

HYDROPLANE

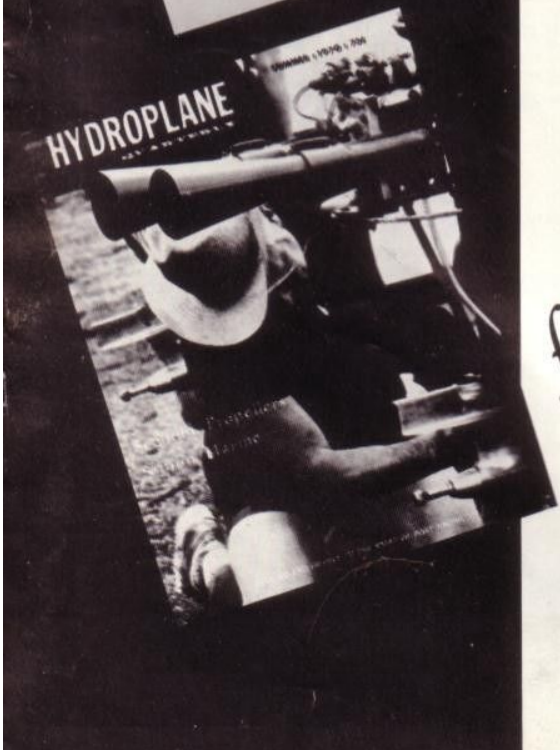
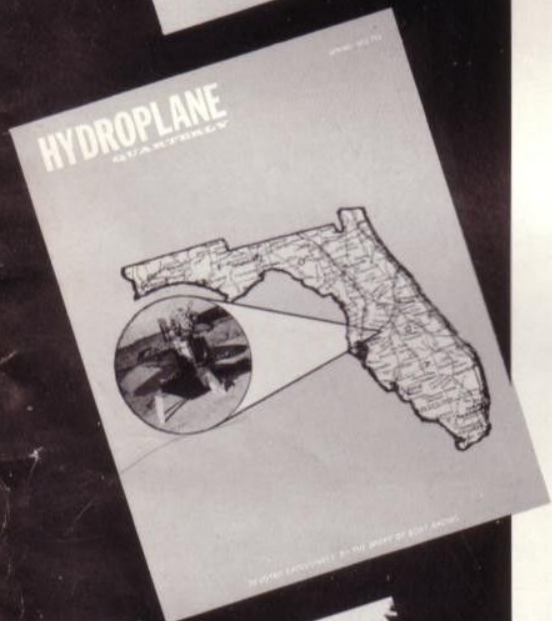
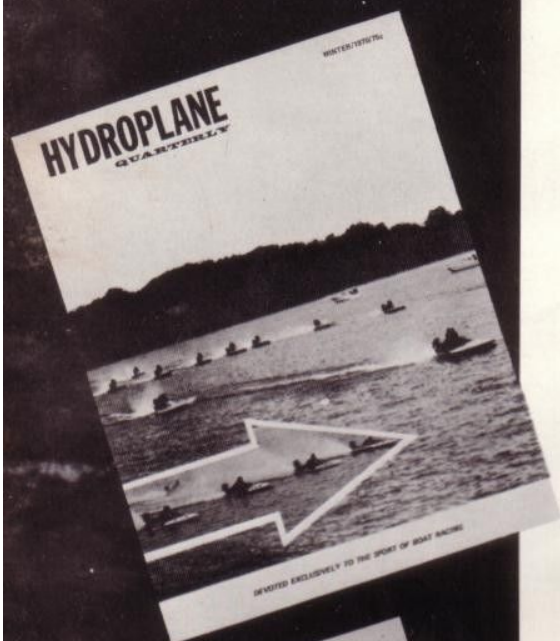
QUARTERLY

BILLY
HULGAN
~
HALL OF
FAME

NOA
WORLD
RACES

Ignition
Systems

DEVOTED EXCLUSIVELY TO THE SPORT OF BOAT RACING



Bill Seebold,
DeSilva Racing Boats,
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Dick O'Dea,
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Birmingham Metal Products,
And many more...

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QUARTERLY**

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* Setting up a B Stock

* O.B.R.A

*facts
and
opinions
by the
editor*



Really am overwhelmed! There has been quite an honor bestowed upon us. A short time ago Claude Fox, Executive Director of the National Outboard Association, presented me with a plaque for "Outstanding Promotion of the Sport of Outboard Racing for 1970" (see photo). I would like to express my appreciation to NOA for this award, and to all of you, the readers of HYDROPLANE QUARTERLY, for making this magazine possible. I publish the magazine simply because I think boat racing is the greatest sport in the world. It takes a lot of time and money; but it is all worth it. I cannot express my feeling on recognition of this type except to say "thank you".

This issue starts the second year for HYDROPLANE QUARTERLY. In the last year the magazine has grown from about 75 readers to several hundred with the circulation list growing every day. I can only say that the support is remarkable. We, the staff, hope that the contents of each issue is what you want to read. If it isn't, write us a letter and let us know, or if it is let us know that too.

WHAT IF THEY GAVE A BOAT RACE AND NOBODY CAME?

What if? Suppose there was a boat race and no drivers showed up? Or no spectators (this HAS happened)? Or no officials? Or nobody? First of all, if the regatta is properly promoted there will be spectators. Often when the spectator turnout is from low to nil there is a reason. And the reason is publicity and promotion of the race. And if you have to find fault it lies with the local racing club. The sponsor can't be expected to know the ins-and-outs of boat racing. The racing club has to work closely with the sponsor to insure success of the race. This means news releases, photographs, television film strips, and other material for the news media. Officials. I have never been to a race where the officials have not shown up. But there is a problem in finding a crew of competent officials. Most race officials are pleased to donate their time for the betterment of the sport. Others can't afford to. The solution is to pay the officials. One club I know of goes to such extremes that race officiating can be considered a part time job, with equivalent to nearly 50% of the purse going to the officials. On the other hand most clubs find that collecting a nominal entry fee from each driver is more than enough for reimbursement. But what about drivers? There isn't any guarantee that drivers will show up. I have been to races that have had pretty slim driver turnout. Maybe a solution would be to eliminate the practice of registration at the race site and make pre-registration mandatory. If this came about then the schedule could be determined in advance, and adjusted if necessary. And to make certain that the driver does compete an advance registration fee could be charged which would be refunded at the race site.

Tim Chance

Tim Chance
Editor and Publisher

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letters

To the Editor:

Perhaps the most controversial race in 1970 was the Am-Pro Nationals in Eufaula, Alabama. Having attended the race, I would like to comment on a few points from the viewpoint of an official. Since the referee is considered generally responsible for all race activities, let me say that I can't help taking the overbearing criticism of this race as a personal insult.

I have been around boat racing for four years and around boats all my life. I have acted as pit crew for two of those years and started acting as referee in the summer of 1969. I officiated at many races during the late 1969 and 1970 seasons. I admit that I am not nearly as experienced as some of the 'old heads' but by the same token I wasn't born yesterday.

As many drivers know, some of the finest and most experienced officials retired from the judges stand in mid-season, 1970. Funny they would retire in the middle of the summer. Could it be that they were at wits end from being cruelly abused and mistreated. If so, one might say at this point that the driver-official relationship is becoming a cold and impersonal thing. It's almost as if the driver is competing not only with the other drivers but with the officials as well.

The National Office can't be blamed with my being at Eufaula. It seems that no other officials were available or interested in undertaking this National event. Believe me, I now understand why! When appointed, I vowed to do my dead-level best and that's just what I did. Apparently my best wasn't good enough.

Many of the drivers will be relieved to know that they won't have to race again under that "inexperienced and unsure referee" who was trying his darndest to gain experience. He suddenly developed a mental "hang-up" about black and white striped shirts.

I wonder who will judge the 1971 National Championships? Maybe an experienced driver will volunteer? It would surprise me to see a driver muster up the guts it would take to attempt officiating at such a large race.

I plead with the drivers, please try to be more tolerant of the next official that you have reason to deal with. Before criticizing, please put yourself in his shoes and try to make a honest evaluation of the situation at hand. He is only human, and remember while you run a small percentage of the day's heats, he has to run every last one.

I will, however, offer this positive suggestion at the end of a letter of rather negative attitude. If the drivers feel that the sport of boat racing has grown to the point where professional-type officials are needed, at least at the National Championships, they should make proposals of their ideas to the National Office. Perhaps a group of judges could be trained and then contracted to handle the Big-Four annual events for a single, lump sum of money. I think the drivers must realize that only so much can be expected of the volunteer officials that are barely able to make ends meet with the present allotted expense money. If the drivers, as a whole care enough to see these changes made, they are going to have to speak up. Nobody else is going to do it for them.

Sam Kirby
Knoxville, Tennessee

The above letter is written in response to an editorial by John Van Epps in the last issue of *HYDROPLANE QUARTERLY*, and to some other general criticism of the Nationals at Eufaula. I can only say that the letter states perfectly the problems encountered by today's racing officials - Ed.

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HYDROPLANE

QUARTERLY

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BILLY HULGAN

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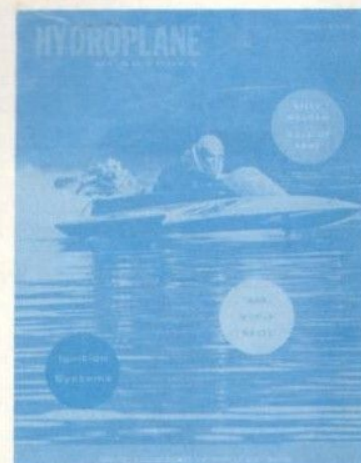
Introduction of a new racing club

KARL WILLIAMS

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the cover

For the second time our Hall of Famer is featured on the cover. This time it's Billy Hulgan from Northport, Alabama piloting his record setting Konig powered Marchetti.



ignition systems

BY JOHN VAN EPPS

If there is any one system or component of an outboard racing engine that causes more problems than anything else, I think everyone would agree that it is probably the ignition. I am sure that ignition would run a hard race for this dubious honor with carburation of many drivers and mechanics, but in light of the fact that ignition systems are probably less understood and more complex than fuel systems, they deserve first consideration.

Space does not permit a detailed and technical explanation of the nature of electricity and its relationship to our particular use of it in an ignition system, and this knowledge is of little benefit anyway when you are on the beach sweating the five minute gun with that blankety-blank-blank cylinder that refuses to light off. In view of this, we will try to deal with the practical aspects, such as basic theory, and the function of each component individually and its purpose in the system as a whole.

Very simply, an ignition system is nothing more than a source of low voltage electricity that is transformed into a very high voltage electricity capable of jumping an air gap at a specific time, and at very rapid intervals. The voltage required to fire a spark plug in a cylinder under pressure is in the neighborhood of 15,000 volts. Since it is not possible to carry around a 15,000 volt battery, the ignition system must convert low voltages to high voltages, and it must do it very rapidly and reliably.

Basically, there are two types of ignition systems found on almost any internal combustion engine. These are the battery ignition system, and the magneto system. The only real difference in the two is the source of the low voltage current. There is also the electronic or capacitor discharge system, but essentially, this is just a refinement of the battery type, and will be explained later on. We will also point out the advantages or disadvantages of each system as we go along.

In figure 1, is a schematic of a simple ignition system. It should be fairly easy for you to find and identify each wire and component in your system. The only clarification that should be pointed out on the

Ed. Note: John Van Epps has recently joined the staff of Hydroplane Quarterly as Technical Editor. He is well qualified for the position with a background in the marine field, including a period of employment with Hubbell Racing Motors. His racing accomplishments include a World Championship in Class B Hydro plus consistent top finishing in the Am-Pro ranks. He has retired as an active driver, but will remain involved in the sport by performing custom motor set-up work.

Technical Editor,
John Van Epps



drawing is that the grounded side of the coil is frequently done internally in the coil, and you will not find a wire for it. Additionally, in a magneto, there will not be a so called HOT wire to the coil primary side, as this voltage is induced into the coil in another way which will be explained later. To explain how a simple system works we will take a battery system, such as shown in figure 2, and follow the sequence of events.

As the points CLOSE, due to the action of the point cam, current flows from the battery thru the PRIMARY windings of the coil, thru the points, and back to the battery via ground. As this current is flowing thru the coil, a magnetic field, or flux, is building up within the coil, and across the SECONDARY windings. When the points are OPENED by the point cam, the current instantly stops flowing, and the strong magnetic flux that has been developed, collapses across the SECONDARY coil windings, creating a very high voltage that travels down the spark plug wire and jumps the plug gap in an attempt to complete the circuit. We did not mention the condenser in that little journey and we will explain its function later on as we deal with each component. All this happens so fast that it boggles the mind, and if you think of it happening 10,000 times per minute or more it becomes even more staggering.

With any battery ignition system, it is very important to ground the negative side of the battery, and attach the positive to the coil primary lead. A reversal of polarity takes place in the coil, and this will make the center electrode (tip) of the spark plug charged negative. As electricity travels from negative to positive, and the tip of the electrode is very hot and tends to give off electrons, a much intensified spark will result with a negative grounded system. It is known that this can be as much as a 40% increase over a positive grounded system.

The magneto ignition works just the same way except that it uses a generator to provide primary current instead of a battery. The generator is driven by the engine and the field is grounded. There are many ways

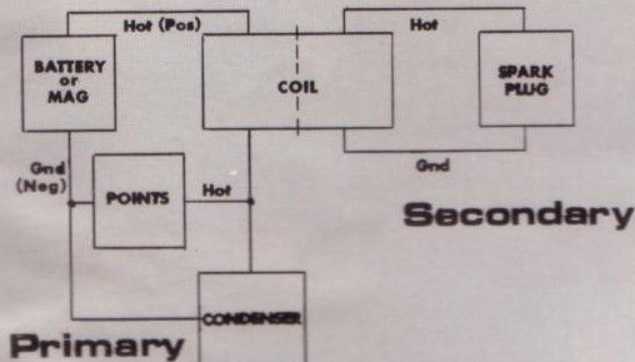


Figure 1. Simplified Block Diagram (Ignition)

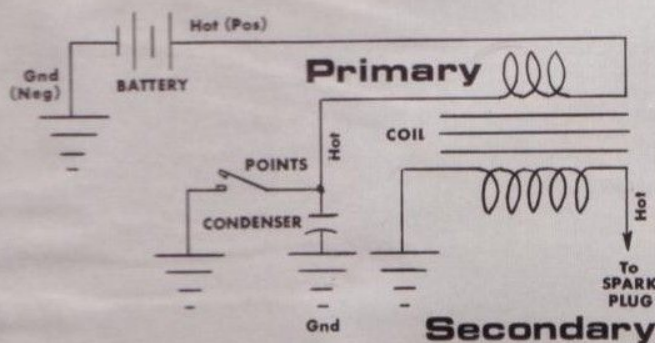


Figure 2. Battery Ignition Schematic

but all do the same job; that is provide current to the primary coil windings when the breaker points are closed.

At this point, let's look at each component and review its purpose and individual characteristics.

COIL - The coil is a transformer that utilizes magnetism to convert low voltage to high voltage. The primary windings are few in number and are of heavy wire to withstand the high amperage from the battery. The secondary windings are of very fine wire, and there are many more windings than in the primary. This is why **VOLTAGE** is amplified, although **AMPERAGE** is decreased. The very low amperage is the reason that a shock from a plug wire will not kill you, but as most of us know, it is very unpleasant to say the least. Coils are seldom troublesome as they are quite rugged and well sealed.

CONDENSER - The condenser is a storage unit, or reservoir, if you wish. When the strong magnetic field collapses across the secondary windings of the coil, some of it also collapses across the primary windings, and induces a high voltage in the primary side. The condenser catches this surge and prevents it from jumping or arcing across the points. It then shoots some of this current back to the coil toward the end of the cycle, and tends to intensify the secondary voltage. Condensers are troublesome, as they are subject to shock and vibration, and are subject to moisture. They will usually last for a long time, but if only partially sealed, moisture can enter and cause

pletely dead if they are shorted internally. They should be checked and replaced frequently to eliminate trouble.

POINTS - The points are nothing but a cam operated switch to make and break the circuit at the proper time. They should be properly aligned and kept clean. The spring tension should be maintained properly or the points can float or bounce at high rpm. Points should never be cleaned with anything but a point file, as paper or abrasive cloth can leave residue on the contact surface that can result in poor contact and arcing or burning, or no contact at all, and no spark.

It should go without saying that all connections must be clean and tight if you expect long and trouble free performance. One other thing that should be noted is that all connections should be made with regular electrical connectors; not by twisting the wires together.

With magnetos there are a couple of additional areas that need occasional attention. The rotating magnet should be set as close as possible to the fields for best performance. The smaller this air gap, the hotter the spark will be. Under no conditions should these touch however. The magnets should be strong and if necessary can be recharged in most cases. When a flywheel or magnet is removed from the engine for any period of time, it should be shorted with a piece of metal to keep its strength.

The type of magneto most of us are familiar with is the type found on the Champ Hot Rod, A and B stock Mercurys, and the type found on Mercury four-cylinder engines. These magnetos are completely self contained with all components in one package. There is another type of magneto system that is called the "low tension" system where the coils are mounted remote, and the small coils found under the flywheel are for generation of primary voltage only. This type gives the advantage of a smaller lighter flywheel.

The electronic ignition, or capacitor discharge system, has found favor with some drivers, particularly in the alky classes. This system comes in many forms, and is capable of developing in excess of 50,000 volts at almost any rpm. This makes for very good starting, and almost eliminates plug fouling. Some of these systems utilize small magnets or photoelectric devices to trigger the coil rather than mechanical points, hence there is no point wear or setting. The "guts" of most of these systems are usually sealed, and cannot be repaired, without specialized equipment as they are full of transistors, diodes, SCR's and other sophisticated electronic jazz. They are improving in reliability as they become more prevalent on all kinds of equipment, from automobiles and lawn tractors, to outboards.

The magneto has been around for many years and is very reliable. It has the inherent advantages of being completely self contained, and the faster you wind the engine, the more it puts out. However, as we said, it

Continued on Page 14

the World Championships of the NOA

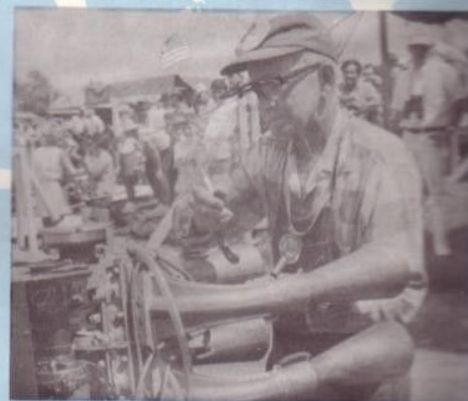
Billy Seebold, Billy Seebold, Billy Seebold, Billy Seebold, Billy Seebold, Billy Seebold, Billy Seebold, Billy Seebold, Billy Seebold, Billy Seebold, Billy Seebold, and Billy Seebold. There it is - in twenty-five words, a summary of the 1970 NOA World Championships. Billy Seebold completely dominated the various classes. Marshal Grant, who owns the equipment Billy drives, left the APBA Nationals in DePue, Illinois without a single Championship to their credit (see Hydroplane Quarterly Vol. 1 No. 4, for the APBA Championship story). But back home in Memphis, Marshal worked out all the problems and hauled the equipment down to Alexandria, Louisiana, with winning in mind. Billy drove to win. Six Championships. Six. Unbelievable.

Alexandria has been the site of several Championship races. The pit area is outstanding, the water generally is smooth, and the organization of the sponsor - the Alexandria/Pineville Optimist Club - is also outstanding. This year the calibre of racing was as high as in the past although the turnout of boats was down slightly from previous years.

Thirteen Championships were determined on Saturday and Sunday with straightaway trials presented Monday. The elimination heats were all run on Thursday and Friday with the top fourteen drivers in each class qualifying for the Championship finals.

Alexandria's Carl Rylee was, as in previous years, the referee, for this; the biggest alcohol burning race of the year. The race was run this year in September rather than in the usual October. So the weather was hot. Very hot. Several drivers experienced engine problems because of the extreme temperatures. But by race time most problems had been worked out and a series of fast races were presented.

Several boats tipped over but fortunately there were no serious accidents. One driver, Bill Fales from Northport, New York managed to flip twice inside of about an hour. First he parted company with his six-cylinder Quincy powered DeSilva Runabout and a short time later pulled the same trick with his brand new Marchetti Runabout. Following is a brief description of each new Champion:



INSPECTOR, R. ALLEN SMITH, CHECKS A QUINCY ENGINE.



RICH KRIER, AMES, IOWA, LOOKS OVER HIS KONIG.



BLANKESTEIN TAKES CARE OF JERRY SIMISON'S KONIG AFTER SIMISON FLIPPED HIS RUNABOUT.

Billy Seebold, driving for Marshal Grant, in "Ring of Fire" "Ring of Fire Jr.", "Miss Folsom", and "a Boat Named Sue" won six Championships. And these six Championships included nine first place finishes, three seconds, and three thirds. Billy won C-1 Hydro by being the only legal boat in the first heat. Then in the second heat Bob Murphy, Springfield, Illinois captured first with Stan Leavendusky from Kansas City, Kansas running in second spot. Billy finished third behind Leavendusky which netted him the Championship. Class D Hydro again found Billy running legal, along with Jim Schoch, from Quincy, Illinois, in the initial heat. In the second contest Hydroplane Quarterly Hall of Fame member for this issue, Billy Hulan took an early lead and held it throughout the race. However, Seebold finished second which placed him in the Championship circle again. B Runabout had Seebold winning both heats, so his perfect 800 point score gained yet another Championship in his long string of titles. In this B race the first turn of the very first heat was a typical nightmare with four boats turning over. John Dortch circled back to offer assistance, and this show of concern won him the sportsmanship award. At this point the heat was postponed, with Seebold out-in-front, and rerun later. In C Runabout Seebold finished with a perfect score of two first places. In the first heat Seebold and Jerry Simison, Fergus Falls, Minnesota, entered the second turn side-by-side with Simison holding the inside track. At the bouys Simison sort of bounced twice and came down upside down and sideways. From then on Seebold was not headed. The D Runabout races started with Charlie Bailey, from Houston, Texas winning the first heat with Seebold second. Then in the second heat the same two drivers finished in the top two positions, with Seebold taking first and Bailey second. This placed another Championship in the Grant/Seebold camp by the result of a lower elapsed total time. Class F Runabout was very similar to both C and D. The same as C because Seebold and Fales entered the corner the same as Simison and Seebold had. This time Fales ended up getting wet in the same fashion as Simison. It was the same as Class D as Seebold swapped first and second places (this time with R.J. Pruett from Baytown, Texas) and won the Championship on elapsed time.



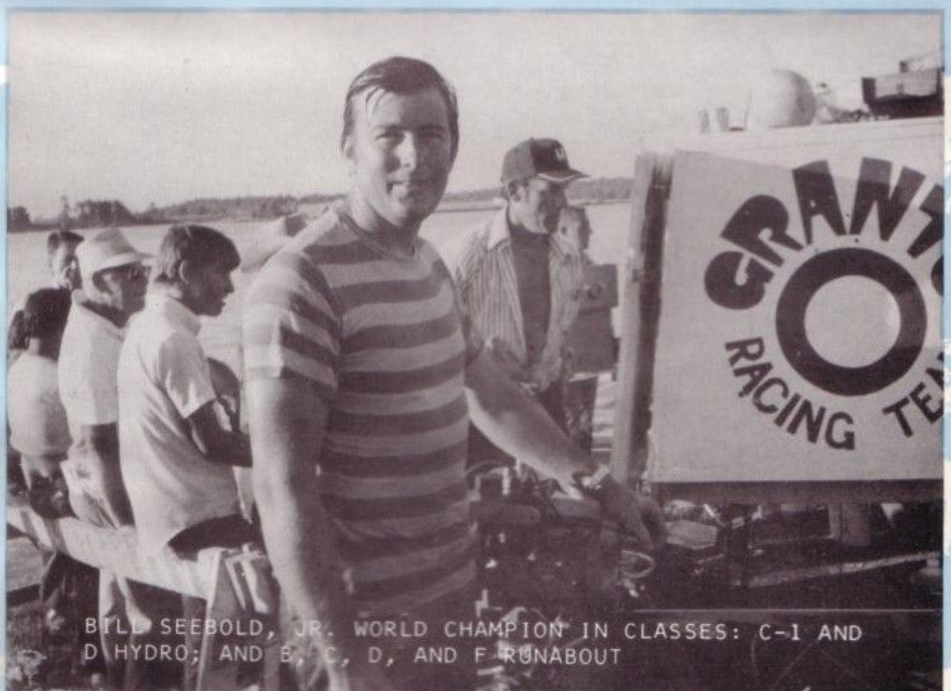
JIM SCHOCH, ONE OF THE NATIONS TOP DRIVERS LEAVES THE PITS.



BILL FALES FROM NORTHPORT, N.Y. FIRES UP HIS SIX-CYLINDER.



JERRY KIRTS, BROTHER OF WORLD CHAMPION, DAN, AND SON OF WORLD CHAMPION, MEL, IN HIS A HYDRO.



BILL SEEBOLD, JR. WORLD CHAMPION IN CLASSES: C-1 AND D HYDRO; AND B, C, D, AND F RUNABOUT



Class A Hydro was won by Bobby Wilson, Graham, Texas with a first and fourth place finish. In the first heat he finished with a resounding win over A-C Spark Plug's Jerry Waldman who ran second. Then in the final heat, Tim Butts with his Butts Aerowing a unique hydro of his own design ran away from the field. Second was Jim Schoch; with Phil Howard, Jacksonville, Illinois in third and Wilson finishing fourth - which gave him the Championship.

Jerry Waldman placed his Quincy powered Marchetti in first place in both heats of C Hydro. Each time it was Barry Wilson, Maplewood, Missouri, ran second with his Konig/Krier combination. And each time Jack Marshall from Sydney, Australia ran third.

APBA National Champion in Class B Hydro was Dan Kirts from Elkhart, Indiana. He repeated here with a first and fourth place finish to tie up the Championship with a Konig engine and a Byers Hydro. Second and third spots were also captured by Konig engines with Ralph Donald, Marietta, Georgia; and Billy Seebold piloting Marchetti Hydros to these positions.

Mel Kirts, father of the Class B winner, Dan, won the Class F contest with a second and third place finish which beat the first and sixth of Jerry Waldman. Both were driving Quincy engines on Marchetti Hydros.

The final Class X race forever (NOA has just dropped this class) found two different men winning the two heats. First Charlie Bailey, Houston Texas, got out in front at the first corner with a Konig and running second after the first lap was Jerry Waldman. Then in the next heat, Jerry Peterson from Des Moines, Iowa beat the field of thirteen



BOBBY WILSON, WORLD CHAMPION:
CLASS A HYDRO



DAN KIRTS, WORLD CHAMPION:
CLASS B HYDRO



JERRY WALDMAN, WORLD CHAMPION:
CLASS C AND X HYDRO



MEL KIRTS, WORLD CHAMPION:
CLASS F HYDRO



LOUIS WILLIAMS (3RD FROM LEFT),
WORLD CHAMPION: CLASS A RUNABOUT



BOB MURPHY, WORLD CHAMPION:
CLASS C-1 RUNABOUT

out of the corner with his six-cylinder Looper on his king-sized Marchetti and held first place for the entire race. Again finishing second was Jerry Waldman which put another Championship in the A-C camp for his 600 points.

Louis Williams, Beaumont, Texas; Jerry Simison; John Dortch and Bill Ela, Madison, Wisconsin ran mixed up in the top four positions in each heat of A Runabout. All were Quincy powered except Dortch who ran an A Konig. After tabulating points, Louis Williams was crowned Champion.

There was no contest for the Championship of C-1 Runabout. Bob Murphy, Springfield, Illinois, drove the expertly groomed equipment of Fred Brinkman to two consecutive first place finishes and added another C-1 title to his record.

A HYDRO

BOBBY WILSON GRAHAM, TEXAS
TIM BUTTS PLEASANT RIDGE, MICH.
PHIL HOWARD JACKSONVILLE, ILL.

B HYDRO

DAN KIRTS ELKHART, INDIANA
RALPH DONALD MARIETTA, GEORGIA
BILLY SEEBOLD ST. LOUIS, MISSOURI

C HYDRO

JERRY WALDMAN MILWAUKEE, WISC.
BARRY WILSON MAPLEWOOD, MISSOURI
JACK MARSHAL SYDNEY, AUSTRALIA

C-1 HYDRO

BILLY SEEBOLD ST. LOUIS, MISSOURI
BOB MURPHY SPRINGFIELD, ILLINOIS
STAN LEAVENDUSKY K.C., KANSAS

D HYDRO

BILLY SEEBOLD ST. LOUIS, MISSOURI
BILLY HULGAN NORTHPORT, ALABAMA
JIM SCHOCH QUINCY, ILLINOIS

F HYDRO

MEL KIRTS BRISTOL, INDIANA
JERRY WALDMAN MILWAUKEE, WISC.
WAYNE BALDWIN ALICE, TEXAS

X HYDRO

JERRY WALDMAN MILWAUKEE, WISC.
BILLY SEEBOLD ST. LOUIS, MISSOURI
CHARLIE BAILEY HOUSTON, TEXAS

A RUNABOUT

LOUIS WILLIAMS BEAUMONT, TEXAS
JERRY SIMISON FERGUS FALLS, MINN.
JOHNNY DORTCH OVERLAND, MISSOURI

B RUNABOUT

BILLY SEEBOLD ST. LOUIS, MISSOURI
LOUIS WILLIAMS BEAUMONT, TEXAS
JERRY SIMISON FERGUS FALLS, MINN.

C RUNABOUT

BILLY SEEBOLD ST. LOUIS, MISSOURI
JIM SCHOCH QUINCY, ILLINOIS
JERRY KIRTS ELKHART, INDIANA

C-1 RUNABOUT

BOB MURPHY SPRINGFIELD, ILLINOIS
BOBBY BOLTON TEXARKANA, TEXAS
KARL WILLIAMS TILLSONBURG, ONT.

D RUNABOUT

BILLY SEEBOLD ST. LOUIS, MISSOURI
CHARLIE BAILEY HOUSTON, TEXAS
RICH KRIER AMES, IOWA

F RUNABOUT

BILLY SEEBOLD ST. LOUIS, MISSOURI
R. J. UETT BAYTOWN, TEXAS
JERRY SIMISON FERGUS FALLS, MINN.



HI-POINT CHAMPIONS

A RUNABOUT	CHARLIE TOMBRAS	KNOXVILLE, TENNESSEE
B RUNABOUT	BILL ELLIS	DAYTON, OHIO
J HYDRO	JAMIE FOX	KNOXVILLE, TENNESSEE
A HYDRO	ROSS SUMNER	HUNTSVILLE, ALABAMA
B HYDRO	ROSS SUMNER	HUNTSVILLE, ALABAMA
C HYDRO	BOB BAKER OWENS	CROSSROADS, ALABAMA
D HYDRO	BOB ROBERTS	HUNTSVILLE, ALABAMA
HI-POINT	ROSS SUMNER	HUNTSVILLE, ALABAMA
ROOKIE	JIM FOX	KNOXVILLE, TENNESSEE

Knoxville Hydroplane Association



ROSS SUMNER - NATIONAL
HIGH POINT CHAMPION

The Knoxville Hydroplane Association is only three years old. Yet this up-and-coming club is already scheduling over ten races per season. The club runs J, A, B, C, and D Hydro; and A and B Runabout in NOA's Am-Pro division. Three years ago there wasn't an Am-Pro driver to be found in Eastern Tennessee; now there are about a dozen in the Knoxville area alone. The club invites out-of-state drivers to race with them. Prize money is comparable with the rest of the nation and they run two heats per class.

One of the outstanding drivers in the KHA won National honors as Ross Sumner, Huntsville, Alabama, won the National High-Point Championship in the Am-Pro ranks. He was also KHA High-Point Champion. In addition several individual High-Point Class Championships have been won by KHA members.

For complete information on the racing activities of the KHA, contact club President, Charlie Tombras, Jr. at the CTA building, Central at Main, Knoxville, Tennessee 37902; or telephone him at 615-524-5376.

FRED HAGMANN



Master Engine Builder

BY KARL WILLIAMS

Fred Hagmann, a devoted family man, respected businessman, successful boat racer and notable two-stroke engine specialist moved to Canada from Germany in 1950.

Exactly eleven years later, he was introduced to the greatest sport in the world, boat racing, by acclaimed Canadian C-Service engine builder, Stan McDonald.

Although Fred had a machinist background in Germany, his work in Canada is mainly along the automotive and two-cycle engine lines.

Fred has set up, operated, and sold an auto service business in Ottawa and now owns another in Winchester, Ontario. This coming spring the Winchester shop will be torn down and replaced by a new and larger building. This new building will have a separate room where all his two-stroke engine work will be completed. This same room will contain his dynamometer for testing his customers C-Service engines. Fred provides this service at a very reasonable price.

The shop is his home consists of a stock of parts for most OMC racing engines. This shop is small but he has the parts and equipment to complete each phase in building a championship engine.

Fred reached the top for the first time in 1963. This Canadian Championship was only a beginning which was later to extend over a five year period of claiming and reclaiming this same title. The racing season of 1964 was the only year he failed to capture a title. Plus, on July 17, 1965 Fred set the Canadian speed record for C-Service at 47.195 mph. His background and records have gained him the highest respect among his fellow Canadian and American C-Service drivers.

This coming season will be the fourth year Fred has built C-Service engines for other drivers. I asked him to give me a brief outline as to what he does when building a C-Service engine for competition. His outline was somewhat detailed. It seems to correspond with the quality of work this Canadian engine builder produces.

The crankcase seems to be the heart of an engine and this is where Fred begins. I am limited as to what I can write on this particular subject, however, when Fred is

finished, the crankcase surfaces are perfectly square and the top brass bushing does not wear as fast as most bushings in this particular area. The cylinders are ported on a milling machine then finished by hand. The pistons are then turned to fit the cylinders and balanced. Fred has been a firm believer in installing a 1 mm steel ring on each piston. The reason being to minimize friction on the cylinder wall. The pistons comes are hand polished with jewelers rouge.

As far as the connecting rods are concerned Fred is set up to offer his customers a wide choice of heavy duty C-Service rods to various horsepowers of OMC rods on request with rollers fitted to each engine. The flywheels are hand made from one solid piece of steel. The weight is concentrated to the center and as close to the crankcase as possible to guard against the possible chance of crankshaft breakage. Fred grinds his own cams and cuts the keyway on a milling machine. The rope plate is cut and finally the holes are drilled and tapped to accommodate the use of a puller.

Now that the rough work is done the flywheel is balanced, chrome plated, and the balance re-checked. The total time spent to complete one flywheel is fifteen hours. This type of flywheel was originally designed by Stan McDonald.

Now that the powerhead is ready the lower unit is then built to accommodate the power developed by the power plant up above. Fred makes his own lower unit front section and builds the lower unit up from this perfectly machined part. With the prop shaft and drive shaft aligned at exactly 90° from one another this setup will last many races without any trouble. Fred recommends approximately two solid days of testing and trying different setups to find the best and most efficient one for your boat and engine combination.

Altogether it takes Fred up to one month to build an engine. The cost to build a C-Service engine runs from \$350.00 to \$1100.00 depending on what the individual may request. The majority of the cost in a high quality C-Service engine is for extras and polishing. It is sometimes hard to explain the quality of work this man produces but it is very high. If anyone were to visit Fred and see his shop and equipment you would leave having the highest confidence in his product.

Around 50% of the C-Service drivers in the Ottawa area started racing due to the efforts of Fred Hagmann. He will not be racing for the next few years, but will attend the races to help anyone needing assistance in the pits. Now that the Canadian C-Service Champion has stepped down there is going to be the hardest driving yet on the race courses to determine the new Champion. In closing, I would like to say on behalf of the Canadian C-Service drivers, whoever wins the title in years to come, we will always consider Fred Hagmann as the C-Service King.

HYDROPLANE QUARTERLY'S Hall of Fame

featuring:

Billy Hulgan



Billy Hulgan, from Northport, Alabama became interested in the sport of boat racing when he was a small boy by watching hydros race up and down the Black Warrior River. The high speed fascinated him and in High School he built a hydroplane as a hobby. He enjoyed it so much that he started racing.

His first actual racing rig, in 1962, was a Merc-Quincy engine and a Dubinski Hydro. Then, after four years of competition he set a C Hydro straightaway record at 94 mph. The next year, 1967, he added the Class C Hydro competition speed record at 77 mph while racing in Lakeland, Florida. That same year he won the X Hydro Eastern Championship.

In 1969 he reached the top by winning both heats at Alexandria, Louisiana in Class C Hydro which gained him the World Championship for that class. Then in 1970 he captured the title of "General Lee" at the North/South Championships. In addition, during this past season, he again entered the World Championships and set a one mile course record in Class D Hydro at 69 mph along with winning one Championship heat.

Today he runs C and D König engines and Marchetti Hydros with his favorite class: Class C. He has no desire to race anything else. He has tried runabouts a couple of times, but by far, prefers hydros. He has never flipped in competition, although he has been thrown out of the boat a few times. And he has blown-over while testing which has caused minor injuries.

Billy is completely race-minded. He has a part-time job working at Wiggins Boat Marina. This is in addition to his regular job with the City of Tuscaloosa Fire Department. The off-season activities of Billy Hulgan are also water oriented as he enjoys water skiing, fishing, and working on his fast racing equipment. At age 27, with eight years experience and an impressive record behind him, Billy should continue to be a dominating factor in the sport of boat racing.

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ignition

Continued

is a generator and takes horsepower to drive it. It also requires a heavy rotating mass of magnets, particularly on the two cylinder engines, and this is hard on crankshafts and bearings. The battery system requires no horsepower from the engine, and no heavy flywheel. It does require that you carry some kind of a battery of sufficient size to do the job, and that you keep the battery in good condition, and well charged.

You can see that each system has its place, and your class, type of engine, personal preference, and racing association rules will dictate what you use.

Certainly no discussion of ignition would be complete without saying something about spark plugs. Spark plugs can be the thermometer of engine condition when you know how to read them, and certainly the best ignition system in the world is only as good as the plug it is firing.

The heat range of a plug is determined in large by its ability to transfer heat from the tip to the seat and away to the head. Generally speaking, the longer the tip electrode, the hotter the plug will run. The material that the gasket is made of will also affect tip temperature. For example a plug will run cooler with a solid copper gasket, than with a steel/asbestos gasket. Often this kind of substitution can be used to accomplish small changes in heat range, or allow a given plug to be used when another heat range plug is not available at the time. All manufacturers use different numbering systems, but in most cases, the higher the number, the hotter the plug will be. Electrode gaps should be at least close to manufacturers specifications. A closer gap will fire better under higher compression ratios and at higher rpm, but will be more susceptible to fouling.

A good strong ignition is the heart of your engine. It can determine whether you get out of the pits, or not. And can determine how fast you run. Sometimes just a miss or two on the way to the first turn can mean the difference between winning or losing so remember: Just a little routine care of the old flame-thrower will go a long way.

letters

To the Editor:

In one of the past issues of HQ you had a fine article on Seebold wheels, since then I have loaned the issue out. Anyway I don't have his address. Can you help me?

Larry Bowers
Defiance, Ohio

Seebold's address is in his ad in this issue. You may be interested to know that his wheels propelled ten drivers to alky Championships this fall AND props that were built by him won \$17,000 plus for first place at the "richest boat race in the world", (Havasu), an OPC race. - Ed.

To the Editor:

Who's around now that can build a good "B" Am-Pro Hydro for closed course racing? I would appreciate some leads.

Bob Viola
Arkansas City, Kansas

There are a lot of boat builders around, each with somewhat different but similar boats. I am sending you a list of some of them, and I hope it is of use to you. - Ed.

To the Editor:

Congratulations on the latest HQ. It was the best, ever, my unbiased critical opinion. I liked your suggestion as to how to eliminate the present dilemma in boat racing.

Karen Van Steenwyk
Kansas City, Missouri

Always like to hear from girls, especially from ones with unbiased critical opinions that are favorable. - Ed.

Dear Sir:

Certainly enjoyed my first issue of your magazine. Would like to know what your ads run price-wise thanks.

Bill Myers
El Paso, Texas

Am sending you advertising information. And thank you for the compliment on the magazine. - Ed.

CORRECTION: LAST ISSUE WE STATED THAT ALL MAGAZINES WOULD BE SENT BY FIRST CLASS MAIL. HOWEVER, WE MUST, FOR VARIOUS REASONS, CONTINUE TO USE THE PRESENT SYSTEM WHICH IS THIRD CLASS MAIL.

more facts and opinions

This column is designed as a readers forum and the opinions expressed herein are those of the writer; and not necessarily those of Hydroplane Quarterly or its Publisher.

DRIVERS - WHAT DO YOU WANT MOST FROM YOUR SPORT?

You want: 1. Big prize money, 2. No entry fees, 3. Good, well organized boat races, 4. Good pit areas, and 5. A way the cost of racing can be lowered.

It sounds impossible, right? You're wrong. It is not impossible and it's happening.

I have heard complaints about our sport going "down-the-drain". Some have suggested cutting out weak classes, and reclassifying our sport.

I say do something with what we already have. We have just as many drivers as in the past years maybe even more. These people have dropped out due to lack of interest, low prize money, poor pit areas, entry fees, and the high cost of boat racing.

Now, there are a lot of you that want to make changes in the classes because you cannot resolve the problems at hand. Avoiding the problem is not the answer. I have sat back and watched old ideas being applied to boat race after boat race. If you do not make changes every season our sport will become stale to both

RACING DIRECTORY

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the drivers and the spectators. Resulting in weak clubs that always turn to the boat racer for the extra money to keep it active. Sure this is the easy way out, however how long are your drivers going to carry the burden?

All-Sports Racing Club, is the answer to better boat racing and can give you what you want. You may ask what it is going to cost?

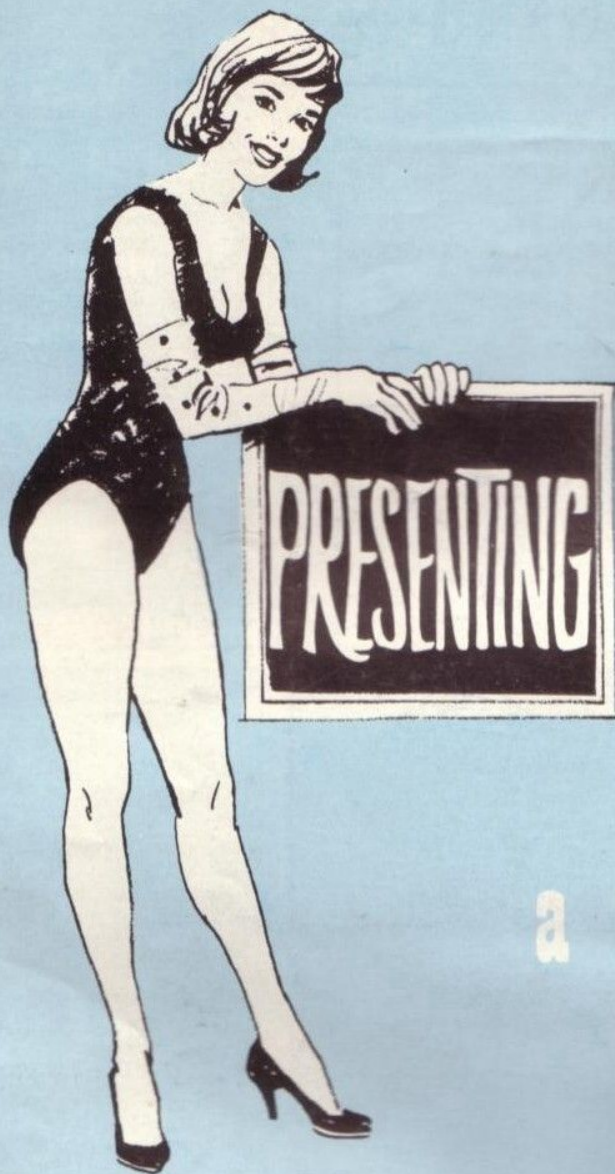
All this club asks of you as a driver or official is: 1. Support my June 20, 1971 race at Pt. Rowan, Ontario. I know there are classes not scheduled but show me you can support these 5 classes and in my No. 2 race I shall in-

clude all alky classes with even larger prize money. 2. Join All-Sports Racing Club. It costs only one dollar for a two year membership (a very small price to pay for what you are to receive in the way of better racing).

Give this club two racing seasons to give your sport the much needed lift.

Karl Williams
Ed note; See details of race on the back cover.





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