the booster regattas can't consider the show from the spectator's-eye view, also, and produce racing that can be enjoyed.

At this point maybe I should admit how I solved the problem of getting a good view of at least one outboard race. I bought a Class A hydro and entered the National Sweepstakes Regatta at Red Bank, N. J. My carburetor obligingly (?) fell off in the first lap and I had a wonderful grandstand seat right inside the buoys of the first turn for the remainder of the heat. However, I could still see only one turn. Naturally it wouldn't be practical to recommend that all would-be spectators buy a boat. Let's keep the spectators on the banks where they belong; but why not keep them happy on the bank?

Many racing drivers complain that the spectators make a nuisance of themselves, that they wander around in the way making it extremely difficult and hazardous to carry heavy, slippery wet hulls. Spectators also can be a cause for gripes when they crowd into the pits, leaving insufficient elbow room for the working folk, and—most heinous sin of all—kicking tools or sparkplugs overboard. But of course the answer to all this is that if the spectators had a reasonably interesting place to be and a spot to call their own, then they could be more readily controlled and kept out from underfoot in the pits.

After all, is it too much for the spectator to ask for a place to park, a place to sit, boats and drivers he can identify, a race he can see and results he can hear?

A 4 cyl. Evinrude, 4-60 Class F outboard, gets away from the pits. Driver is Emil Mayer.

THIS MONTH'S COVER

(*Continued from page* 3)

gradually changing over his so-so irons to highly refined racing motors. His pretty wife Elise, who admits to occasional impatience with her role of racing widow, reports that Gil has worked as much as an entire week of six-hour evening sessions checking out the timing of a single mag plate.

By mid-1948, with sixty heats of ¼-mile short-course competition as a nightmarish schooling in getting around corners and moving up through the pack, Gil branched out and made himself known as a front-runner from Canada to Florida at every major regatta.

A year ago only hard luck prevented him from setting a new record for the mile. On one run, into the wind, Gil broke the existing world's mark of 50.281 m.p.h. with more than a mile an hour to spare. Then midway through the down wind run, with a new title a near certainty, he hit a partially submerged orange crate and sheered off his lower unit.

After winning the National Title at Knoxville, Tenn., last September, some fans wondered if Gil had become strictly a long-course driver wholly dependent on speed. In October, at a short-course near New Brunswick, N. J., where the distance around the buoys measured just a shade over a fifth mile, Gil was handicapped with an eighth place starting position. Plenty of good jockeys were up in front. In four laps the high-bouncing, wild-riding, 140-pound, 36-year-old former Bronx Express moved through the field as though it was static. By the end of the twelve-lap main event Gil was boss of both the country's long and short-courses.

It's mighty nice having this great racer on our cover. Happy speeding, Gil!

(*Flexichrome of cover by Harold Kelly*)

Ronald Capp behind the wheel of the speedy C-30 at the Chain of Lakes racing event at Fox Lake, Ill., in 1950. The C-30 is a Switzer-Craft stock utility, Class C boat powered by a 22 h. Johnson engine. This same boat last year, but with Joe Michelini driving, won Class C Nat'l A.P.B.A. record of 35.49 in 5 mi. closed—39.15, 1 mi. straightaway.

RECORD BREAKERS—WEST

(*Continued from page* 13)

119 m.p.h. This mark was broken last November by the amazing record of 120.-085 m.p.h. of Paul Sawyer's 264 cubic inch hydro, Alter Ego.

Formed during the years 1905 to 1907, when the mighty Colorado River overflowed its banks, freakish Salton lies in the heart of the wastelands. It is flanked on the west by the high-spired San Ysidro and Santa Rosa mountains, and to the northeast by the towering, barren Orocopia, Chocalate and Chuckawalla mountains.

The nearest town is Mecca, ten miles distant, with a population of around 1000. Much larger Indio is 34 miles away. A driver who makes the big fall meet, November 8th to 11th this year, may camp out on the shores of Desert Beach or use one of the many hotels along Highway 111. At one time, when motels were fewer, Salton could provide an inhospitably rough time all around. Now, not so. The Sea is the same, though . . . superb when it's calm, but a cinch to dish out some miserable going when the winds from the Banning Pass sweep down from the north, or west over the San Ysidros.

OUTDOORS WITH THE OUTBOARDS

(*Continued from page* 14)

that you aren't absolutely sure is safe. Of course, there's poison ivy to look out for, too—but all we can do is pass on the Skipper's advice: "The best cure is don't ever go near the darn stuff in the first place."

* * *

Of course, if you've got an outboard cruiser you'll just take off in it and have yourself a wonderful holiday away from all the crowds and noise. Some of you folks may think we're talking way above your heads when we mention the word "cruiser." Maybe you don't know that you can own one yourself for as little as $700—not including motor. There are all types of outboard cruisers from 15' to 21' in length and from 450 pounds to 1300 pounds in weight. A 5 hp. motor will run the lightest boats around 9 mph. You can go on up from there in speed and price—but $1500 is about top for the boat alone. Cruisers can be hauled in trailers the same way as any outboard boat.

The field for long distance cruising is unlimited. For those who live along the Atlantic coast, the Inland Waterway Guide will open up all sorts of safe and scenic possibilities for a vacation trip. A dollar bill sent to 25 West Broward Boulevard, Fort Lauderdale, Fla., will bring you either the Northern or the Southern edition of this book. We'll be glad to hear about any interesting cruises made by our readers this summer.

SHADOW-BOXING THE COMPASS

The Skipper say's he's sorry all the new outboards run so nice and quiet. Back in the old days a man couldn't possibly hear what the Mrs. was hollering at him—but he still refuses to put in remote-control steering for the simple reason that he doesn't want any "stern-seat driver" sitting behind him.

Look in the State laws regarding refunding of gasoline taxes on power boat fuel . . . some give it back, some don't.

Having trouble idling your motor down to trolling speed? If you can turn it all the way around, run your boat in reverse and let the stern act as a brake.

Did you know whales are hunted in outboards? That ought to reassure the optimistic fisherman who was worried about how he was going to get that "great big one" towed back to camp.

Think your boat isn't fast enough for aquaplaning? If it'll hit 12 mph. you can tow one and have plenty of fun; of course, the more speed the more thrills—and the more spills, too, until you learn. You need a bigger board for a slower boat—6 by 2' anyway and maybe bigger in some cases. But if you want to learn or want the children to have fun, why not try it? You can build your own or buy it for not too much.

At one time, anyway, some European outboards ran on parafine. The Skipper said he didn't care if they ran on bees wax—they still couldn't hold a candle to our American motors.

Why aren't there more "Boatels"—or maybe they ought to be called "Outboarding Houses"—so folks could throw in a suitcase and shove off for a days run and then be able to spend the night in a cabin just like motorists do in an auto court? Seems to us a string of places like that along the main waterways could do a land-and-water-office business during the season.

SAFETY DEPARTMENT

Whenever you're willing to take a chance, just remember that chance is more willing to take you. Have life preservers for everybody on board, no matter how well they can swim or how shallow the water is . . . the cushion kind are best because they serve two purposes . . . but be sure they have the Coast Guard stamp of approval on them.

The Skipper's note to landlubbers who can't tell port from starboard: "All you gotta do is think of a *port* you wouldn't want to be in no matter what kind of a storm was blowing up. As far as I'm concerned, that'd be Russia and so the fact that it's *red* and way over to the *left* is easy. Then go over to the other side and think of *starboard*—that's the stars and stripes and the *right* way of doing things, and so of course it gets the *green* light everytime. Easy, ain't it? The only trouble is some folks seem to be color-blind now and then."

BOAT HINTS

Having cavitation problems? You might check on fin alignment. Even slightly misaligned or bent fins can cause lots of headaches. You might also check on the fin size. One popular school of thought is the "let's use a bigger fin" gang who finally wind up with fins like centerboards. Sure, a large fin area will permit tighter, if somewhat slower, turning, but oversize fins can also carry disturbed water back to the propellor and cause undue slippage.

WHAT KIND OF FUELS ARE THE FAST BOYS USING?

(*Continued from Page* 23)

Too, contest engines operating at maximum power output demand good lubrication. Degummed treated castor oil will give the greatest protection and should be present in properly blended fuels.

In answer to the question "What kind of fuels are the fast boys using"? I say they take advantage of the present availability of acclimatized fuels, specially prepared for low or high humidity and for compression ratios in the low, medium or high compression range. Remember, no single fuel combines these factors, but all types are available for drivers to use under different circumstances. For example a fuel designed for a 9-1 compression ratio and for heavy atmosphere at low elevation is not designed to operate properly in an engine of 12-1 or higher compression ration.

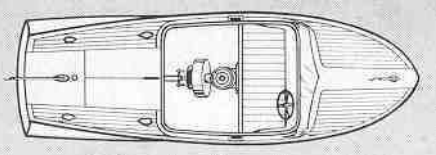
The fast boys match their fuels to their compression ratios and to the particular atmospheric conditions of the area in which they plan to operate — and for the prevailing conditions on that day.

With luck you can get away with a hit-or-miss home mixture—but it isn't a smart competition practice.

MAY BOAT SPORT

Because of the continuing demand for the May issue of Boat Sport we made arrangements to secure a few extra copies. First come, first served. Send 25c for your copy to Boat Sport, Dept. 552, Room 1903, 215 Fourth Ave., New York 3, N. Y.

Berkeley's



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POWERED BOAT KITS!

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Conventional "Glow-Plug" type Model Aircraft Engines are used for power. These engines cost under $7.00, operate without ignition, start easily, and turn in excess of 12,000 R.P.M. with a standard flywheel.

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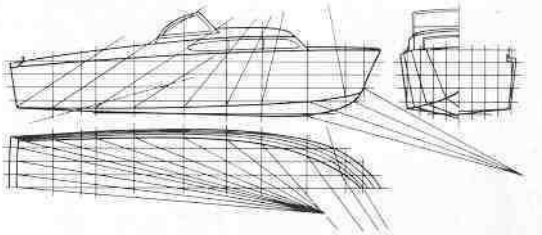
5/8" Scale—14" Long—4 1/2" Beam

$3.50

This exceptionally sea-worthy model of the "Express Cruiser" was designed by the Intersecting Conical Lofting method.* Mahogany veneer construction used throughout. All wood parts are accurately die-cut to shape and need only be assembled. Marine and Deck hardware is included.



***Designed according to latest principals of Intersecting Conical Lofting.**

Chris-Craft

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"RIVIERA RUNABOUT"

For .035 to .099 Model Aircraft Engines
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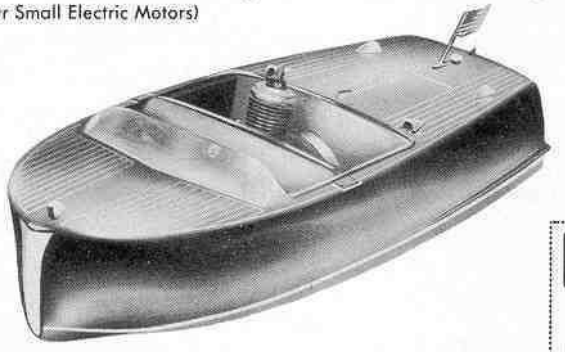
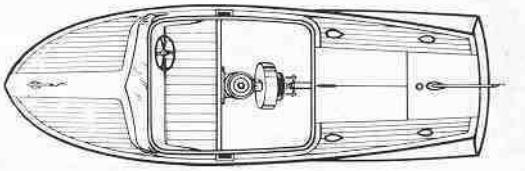
5/8" Scale—12" Long—4 1/2" Beam

$2.95





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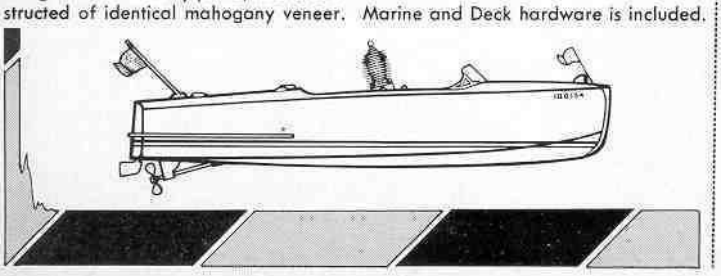

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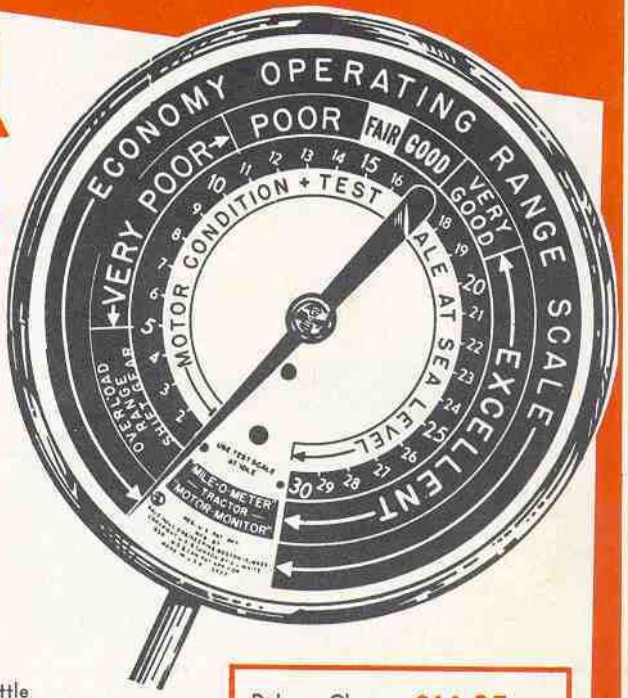

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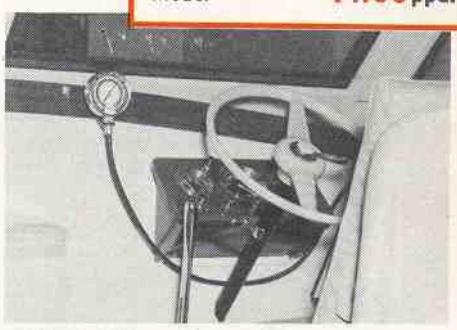
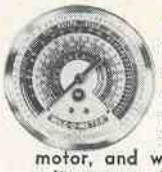


FOR CARS



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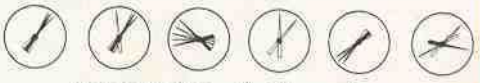

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