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UNJ INTERVIEW:

Dixon Smith: The man with the answers.

When people within the sport of unlimited hydroplane racing have a technical question, Dixon Smith is often the person they will go to for an answer. Dixon was born in Seattle in 1943—a child when the sport took Seattle by storm. His father, Burns Smith, worked on the crew of Miss Seattle. Dixon and his brother, David, were welcome in the shop and developed a life-long interest in boat racing. In the following interview, conducted on May 26, 2023, Craig Fjarlie talked with Dixon about his involvement with hydroplane racing, focusing on his contributions to solving problems and enhancing performance of Rolls-Royce Merlin and Allison engines.

Ken Johnson photo/Dixon Smith collection

A young Dixon Smith works on some gears while a member of the *Miss Bardahl* crew in the early 1960s.

UNJ: Where were you living in Seattle when you were a young person?

Smith: Grew up on Beacon Hill, went to Beacon Hill Grade School and Cleveland High School.

Your dad was working on *Miss Seattle* when it was being restored following the *Slo-mo V* flip. Is that what got you interested in hydroplanes?

Well, sort of...

You probably saw the boats before that on Lake Washington.

My dad's real job was working for IBM as a repairman, on IBM stuff. And that was long before computers, when

ALSO IN THIS MONTH'S ISSUE:

it was all mechanical machinery. But, he was also a really, really good wood butcher. He built several water-ski boats at home, in the basement. He got to know a Mercury outboard dealer by the name of Jimmy Harland. Jimmy was a racer also, an outboard racer. His business was selling Mercury outboards and so forth, on Aurora Avenue. My dad got to know him.

After the *Slo-mo V* flipped, it was sold to a group of Seattle businessmen. I believe they called themselves Roostertails, Inc. Jimmy Harland, I think he was actually part of that businessman's group, but he was also the designated crew chief of the boat. He recruited my dad to help rebuild the boat, because he knew my dad was a good wood butcher. Part of my dad's agreement—and he did this whatever boat he worked on—he said, "If I work on the boat, my kids are welcome around the boat. They won't be a problem, I'll keep track of 'em, but they're welcome around the boat."

The typical volunteer boat race deal was Tuesday nights, Thursday nights, and Saturdays. So, on Saturday morning my dad would pile my brother, David, and I in the car and off we'd go. They had some space down on the waterfront. I don't know how that came about, but that's where the boat was, in a warehouse down on the waterfront. This was about, probably 1955, something like that.

Hydroplane and Raceboat Museum

Dixon's dad, Burns Smith, became the crew chief of the *Miss Seattle*. Here, the crew works to prepare the former *Slo-mo-shun V* hull for the 1956 season.

At that time I was 10 or 11, and my brother was about eight. We'd go down there, and it was kind of an adventure because the warehouse had different stuff in it. We'd screw around, and they also kept us sort of busy when they needed a small person inside the boat. They'd stuff one of us kids in there. We also basically hand-sanded the deck of the boat, which was probably just to keep us busy, because I'm not convinced we did a very good job.

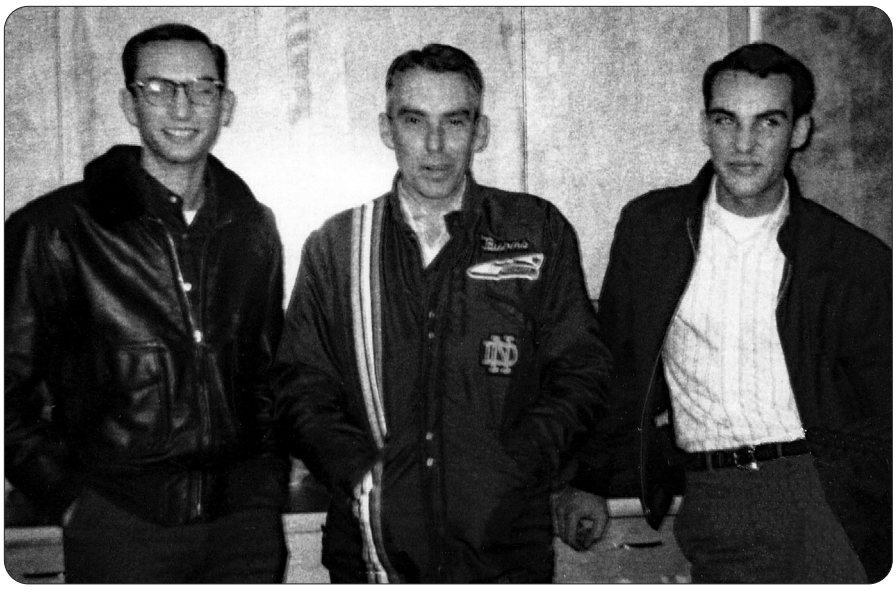
That's kind of my introduction to boat racing. At some point Jimmy Harland decided he didn't want to be crew chief anymore, and my dad was promoted to being crew chief. So, our family vacations were going to boat races. Probably not my mother's favorite thing to do, but for about three years my dad worked on the boat. We hung around, got to know a lot of people, learned a little bit, and so forth. So, that was kind of the introduction to boat racing in the family.

A little incident that happened before that, before dad was working on the *Miss Seattle*, we were on a family outing. I don't remember—weekend, day, something like that, on Lake Washington. We were water skiing and some hydroplane, an Unlimited, is out testing. It comes to a halt in the middle of the lake for whatever reason, and dad decides maybe we can go over and see if they need a tow or help or anything like this. Now, this is before he was involved with *Miss Seattle*.

I distinctly remember him saying to both myself and my brother, "Boys, I want you to really pay attention 'cause this is probably the closest you'll ever get to an Unlimited hydroplane." [laughter] Interesting perspective at the time.

We don't always know what the future holds!

No, you don't. So that's kind of the introduction to boat racing. Then, my dad basically decided that being a crew chief and having a family and all that



Marg Smith photo/Dixon Smith collection

Burns Smith is flanked by his two sons, Dixon on the left and David on the right.

was just way more than he could handle. After, I think, about three years of being crew chief on the boat, also doing a bunch of test driving, he decided to quit. It was just too much going on.

But in the meantime, one of the nice things about that era of boat racing is at the end of the season, they had family day. The boats would launch wherever they could launch 'em and then they would give rides to anybody whose family wanted to get rides in the boat. They'd get a bunch of gas and had ride day. I got my first ride in an Unlimited in 1956 when I was 13 years old. My brother and sister both got rides, my mom got a couple rides, and so forth. Back then, Mobil would give 'em all the gas they wanted and all the oil they wanted, so it didn't cost anything.

You had to have a flying red horse decal on the boat.

Yup, because they got gas, and so forth. So, dad quit the *Miss Seattle* operation and he kind of poked around a little bit with the *Miss Seattle Too*. Before that the *Hawaii Kai* was sold to a guy by the name of Joe Mascari and operated out of Seattle. I believe Ray Morey was the crew chief but I'm not real sure about that. Dad was recruited to work on that boat as a crew guy, so I hung around the *Hawaii Kai*, learned a little bit, I'm a little bit older now. Learned a little bit about boats, motors, how things like that happened and so forth.

That lasted a couple of years. Brien Wygle was initially the driver and then Ron Musson. Dad got to know Brien, who was a test pilot for Boeing at the time, and they became really good friends. So, he worked on that for a couple of years and then the boat was sold, so that operation went away. During that time frame he also worked on the *Miss Seattle Too* as a crew guy, not crew chief or anything.

Then, I think it was between my junior and senior year in high school, dad had been working on the boat and they needed somebody to drive the shop pick-up truck around, pick up parts, you know, just be a go-fer type of thing. I was offered the opportunity to be the pick-up truck driver, go chase parts, sweep the floor in the shop, clean parts, do whatever was necessary. The guy that was a full-time employee there was a fellow by the name of Wes Kiesling, who had been a *Slo-mo IV*, *Slo-mo V* crew guy. He was basically the engine guy.

So, I was basically there pretty much five days a week in the summer, and Wes was building engines at the time. He was kind of a grumpy old guy but for some reason he took a liking to me and that summer he taught me an awful lot about how to be a good mechanic. Besides washing parts and sweeping the floor, I actually learned a tremendous amount about how to build a racing engine and what you need to be careful with and so forth.

At the time, I didn't realize what I was learning. Later, looking back, it was a really, really good education and Wes was super with me on that. With most people he was kind of grumpy, but for some reason we got along really well. That's when I really started learning how to be a good mechanic and what it took to be a racer-type of guy. This was when I was in high school. That was a really good summer job for me. No pay, just the glamour and the glory of being around boat racers and it was really, really interesting.

In that era, especially, if we can back up a little bit to *Miss Seattle*, your dad told about going to a race on Flathead Lake, Montana. Bob Gilliam won, and your dad said, "He never let us forget that."

Yes. Well, both *Miss Seattle* and Bob Gilliam were really low-dollar operations. They didn't really have a lot of resources. The people who worked on the boat were really enthusiastic, but they didn't necessarily have deep knowledge

Bob Carver Photos

The *Miss Seattle* competes in the 1956 Seafair Trophy Race on Lake Washington. Lin Ivey and Norm Evans shared driving duties that day.

either, so it was sort of amateur hour at the pits at times. I remember, not necessarily at Flathead, but there were times when, early on, they had engine problems and dad came home and said, "Don't tell anybody but we just screwed up, we put it together wrong," or something got hooked up in the boat wrong and it was a case of we just didn't know, type of thing.

They were running Allisons in *Miss Seattle* at the time?

They started out with Allisons, and they ran Allisons for a year or two and then they switched over to Merlins. That was, again, a huge learning experience. They got a fair amount of help from the *Slo-mo* guys. They were very helpful, and other people, 'cause they just really didn't know. I mean, when they started using Allisons, their motor guy was an instructor, an A&P instructor at Seattle Tech by the name of Bob Rowe. He was an airplane mechanic but zero boat racing experience. So, all he knew was read the manual, put the engine together by the manual. Well, that works most of the time but not all the time for boat racing. Just looking back on it, for the knowledge they had and the resources they had, they actually did pretty well.

Yeah. When you got the rides in the boat, on ride day, who was the driver?

My dad.

Oh, your dad. Okay.

He actually did some amount of test driving at times. He never drove competitively but he did some test driving and yeah, that's who gave us rides. My dad was the driver.

The regular drivers were Al Benson and Chuck Hickling.

Yeah, Al Benson and Chuck Hickling were drivers, and Norm Evans, also. Norm Evans drove for them.

Chuck was kind of known as a tough, grumpy guy, too, at times.

My dad and Chuck got along really well. They were really good friends and Chuck lived on Lake Washington, on the East Channel, kind of right under the East Channel Bridge. I remember going over there to go water skiing and just visiting and so forth. But Chuck and Mel, his wife, were really good friends of my parents. I don't know whether they knew them before he got involved in boat racing, but they stayed as friends for a long, long time.

And Al Benson, of course, everybody knew him from outboards and other things. He was pretty deeply involved in racing in the area.

Oh, yeah. The book his son, Jimmy, wrote about Slough racing, I didn't realize how deeply Al was involved in setting up races and just the whole thing he did, until I read the book. But he was deeply involved in racing for a long, long time.

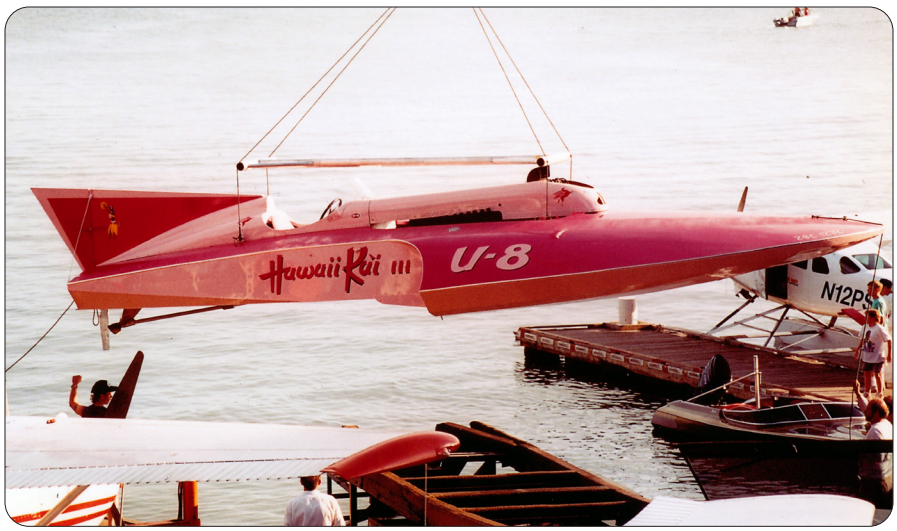
Well, after you worked on *Hawaii Kai*, you were going to college by that point? Just starting?

I was just starting college at the University of Washington. I'd graduated from high school. Let's see, I graduated in 1961, so I started college in '62. In '61, the *Hawaii Kai* got sold so all the people that had worked on it didn't have a race boat to work on anymore. You know, they liked working on it, they thought they had a pretty good deal going there, but Mascari didn't want to spend the money, I guess.

Anyway, part way through the 1962 season, Ole Bardahl got real crossways with his crew. George McKernan was the crew chief, and I don't know all the people that were on the crew, but Ole got crossways with them. I think it was right after the Seafair race, he fired the whole crew, with the exception of Leo Vanden Berg. Leo was on the crew, he wasn't crew chief, and for whatever reason Ole trusted Leo and he fired the whole lot of them except for Leo.

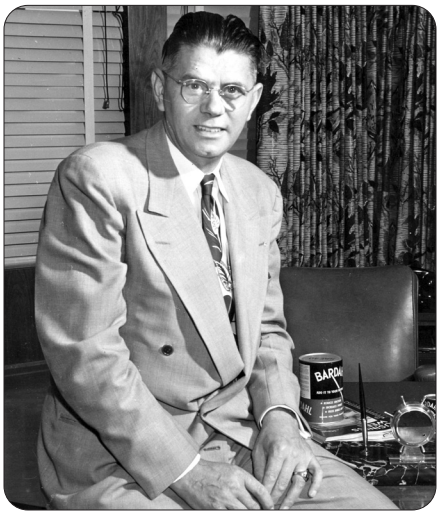
So now Leo has got a race boat mid-season and needs a crew. Well, he was aware of the *Hawaii Kai* group and they had actually been fairly successful running that boat, so Leo basically recruited several of the people that had worked on the *Hawaii Kai* the previous year, my dad being one of 'em, another guy, Ken Larson, and a couple other people. So, Leo recruited, hired these guys to be the crew for the rest of the season. And I came along as excess baggage.

My typical deal with my dad, "If I'm going to work on a boat, my kids are welcome around the boat." I was knowledgeable enough that instead of being in the way, I was actually, probably, helpful, 'cause I'd been around boats enough and learned enough stuff and thanks to Wes Kiesling, kinda knew a little bit about motors and stuff like that. I think the only race that was left that season was up



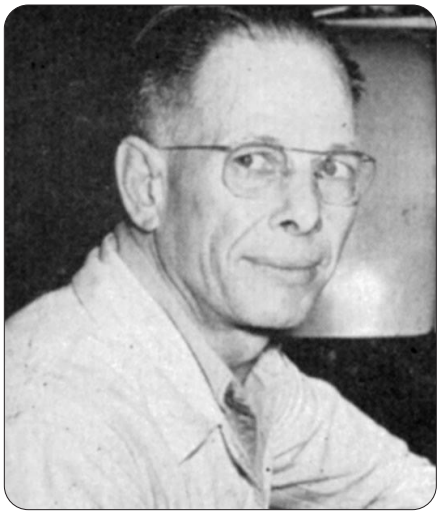
Kirk Johnson

After the *Hawaii Kai III* was sold to Joe Mascari, Dixon's dad joined that crew and Dixon became more involved in helping with some of the crew's duties.



Hydroplane and Raceboat Museum

Ole Bardahl



Hydroplane and Raceboat Museum

Wes Kiesling

at Lake Tahoe. Ron Musson was driving, and I think they won that race.

In '62, yeah.

Yeah, '62, they did.

Things hadn't gone too well earlier in the year, but they got it together there.

I don't remember if that crew was at any other races, but I do remember being at Lake Tahoe. We have some pictures of the crew up on the boat and so forth, and my dad's up there. I don't remember if I'm in the picture or not, but I think I was. So, anyway, last race of the season, did well, get back to Seattle, take a couple of months off, and then go on the typical Tuesday, Thursday, Saturday deal. And for whatever reason, and I don't really know why, my dad and Leo didn't get along real well. So, my dad decided he wasn't going to work for Leo, so he left.

I decided I'd try and stay. You know, I'm a University of Washington student at this point, so I'm a little bit some of the time at home, some of the time out at the University when I could afford it. This boat racing gig sounded like a really fun deal. So, I stayed and my dad left. At that point I became, actually, an official crewmember on the *Bardahl*. Started taking on engine work because I kind of knew what was going on there.

The deal was, we worked Tuesday nights, Thursday nights, and Saturdays. Ole was nice enough that he had an account set up at one of the local restaurants, so Tuesday night and Thursday night we had a really nice dinner at the local restaurant, paid for by Bardahl. Then Saturday, they'd buy hamburgers or something for lunch, and that's what we got paid during the winter. We got dinner and lunches, and that was it. It was completely volunteer.

Jerry Zuvich was about the same age as I am. I probably turned 20 at that point. Jerry actually had been a full-time employee of Bardahl, just working on the cam line in the warehouse. He was also interested enough in the boats that he started working on the boat on Tuesday nights, Thursday nights, and Saturdays, and then during the daytime he had his regular job somewhere else in Bardahl. That sort of migrated into the point where he became more of a full-time boat race guy, because they had a lot of stuff that needed to get done, chasing parts, finding stuff, just doing stuff. So, Jerry ended up being kind of an 8 o'clock to 5 o'clock, Monday through Friday boat race guy. Everybody else was a volunteer, got a regular job.

So, that summer we gotta go boat racing. Leo took a little bit of time off from his job. He was a mechanic for the Government Service Agency. I think the shop was down on Marginal Way or something like that, but that was his regular job. He had some limited vacation, so he went on the road a little bit.

George Speshock

The *Miss Bardahl* crew at the end of the 1962 season.

Bob Carver Photos

ABOVE: The *Miss Bardahl* won both the national championship and the Gold Cup for three straight years, 1963 to 1965. The boat would win a total of 12 races and still holds the record for piston-powered boats by finishing 57 consecutive heats.
RIGHT: Ron Musson.

"I'd go to the first race and then I worked all summer on the boat. The end of the season would just about correspond with school starting and I'd go back to school."

Then, pretty soon, Jerry and I, at age 20, 21, were the designated truck drivers. We basically dragged that operation around the circuit each summer.

It usually worked out that when I finished spring quarter at the University, I'd jump on an airplane, go to the first race, because the boat had left. Leo or somebody had taken it. I'd go to the first race and then I worked all summer on the boat. The end of the season would just about correspond with school starting and I'd go back to school. So basically, in the summer, I was a full-time employee, truck driver, boat racer, you name it, for the whole time I worked for Bardahl.

When you were in college, had you declared a major? Were you pretty certain what direction you were going to go?

I declared myself as a physics major. I probably really didn't know what that meant, but it sounded really cool and with the background of kind of being a mechanical guy, that sounded like a good place to go. So, I was a physics major. I ended up getting dual degrees. I ended up with a physics degree and a math degree when I finally got out of college. The physics stuff gave me enough theory that I understood how you do research and so forth, which ended up helping me a lot on the boat racing stuff.

During the winter we worked for free. In the summer we were on a salary. Jerry and I were paid. Well, Jerry was paid all the time, but we were on a salary. We were on a modest per diem schedule. We had to pick up our own hotels and food and all that kind of stuff, but we were on a modest per

Bob Carver Photos

diem schedule. I could pretty much live off the per diem if I stayed out of the bars most of the time and didn't piss away money too badly.

Then we also got—each of the crew guys—we got a small percentage of the prize money. If the boat did well, we got a little bit of extra money. Being a college kid and being on the road, I had no expenses other than eating and sleeping. Typically, we were working seven days a week, 10, 12 hours a day, pretty continuously the whole summer. We didn't have a whole lot of extra time to do anything either, but that was okay. I mean, that's just boat racing. So, salary and prize money went in the

bank and that basically paid for school the next year. I came out of college basically not owing anybody anything and I also owned an old beat-up, well-used Porsche at the time, and that's thanks to Bardahl. Bardahl paid for my college education, working on the race boat.

So, you stayed with *Bardahl* all the way through Schumacher?

No, I was there through the cabover.

Oh, yeah, and then you went to *Tahoe Miss*.

When the cabover crashed in Washington, D.C., the boat was destroyed, Ron was killed, and Bardahl at that point basically said, "We're done boat racing."

That was kind of a double hit for them, losing Rex Manchester, too.

Oh, yeah, I mean, that was a terrible deal, because Ron's killed and then a short time later Rex is killed, who's Ole's son-in-law, and it was just devastating to everybody. Then the following week, Chuck Thompson's killed in Detroit. So, it was a really, really bad year for boat racing.

So, after the cabover crashed, I still needed a job. I got to know a lot of the *Tahoe Miss* people pretty well. Great group of people, really liked 'em, professional operation, and just in general I got along with those guys really well. So, I talked to Andy Anderson and said, "Any chance of going to work on the *Tahoe*? I'm going home to Seattle for Ron's funeral and so forth." Basically, they said, "Yes, as a matter of fact we're looking for somebody. We've got one guy on the crew we hired this spring who is not working out. As soon as we get to Reno he's going away, and then there's an opening. You're more than welcome to apply and we will probably take you, if you decide to apply."

I said, "That's okay, but I'm at Detroit and I'm not sure how I can handle all this."

He said, "Well, tell you what. Since we think we're going to hire you, you can room with one of our guys in Detroit and then you can ride the truck out to Reno, and then when we get to Reno, we'll hire you." They were really nice about it. So, that's how I got hired by Harrah's to work on the *Tahoe* in 1966. So, I worked about the second half of the season. Then, after the season, there was a decision to go up to Lake Tahoe and try to set the straightaway speed record, which I worked on there.

If we can go back to *Bardahl* for a moment, from '62 to '65, were any significant changes made to the boat to help improve handling? Of course, there was the use of nitrous oxide, but that's almost another story in itself.

Well, yeah, there were some significant changes to the boat. The boat tended to be nose heavy and didn't pick up and ride very freely. It had a whole bunch of flotation up in the bow, under the deck. It was Styrofoam flotation in case something happened. After the first season that stuff had ended up soaking up a bunch of water and oil and so forth. It wasn't actually impervious to any of that stuff and so, all of that got ripped out of the boat, which helped, because it got rid of some weight.

Then we started doing some sponson work on the thing. After the first season, when the boat was obviously nose heavy, tail light, Ron Jones was hired to kind of, "What's going on with this thing?" If you look at the boat, the back of the sponsons aren't straight up and down, they're notched and go forward. So, the idea was to move the back of the sponsons forward about six inches, which Ron Jones did. My brother at that point was hangin' around and he helped do that. And that helped the boat because the boat didn't have enough weight on the prop, was kind of nose heavy. So, the sponson running surface moved forward.

We pulled all of that flotation stuff out of the nose which helped, and we were starting to pick away at some of the engine problems we had. This is where my education at the University helped a fair amount and I kind of learned how you do experiments, because part of the

Forde Photographers/Michelle Musson Bostick collection

Gail Reid, the 1962 Seafair Queen, got a ride aboard *Miss Bardahl* in July 1963. Ron Musson is with her in the cockpit and on the deck are crewmembers, from the left, Jerry Zuvich, Leo Vanden Berg, and Dixon Smith.

physics curriculum is you've got a bunch of canned experiments that you're doing and how do you do these things, how do you analyze the results.

I remember one of the experiments was asking you to measure the speed of light, which we did. They had a set-up that you could use. They had, kind of, the machinery set up. Okay, there's the stuff, figure out how to use it, how do you do the calculation, and so forth, and we did. Part of the lab courses were really good, because they taught you how to analyze stuff, how you set things up, and so forth.

Well, I kind of took that knowledge and talked to people on the crew about how you do things like that. So, if you break something, don't just throw it away. Look at it, try and figure out what went wrong and then if you can figure out what went wrong, now you've got a way to start looking at how you fix these things.

The other thing that I learned and tried to make everybody understand was, if you try something, if you have an experiment and you want to try something different, if it succeeds, great, but if it fails, don't just say that's a piece of crap and we'll never try that again. No, wait a minute. Why did it fail, what don't you understand? If you're trying to do something and it doesn't work, obviously there's a gap in your knowledge for one thing, so maybe try and fill in that gap of knowledge and see what's going on.

So, we actually, internally, developed a pretty good process for, okay, we broke an engine, what broke, what caused the breakage, what's going on here, how do we fix the things. And over a period of a couple years we made some significant changes to the innards of the engine. Most of it was not to make more horsepower, most of it was to increase reliability so we didn't break things.

A lot of races, especially in the '50s, were won because somebody lasted through the whole race and didn't break down.

Yeah, and as I used to tell people, the biggest thing you gotta learn in racing is you gotta finish to win. If you don't finish, you don't win.

Muncey used to say, respect and conserve your equipment.

Yeah, and so we did an awful lot of development work on engines to try and increase reliability. The result is that the boat, by the time it was retired in 1965, ran 57 consecutive heats without a failure. That record still lasts for piston-powered boats. A lot of it was just paying attention to what broke and then trying to analyze what's going on.

Then, when I was going to the University—I'm a physics major, which is kind of an offshoot of engineering, sort of—I discovered this wonderful resource. In the basement of the engineering building, they had an engineering library, and it was purely engineering stuff. One of the things I discovered is eight or 10 linear feet of bookshelves with normal, notebook-sized publications by NACA, which is the parent organization of NASA. Anyway, these folks, this organization, started out in the '20s and sort of evolved in the '30s.

Sandy Ross collection

Hydroplane and Raceboat Museum

TOP: Ron Musson prepares to take *Miss Bardahl* onto the racecourse.
ABOVE: The *Miss Bardahl* is on the hoist at the Stan Sayres Pits in Seattle.

It was government-funded and it was a research organization dealing with airplanes and anything associated with airplanes. They did stuff on float planes, they did stuff on fighters, they did stuff on engines, they did all kinds of stuff, it was a research organization.

During World War II they did some really, really good work on engine development, a lot of research on engine development—radial engines, in-lines, you name it. They spent a ton of money and published research reports. All that stuff was classified during World War II. It stayed classified through probably about the Korean War era, because there were still some fighters that had piston engines at that era. Somewhere along the line they quit using piston-powered airplanes and went to jet-powered, and somewhere in the late '50s, I think, they declassified this whole pile of research and published it and gave it to most of the big universities.

The University of Washington inherited this great pile of research stuff that had been done during World War II. I discovered that just by happenstance. I'm down there looking at stuff, kinda rootin' around, I'm curious, and I see this stuff and I start pulling some of these reports. There's some really interesting stuff on engine development. I started reading these things and that's where I ran into reports on nitrous. I also ran into a bunch of stuff on water-alcohol injection, on how you make more horsepower out of engines, stuff on reliability that they'd worked on, and it was just a wonderful trove of information. Some of that stuff turned out to be really, really useful. The nitrous oxide stuff obviously, but there was other stuff that turned out to be really interesting and useful, too.

One of the problems they were having was the quill shaft. Was that more of an Allison problem, or did the Merlins have it as well, or both?

Both of 'em had the problem.

Lake Washington got the nickname quill shaft lagoon. [Laughter]

Well, just a little bit of background. The quill shaft is the chunk of machinery that hooks the crankshaft to the supercharger. And the supercharger is typically turning anywhere from 6, 7, to 10 times faster than the crankshaft, so there's a lot of machinery going on in there. But the quill shaft is kind of this last little link.

On the Allison, the quill shaft only drives the supercharger, so if the quill shaft breaks the motor will continue running but at significantly reduced horsepower. On a Merlin, the quill shaft not only drives the supercharger, it drives the cams and the mags and the oil pump, so when the quill shaft on a Merlin breaks, the motor stops. And it's a big deal on both because if you break the quill shaft, you'll be at significantly reduced power on an Allison, or on a Merlin it's not running any more. It just stops.

[At this point, Smith is looking at illustrations of quill shafts.] Okay, there's Merlin quill shafts. This is what the original quill shaft looks like, about this big around and about that long [gestures]. The reason it's built the way it is, is the crankshaft has some pulses from each piston firing and you don't want those pulses going into the supercharger. So, this is designed to actually be a little bit of a torsional damper in this thing. However, that also makes it weaker. So, the first cut at it was just build ones that are thicker. Better material, thicker. [He points to an original quill shaft] These break almost instantly. [He then points to the thicker version] These last maybe a heat or two. And what they will do, they'll start to twist and then at some point they'll break.

Bobby Schott

Skip Schott (left) and Dixon Smith on the deck of *Miss Bardahl* during the boat's final race appearance, which took place in San Diego in 1965.

There's a bunch of stuff that goes around the outside of this to drive cams and mags and all that kind of stuff, so the next iteration on this thing was to try and combine a bunch of this material and so then a thicker quill was built. Normally this gear would be over this thing and this would fit in the crankshaft. It still had a small spline and part of the way for building it this way is just assembly of the engine, to put things together. And we broke these things and then the *Exide* people actually, originally, came up with this.

They actually spent the money and they had this quill shaft, which was a combination of this plus all of the crap that went around it, and this fits into the crankshaft. The gear that goes on here drives the supercharger, this gear drives the cams and the mags. But to assemble the engine, you better make some modifications to the crankshaft and some other stuff. Getting this together is a little bit of a challenge. But this actu-

ally fixed the problem, because you can see it's about twice as thick.

Yeah, so they stopped breaking and twisting.

Yeah, this quit breaking but something else up the line breaks.

You always chase your problems.

Yeah. Almost all of this stuff, whatever breaks, you fix it, and you'll find that that's the piece of the puzzle. So here are some pictures, that's a quill shaft that's broken or twisted off. And usually, when it twists off it tears up some other stuff in the engine. When we were running these, they would last about one heat, maybe two heats before they'd start to twist. So, the fix is, you change 'em. You change 'em every heat. You do it in the boat. We had a little hoist, a deal in the boat and a hoist and we would unzip the supercharger, pull it out, and actually tear into the engine in the boat between heats.

Jerry and I were doing this, and we could change a quill shaft in about 20 minutes. The engine's hot, so as we're pulling innards out of the engine, they're going to a pan that had ice water in it, to cool it off. Pull the old quill out, put a new quill in, then you had to stack all those gears and everything back in, but they were cold now. So, you pick 'em out of the ice water, shake 'em off, and now you could put 'em back in without having to wear gloves and so forth. We were doing quill changes between heats.

Sandy Ross collection

After the destruction of the cabover *Miss Bardahl* in 1966, Dixon Smith finished that season as a member of the *Tahoe Miss* crew.

Some of the rules back then did not allow engine changes during the race, but you could change the quill shaft.

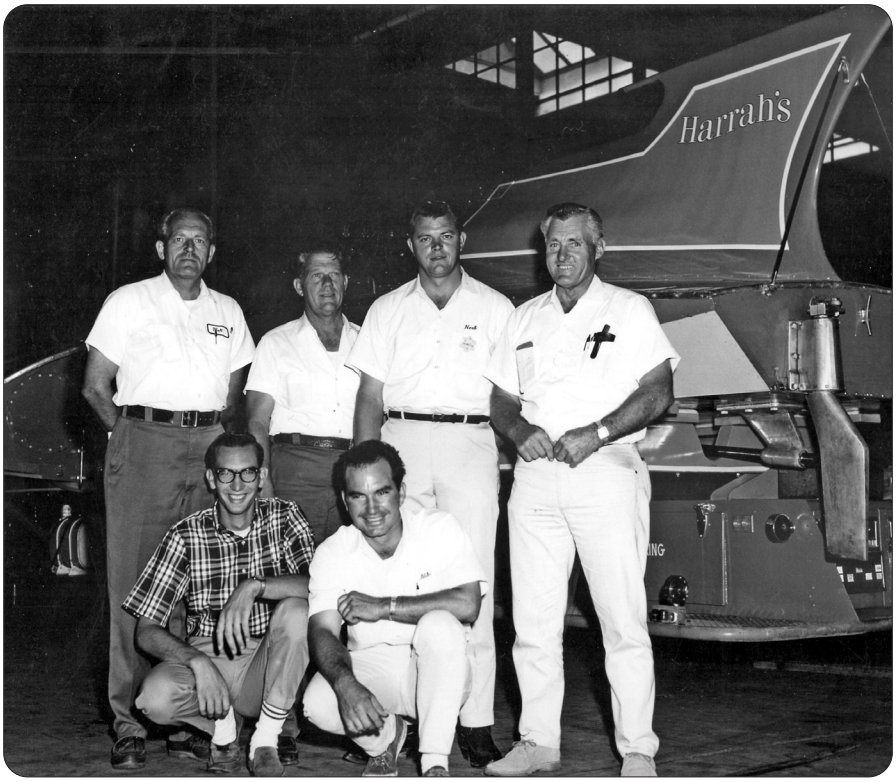
Yeah, so that was a big deal. We practiced that. And when we finally figured out how to make big quill shafts, we didn't have to do that. That was a huge deal, because you do this between heats, the margin for screwing it up and error is pretty slim.

Especially if you're running in 1B and then 2A. You don't have a lot of time.

No, you don't. So anyway, that's some of the stuff that went on. That's kind of the evolution of the quill shaft. We did a lot of work with the connecting rods, trying to keep from breaking them. A lot of the innards in the engine got beefed up over the years, too. Trying to chase problems around. One of the things that was happening, we were having a lot of problems with cam shafts. The way the cam shaft works, we were eating up lobes on cam shafts and followers. Now, remember we're working for Bardahl oil company, right?

Oh, yeah.

Okay, so part-way through the season we're eating up cam shafts like mad. This new product that's starting to be ad-



Hydroplane and Raceboat Museum

The *Tahoe Miss* won the 1966 national championship with Mira Slovak as their driver. The crew members at sseason's end included Dixon Smith, kneeling at left, and crew chief Andy Anderson, standing at far right.

vertised called STP has come out. Andy Granatelli is behind that stuff. The advertising on it, one of their things was, you take a screwdriver and dip it in the STP, then you try and hold the end of the screwdriver you can't, because it's thick, it's thick as honey but it's kind of an oil-based stuff. So, Jerry and I see that and say, "I wonder if that would help?" So, we go to the local store, we buy a bunch of this stuff, we pour some into the oil tank, a little bit in the oil tank and we're starting to see a little improvement. We're not eating up cams. Let's pour some more in. So, we start pouring some STP in and pretty soon we're to the point where the cams are kinda behaving.

While all of this is going on, we've been back east on the race circuit and we've been talking to the staff chemist. Bardahl had an actual degreed chemist on staff for doing oil analysis and all that kind of stuff. We'd been talking to him about this cam problem and did he have any solutions or anything like that. We didn't tell him at the time we were pouring STP in. So, we head back to Seattle, we're ripping an engine apart and the chemist comes down with a couple of vials and scoops some oil out of the engine to take it up to his lap and analyze it. Jerry and I go, "Oh, oh." [Laughter]

Chemist was kind of a good guy so we finally decide we gotta go 'fess up to this guy and tell him what's doing. So, we go talk to the chemist and tell him what we're doing, we're pouring this competitive product for Bardahl in the oil and it's actually helping. Okay, he does some analysis, figures out what this stuff is, what the background is. Bardahl starts buying this stuff from the manufacturer, not STP, but the actual chemical company that was manufacturing it. They start buying it, canning it, calling it B2. Jerry and I introduced Bardahl to this stuff, but only from the racing. So, we were responsible for a new product at Bardahl. We never got any credit for it, but it worked. That's the kind of stuff that went on and we'd just try stuff sometimes, see what would happen.

You have told the story of how nitrous oxide was incorporated into hydroplane engines, but maybe you could reiterate that story, and the competition between *Bardahl* and *Exide* about who began using it first.

Okay. What started it was, I am in the engineering library, I'm going through the NACA pubs, and I run into this article that says something to the effect of increased horsepower by injecting nitrous oxide in a V-12 aircraft engine. V-12, we got some of those. So, I read the article, and what they did is they actually were doing the work on an Allison. But what they were doing is they were screwing around, mixing nitrous oxide with air before it went into the engine. Doing some research, okay. Can we get more horsepower out of this? How much do we have to modify the engine? Do we have to change spark plugs? Do we have to change ignition timing? Do we do any of those kinds of things? It was a pure research project, it never got to an airplane.

"There was a fair amount of push-back from the crew, the 'I don't know what I'm talking about and, you know, you're blowing smoke.' So, I keep pushing and finally Leo agrees that I can put something together and get it in the race boat, in an engine, if I promise that I won't hurt the engine or that I won't blow up the engine."

Now it turned out the Germans were actually using it and the English right at the end of World War II started using it a little bit, but it was all classified in each one of those. Nobody kind of knew what was going on. So, I read the article a couple of times, did some calculations, and said, "I think this stuff is probably worth doing." So, I came over to the boat shop, one of our Tuesday, Thursday evening deals, and basically presented it. Okay, here's the stuff I found out about, it's called nitrous oxide. If we inject it into the engine, we can make more horsepower.

"You sure you know what you're talking about?"

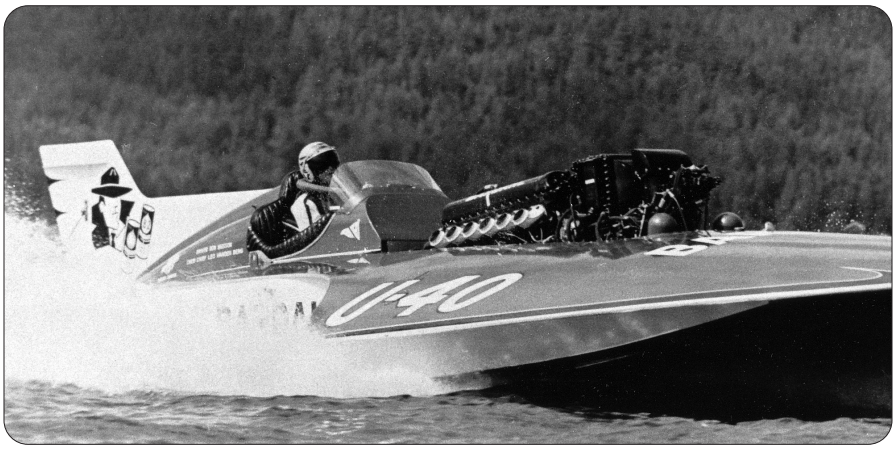
"I think so."

And the first comment was, "Well, other people have tried everything you can think of, pouring it into the gas tank, and nobody's been able to do anything like this."

I said, "You don't pour it in the gas tank."

"Well, how in the hell does it work, then?" There was a fair amount of push-back from the crew, the "I don't know what I'm talking about and, you know, you're blowing smoke." So, I keep pushing and finally Leo agrees that I can put something together and get it in the race boat, in an engine, if I promise that I won't hurt the engine or that I won't blow up the engine.

Oh, I promised I wouldn't blow up the engine. I had no clue. But I thought that this was good enough to do. So, one of the things that the report didn't talk about was how do you control this stuff? How do you valve it? How do you turn it on? How do you turn it off. They had this gigantic lab and they could kinda mix it with the air and so forth. How do you do all that? And nitrous oxide is a little like propane, it's a liquid if you keep it under suitably high pressure. So, with nitrous oxide, if you can keep it contained in a container



Jim Larsen photo/Leo Vanden Berg collection

The top of the two nitrous oxide bottles can be seen in front of the engine.

at 750 psi, it's a liquid. If you release it, it flashes into a vapor and when it does it creates a very low temperature, when it does this stuff.

So anyway, I need to figure out valving. The reason you use nitrous oxide is there is about 20 percent oxygen. The limitation on a piston engine is, how much fuel can you stuff in the engine? That's why we put a supercharger on it, because you can stuff more air, which means you can stuff more oxygen, and oxygen and fuel is what you burn, so that's how you make your horsepower. Well, the supercharger has a limitation. You can only use so much with a supercharger. Nitrous oxide is almost double the oxygen content of air. So, if you can displace some of the air and put nitrous oxide in instead of air, you get more oxygen into the engine, which means you can put more fuel in, make more horsepower.

So, it's an oxygen carrier, is what it amounts to. And the nice thing about it is it's a nitrogen/oxygen molecule and it stays that way until it gets into the combustion chamber and gets heated up, and that's when it splits apart. So, it's not like squirting pure oxygen in front of the engine. That was also tried by NACA and they blew up a whole lot of superchargers and engines and said, "This is really a bad idea."

Well, at that time the only use for nitrous oxide was as an anesthetic, typically used by dentists. So, I go to the local supplier, welding shop, who supplies this stuff and I want to buy some nitrous oxide. The first question is, "Where's your prescription?" Huh? So, after much discussion and finally convincing him that we're not going to breathe it, we're putting it in a motor, "Really?" They finally sell us some. It comes in a cylinder that's like a welding cylinder, yay big around, this tall [gestures] and weighs about 250 pounds. Well, that obviously won't work in a boat.

I had to find some high-pressure, lightweight tanks and I asked these guys, "Can you put the nitrous in these?"

"Oh, no, we don't do that. That's your problem." I had to figure out how to transfer it, get bottles, get a valve to turn the nitrous on and off. How do you meter it? I mean, how do you make sure you're getting the right amount in? which takes some experimenting with hole sizes in lines and stuff like that. And also you have to add extra fuel, so how do you do that? I had to figure out all that kind of stuff, put this whole mess together and install it in the boat. Now, it turned out that at the same time I was doing this, Bernie Van Cleave was doing a similar thing at the *Exide*. I didn't know he was doing it, and he didn't know I was doing it.

Did you happen to find out later how he learned of that?

One of the things I heard was Mira Slovak was connected with the *Exide* people at the time and he heard some kind of rumble from when he was in Europe that the Germans had done something with this stuff called nitrous oxide during World War II. Bernie Van Cleave worked for one of the welding supply outfits and that's where you get this stuff. The people that handle acetylene and oxygen and nitrogen in bottles and all that, those are the people who also have nitrous oxide, so he had access to those kinds of people.

There was also a rumble, I heard a rumor but I've never been able to back it up, that there was one of the limited boats in Spokane that maybe tried this. Whether they were successful or not,

Kirk Johnson

Some of the *Bardahl* team's Rolls-Royce Merlin engines.

I don't know. But the part about Mira Slovak telling him about this stuff being used by the Germans, I think that's valid. So, it turned out we were doing it at about the same time. I didn't know what Bernie was doing, he didn't know what we were doing.

We actually tested the stuff but didn't run it the next season. The tests didn't work real well. Between building engines and going to school, I didn't have enough time to sort this thing out. What happened is, we were running out of Sand Point and Ron loved to run way up the lake to Kenmore. You could almost not see him anymore he was so far up, and then he'd come runnin' back down. We ran the boat a couple of times and then came time to test the nitrous system. So, send him out with the stuff turned on and ready to go.

He goes way up the lake so far you could barely see him and hear him, and as he's coming back the boat's looking pretty good, sounding pretty good and then this huge plume of black smoke comes out of the exhaust stack and shortly after that you could hear it and it sounds terrible. And it was, "Oh, told you that crap wouldn't work." [Laughter]

Well, he comes back in and Ron reports, "The first time I pushed the button it laid me back in the seat and the boat jumped. The next time I pushed the button it looked like I was burning soft coal and the motor was just absolutely unhappy. I tried it two or three times and each time, it did that. If you can figure out what it did the first time, that's really good."

So, okay, it worked once, and it didn't work several other times. What it turned out was—and it took a while to figure this one out—the valve that I was using is called a piloting valve, so it's got some internal parts. When the nitrous was going through, when it went to shut off, as it was shutting off, instead of pouring liquid all the way into the engine, it changed from liquid to gas at the valve, got really cold and froze the valve. The internals of the valve froze. So, the next time he pushed it, the nitrous didn't turn on but the fuel did, so it got a bunch of extra fuel in the engine but no oxygen to take care of it. That's why it looked terrible, didn't run very well.

Hydroplane and Raceboat Museum

Black smoke erupted from the exhaust stacks of both *Miss Bardahl* and *Miss Exide* when their drivers gave the engines a shot of nitrous oxide for quick acceleration.

So okay, we ran, we actually tested it. The next season we didn't run it because I didn't understand what was going on. That following winter I had some time to try and chase down what was going on. Figured out what was going on with the valve and now needed to find a valve that wouldn't have these problems.

So, this is about the winter of '63-'64?

Yeah. So, I went to Spencer Aircraft and talked to one of their guys who I thought was really sharp, guy by the name of George Wolf. "George, I need a valve and I'm gonna say it needs to be kind of like a guillotine, that when it's open you can look all the way through it and you can see that there are no restrictions, nothing going on, and when it closes I want something that goes 'chawhango' and just chops this thing off clean." And yeah, he found something. It was an industrial, hydraulic valve that did that. And that valve was used through the *Budweiser* Griffon era and everything. And it works, it's great. It's kind of big and heavy because it's an industrial valve, but it really works well.

So, once we got that sorted out, then the valving problem went away. That's when we could start using it the following season. One of the things, I was concerned because I promised I wouldn't blow up an engine. I built a timer so that when the driver pushed the button, in 10 seconds it would turn the nitrous off. So, you only had 10 seconds-worth of it—the idea being, hopefully in 10 seconds, you don't blow up the engine.

When I told Ron about that he said, "Oh, that's no problem. I'll just get off it and put it right back on."

And I said, "Naw, I think I'm a step ahead of you. The timer actually has two functions. One is at 10 seconds it'll turn off, but the other thing is it pays attention to how long you push the button. It will not re-set until it uses up that time. So, if you hold it for 10 seconds, there's 10 seconds where it won't do anything, whereas if you hold it for five seconds and get off it, it won't turn back on for five seconds." So, what I was doing is, I was going to give the engine a little bit of breathing room.

So, I put this timer in there and he was just livid. "You can't do that!"

I said, "Well, it's gonna be that way because we don't want to blow up anything right now, because we don't know." And we were putting in a fair amount more than NACA had tested. We were kind of out in the unknown region. After we ran the stuff for a bit and found the motor was okay, we raced with it, we tore some engines down, we didn't see any problems with the engine whatsoever. We said, "Okay, timer goes away."

We eventually took the timer out of the circuit. But that was the initial safety feature on the thing. That system survived and was used on the *Pay 'n Pak* boats, the Winged Wonder, it was sold to several other boats, Heerensperger bought a system for the *Eagle* from me. When I worked on the Griffon *Budweiser* boat, we put it on the *Budweiser* Griffon boat, that same essential system on the thing.

The bottles that we used on the *Bardahl* were about so big around and so tall [gestures]. We had two of them. The one in the *Exide* was very small bottles and I don't know how many of those they had, but we paid attention. We didn't see them changing them very often. On the *Bardahl*, we would change these bottles after a heat. So, I don't know how successful that system was for the *Exide*. It did work, I don't know whether they made as much horsepower as we did, but I'm not aware of it being used on anything else later.

The one that we developed on the *Bardahl*, it survived and worked on a whole lot of other boats, and also some racing airplanes. That's kind of the history of it. There have been a lot of rumors about who stole what from whom. I didn't know Bernie was doing it and he didn't know we were doing it. Both of us, once we started running it, kind of kept it covered up and didn't talk about it very much.

Billy Schumacher said when *Miss Madison* won the Gold Cup in 1971, they were running nitrous on their Allison.

I think they were. It would work on both an Allison and the Merlin, you just needed to get the right amount of fuel to go with the right amount of nitrous on the thing. The movie, *Madison*, has a big deal about the nitrous on it. They have a picture of somebody with a drill about the size of my finger opening up the nitrous thing. Well, the hole for metering the nitrous is about that big [gestures].

A quarter inch, or not even.

Eighth of an inch maybe, because you're dealing with a liquid that's 750 psi, so a small hole, you'll still get a lot of it. I saw that in the movie and said, "Nah, I don't think so."

There were a few little liberties in that movie.

Yeah, they probably did. If you get somebody who's got an engineering background and dig into what it is, it's not that complicated of a problem. But you kind of have to have an idea of how much to put in and how much extra fuel and those kinds of things, because you can blow things up if you don't do it properly.

On a different topic, Ed Karelsen once mentioned that he had seen a photo of Ron Musson in the cockpit of the cabover *Bardahl*, in the shop, and Karelsen said in the photo Ron looked rather scared, like he wasn't sure that was the right arrangement. Did he ever talk about that, or say he would rather be behind the engine?

Not really, other than the boat had significant problems. The boat did not handle well, and it was very, very definitely tail heavy. When we first put it together and ran it initially, it was obvious that the thing was, well… First of all the boat weighed about 8,000 pounds, which is a thousand pounds over what the previous boat was. It was a bigger boat and when we ran it, it was obvious that the thing was really heavy in the tail end.

So, we started moving stuff forward. We moved the oil tank forward. We moved batteries up in front of the cockpit. We moved a whole bunch of nitrous bottles up in front of the cockpit. Probably not the best thing to do, but that was the only thing. It was obvious that boat was going to eat up a lot of motors, because it took a lot of horsepower to push it. Its handling wasn't very good and I know Ron was, if anything, I think he was uncomfortable that this thing wasn't a real good race boat.

Bob Carver Photos

The ill-fated new cabover *Miss Bardahl* in the team's shop before the 1966 season. The boat was destroyed during an accident on the Potomac River in Washington, D.C., that killed driver Ron Musson.

Hydroplane and Raceboat Museum

Dixon Smith on the bow of the cabover *Miss Bardahl*.

Ah, yeah.

I never heard him say he was afraid of the boat. The only thing I remember is, this thing is kind of a pig and it's going to have to work really hard to win races. We had some pretty stout motors at the time that we developed and my feeling was we're gonna probably eat up everything that we have in the motor department if we were successful.

The accident, the propeller broke a blade off and I don't know whether the blade breaking off caused the back end to pitch up and the front end to go down or whether just, because... How can I explain this? If you take an Unlimited prop and you submerge it all the way, the thrust line is up the shaft. If you're running as a three-pointer where only the bottom half of the propeller is in the water, the thrust line is more straight ahead, because of the way the blades are put on the propeller, the rake.

Was this a two-blade prop?

This was a three-bladed one, but either two- or three-bladed, you get exactly the same thing, so if a boat goes into a corner and can't carry the tail because it's too heavy in the back end and the prop drops in the water, when it drops in the water the thrust line changes from this to this [gestures] and it tends to pop the back end back out once you get a little bit more horsepower on the thing. Jim Lucero was really, really good at taking videos of boats and analyzing why boats mishandled. I helped a lot on that later on and we could see a boat that, partway down the straightaway, is doing one of these [gestures].

Okay, that team is, "Oh, that thing is light in the front end because it's trying to fly." Well, if you back up and you look at the videos of the thing, as it's coming out of the corner, it drops the tail because it can't carry it because it's too heavy or the driver gets off it or something like that. It drops the tail. When the tail drops, shortly after that the back end pops up 'cause the thrust line changes and the boat does one of these [gestures] and then it does one of these, then it does...

Nose goes up and down.

When you see it part-way down the straightaway lookin' like this, everybody says well, that thing is light in the nose, it's gonna fly. If you back up, you'll see the problem started in the corner when the back end dropped and it starts doing porpoising.

Okay, if you look very closely at last year's [2022] Madison race when Strong's boat got upside-down—when it finally does this, if you back up about a third of the straightaway, you'll see that boat starting to do this. The problem started way back then, and whether the driver got out of sync with the canard or whatever was going on, it turned out on that boat the canard linkage is such that the canard could flop around a lot. When I look at the videos, I mean, that problem didn't happen here, it happened way back there when it started, and it got progressively worse.

So, with the *Bardahl* cabover, we broke the three-blade prop, spit a blade off, and it tore up the shaft and ripped the rear strut out and all that kind of stuff. Whether that caused the accident or whether in the corner it dropped the tail end and started doing this and then the prop coming in and out of the water doing this, I don't know.

Billy Schumacher said that he tested it once and it had a handling problem in the corners that he discovered when he drove *Pride of Pay 'N Pak*, when he spun out in Miami. Something didn't turn right, it didn't hook up right in the corners. He thought the *Bardahl* did the same thing.

Pay 'N Pak, what happened when he lost it in Miami, is the steering basically came disconnected from the rudder.

Oh, okay.

There's a rudder post and then there's a pitman arm that comes out with a push-pull rod. Okay, there was a key there, and the key sheared. That's what happened on that and the reason the key sheared is, Ron Jones built all that stuff, and the key was built out of some really shitty material, and it wasn't really well fit, and the key sheared so then the rudder became disconnected from the steering, and that's when he did the loop and it spit him out.

I was unaware that he said anything about the cabover handling. I don't remember Ron talking about the handling in the corner other than it dropping the tail. And back then we didn't take good videos of it, which would have been very helpful to see what was going on. So, I don't know. Really tragic and so forth, but, you know, what actually caused the nosedive, maybe it was the prop that broke and just pitched the back end up, maybe it was coming around the corner and started doing this kind of stuff, I don't know. ❖

Next month, in part two, Dixon Smith talks about Tahoe Miss, the Karelsen Miss Bardahl, his impression of some drivers with whom he worked, and some of his non-racing employment.

FROM THE UNJ VAULT:

A brief history of the Harmsworth Trophy

The following story first appeared in the March 1981 issue of the *Unlimited NewsJournal*.

BY BOB SENIOR

In 1903, English newspaper publisher Sir Alfred Harmsworth organized an international motorboat race called the British International Trophy that was held off Queenstown, Ireland. The event would become more commonly known as the Harmsworth Trophy and would become one of powerboat racing's most prestigious awards. Preceding the APBA's Gold Cup by one year, it was also the oldest trophy for which unlimited hydroplanes competed through much of the 20th century.

In effect, the Harmsworth was truly a race between nations. According to the rules, the boats, motors, and all of the equipment had to originate from the country the boat represented, and the drivers had to be citizens of that country, as well.

Harmsworth contests could be held annually, but only when the holder of the trophy received a challenge from another nation. The contestants were Unlimited-class hydroplanes 40 feet long and under, and with no restriction as to size or kind of motor. The events were a test of endurance. Race distances were a minimum of 35 miles, but not more than 50 miles. The winner was the nation that won two of the three races scheduled.

The trophy itself—measuring 15 inches high, 31 inches long, 15 inches wide, and weighing 85 pounds—is an ugly bronze tableau on a wooden base that shows in relief two early displacement-type boats rounding a buoy in seas that would worry an ocean liner. It is believed to have cost $5,000. And for its possession, millions of dollars were spent collectively for recognition of world supremacy in motorboat racing.

One example was Henri Esdres, a wealthy department store owner from Paris, France, who was said to have spent over $100,000 to build *Excelsior-France* in 1925 to challenge the American holder, Gar Wood. His boat never left France, though. It was destroyed by fire during a trial run in Switzerland. But, in 1926, Esdres built another *Excelsior-France* at even greater expense, only to see her dive to the bottom of the Detroit River after a few minutes running time.

Public Domain

Gar Wood holds the Harmsworth Trophy

Gar Wood, of course, is the dramatic figure behind the Harmsworth story. He won it in England in 1920 and successfully defended it in 1921, '26, '28, '29, '30, '31, '32, and '33 with a series of *Miss America* boats numbered from I to X.

In 1930 Betty Carstairs of England entered two boats. *Es-*

telle V was designed and driven by Bert Hawker, and *Estelle IV* was driven by Miss Carstairs. After leading the field for half of the first race, *Estelle V's* gasoline tank opened up at the seams and dumped gallons of fuel into the cockpit, causing Hawker to score a sudden DNF. *Estelle IV* fared no better, hitting a log in the first race.

Kaye Don, a British daredevil who had been involved with land-speed-record automobiles, invaded America in 1931 with *Miss England II*, and won the initial race. Then came the incident that earned for Gar Wood the title of "The Grey Fox of Algonac." Wood drove his *Miss America IX* over the starting line ahead of the gun—many believed on purpose—and lured Don over with him, leaving brother George Wood in *Miss America VIII* as the only legal starter in the race. Don turned his boat over on a swell at the first turn, and the *Miss America* win streak continued.

The following year, Kaye Don appeared with a new *Miss England III*. To meet this new challenge, Wood then packaged four Packard engines and 6,500 horsepower into a new hull that he named *Miss America X*. Don and *Miss England III* finished behind Wood in the first race and failed to finish the second. The press world-wide gave Gar Wood headlines equal to Babe Ruth, Red Grange, or Jack Dempsey.

Hubert Scott-Paine crossed the Atlantic in 1933 with a tiny challenger, the 1,300-horsepower *Miss Britain III*. He at least finished two races going full out, but could not beat *Miss America X*.

After a 16-year lapse and a world war, Harmsworth racing resumed in 1949 when Ernest Wilson of Ingersoll, Ontario, issued a challenge to the United States's hold of the trophy with his *Miss Canada IV*, which was driven by his son, Harold Wilson. The rules permitted up to three boats to represent one nation's team, which meant the Wilsons were to face a U.S. team that consisted of Jack Schafer's *Such Crust*, driven by Dan Are-

Public Domain

Rosenfeld Collection/Mystic Seaport Museum

Hydroplane and Raceboat Museum

TOP: Dorothy Levitt is believed to have helped E. Campbell Muir drive an English boat named *Napier* to victory in the first Harmsworth Race, which was held in Queenstown, Ireland, in 1903. **MIDDLE:** During the 1931 Harmsworth in Detroit, Kaye Don drives *Miss England II* across the starting line ahead of Gar Wood in *Miss America IX*. Both started too early, but moments later *Miss England II* rolled over in the first turn and was done for the event, giving the victory to Wood and the United States. It was a turn that the British called a "Yankee Trick." **ABOVE:** Stanley Dollar pilots *Skip-A-Long* to victory in the 1949 Harmsworth held on the Detroit River.

Hydroplane and Raceboat Museum

Miss Supertest III entered only four races during its competitive career and won each of them. Among those victories were the 1959, 1960, and 1961 Harmsworth Trophy races with Bob Hayward driving. The Canadian entry was the last Unlimited-class hydroplane to win the trophy.

na; Horace Dodge's *My Sweetie*, driven by both Dodge and Bill Cantrell; and by *Skip-A-Long*, which was owned and driven by Stanley Dollar.

Such Crust won the first race and *Skip-A-Long* captured the second race, as *Miss Canada IV* scored a third and a fourth. That eliminated the Canadian challenger and preserved the U.S. win streak. A "run-off" race was then held between *Such Crust* and *Skip-A-Long* to determine who would hold the trophy, and Dollar was the winner.

The rule that restricted motors to those that originated in the country for which they competed allowed the debut in 1949 of the powerful Rolls-Royce Griffon in the *Miss Canada IV* and all subsequent Canadian Harmsworth competitors. The Rolls-Royce Merlin, though many had been built by Packard in the United States, was deemed of British design and was therefore not eligible to be used by the American hydroplanes. They instead had to use the Allison engine in Harmsworth contests.

In 1950, Stanley S. Sayres's *Slo-mo-shun IV* of Seattle climaxed a sensational year by defeating *Miss Canada IV* in two Harmsworth races. *Slo-mo* had earlier set a world record in the measured mile at over 160 mph and had won the Gold Cup with a smashing victory in Detroit. The U. S. team that year also included Jack Schafer's *Such Crust II*, driven by Dan Arena, and Horace Dodge's *My Sweetie*, driven by Wild Bill Cantrell.

In 1956, the Canadians again challenged the U.S. supremacy with a boat named *Miss Supertest II*, which was owned by James G. Thompson of Sarnia, Ontario, and driven by Bill Braden. The U. S. defended with William T. Waggoner's *Shanty I*, which was piloted by Col. Russ Schleeh.

Shanty I took the first race handily but did not finish the second. In the rubber match, *Shanty I* retained the U. S. grip on the Harmsworth Trophy by defeating *Miss Supertest II* by six mph.

Thompson challenged again in 1959 with his *Miss Supertest III*, which builder Les Staudacher constructed in Canada in order to comply with the rules. Powered by the mighty Griffon and ably driven by Bob Hayward, *Miss Supertest III* won the first race, lost to Bill Stead in William Waggoner's *Maverick* in the second match, then had a jubilant victory in the third race as *Miss Supertest III* averaged over 104 mph and *Maverick* did not finish.

At last, after 39 years in the United States, the Canadians had captured the "ugly bronze tableau."

In 1960, in the unfamiliar role of challenger, the U.S. entered a three-boat team—all powered by Allisons—to try to recapture the Harmsworth. The team consisted of Joe Schoenith's *Gale V*, driven by Bill Cantrell, and the two-boat team owned by Samuel DuPont: *Nitrogen*, driven by Norm Evans, and *Nitrogen Too*, driven by Ron Musson.

Miss Supertest III and driver Hayward retained the Harmsworth by winning two straight races. The *Gale V* gave a valiant battle in the first heat, but could not start the second race. *Miss Supertest*, meanwhile, set new lap, heat, and contest speed records, with a top lap of over 126 mph.

Owner-driver Chuck Thompson of Detroit challenged in 1961 with his *Miss Detroit*, but could not finish the initial race, and was defeated handily by *Miss Supertest III* in the second go-'round. The boat had entered only four races during its entire unlimited career, and amazingly won all of them. In its debut, *Miss Supertest III* survived a gun-jump in the final heat to win the race, then won three straight Harmsworth contests: 1959, 1960, and 1961.

Bob Hayward was killed during the 1961 Silver Cup while driving the older *Miss Supertest II*, and that brought an end to the team's involvement in hydro racing. Joe Schoenith submitted a challenge for a Harmsworth contest in 1964, but because there wasn't a Canadian boat to answer the challenge, there was no race. The Harmsworth Trophy was crated up and returned to the Harmsworth trustees in England.

In the late '70s, the Deed of Gift was altered and the Harmsworth was contested by offshore-class powerboats. The trophy was awarded to Englishman Mike Doxford in 1977, Australian Doug Bricker in 1978, English driver Derek Pobjoy in 1979, and American Bill Elswick in 1980. Will the Harmsworth ever return to the Unlimiteds, though? At this point in time, it does not seem likely that it will. ❖

AROUND THE CIRCUIT
Race Site News by Chris Tracy

The H1 Awards Banquet:
A new board, but it will be remembered for Bill Cahill's heartfelt comments.

The annual H1 Awards Banquet was held on January 6, 2024, at the posh Angel of the Wind Casino Resort, located about an hour north of Seattle. I've been to the annual banquet many times and generally pretty much know what to expect. I knew what major awards would be presented, but with the recent changes in the H1 Board of Directors, the establishment of HydroTown, and a new H1 chair, I was ready for some possible surprises, too.

Veteran hydro announcer/broadcaster, and newly appointed H1 board member, Brad Luce, was the master of ceremonies. Luce opened with a review of the season. It included some statistics from the past season, such as the record fast unlimited heat in Guntersville by Corey Peabody/*Beacon Plumbing* and the exceptionally fast qualification run by Dustin Echols/*Bucket List* at that event. Luce thanked the Guntersville race organization for the changed racecourse that resulted in such fast speeds. (The racecourse utilized in Guntersville is almost identical to the racecourse used in the early years at Pearl Harbor, Hawaii.)

Luce noted that live-stream viewing was up 40%, that there were new sponsors, improved drone utilization, and the involvement of HydroTown and Speed Sport broadcasts. And he talked about the bad weather in both Guntersville and Madison that resulted in not running a final heat at both sites. "And all led up to the Gold Cup in Seattle." He then noted that there was a "share of disagreements, like in a family." And then the annual Season in Review video was shown.

After the video, Luce introduced Mike Denslow, the new H1 chair. In the past, the chair's remarks were sometimes brief, as there are so many unknowns this far before next season. That appeared to be the case this year, too. Denslow introduced himself and relayed that he has a passion for the sport, and he hopes is to make unlimited hydroplane racing relevant nationally again. "The goal is to make the sport better and make you proud." His speech revealed no additional details, nor information about the meetings that took place earlier in the day.

As the program moved to presenting awards, Dustin Echols's daughter, Findley, joined Luce on stage to assist in giving out the trophies. The following awards were presented.

Crew of the Year—U-40, *Bucket List/Flav-R-Pac*. Owner Kelly Stocklin thanked his crew for the amazing work they did to repair the boat. He said he had three key crew and other crew members lined up and worked with one of them to get the work done. Stocklin remarked that in the middle of the large repair, he got a call from Steve Lamson, who said they had a sponsor for Tri-Cities and Seattle and the boat needed to be wrapped to race for the Washington races.

Crew Chief of the Year—Jeff Campbell, U-8 *Beacon Plumbing* and U-9 *Beacon Electric*. Jeff Campbell could not attend, and Jeff's brother and Strong Racing crew member, Mike Campbell, accepted the award for Jeff.

Owner of the Year—Shannon and Scott Raney, U-11 *Legend Yacht Transport*. Shannon accepted the award; Scott was not feeling well and was upstairs in the hotel room. Shannon thanked all of their sponsors, including their presenting sponsors the Old Cannery Furniture Warehouse and the Truss Company. She stressed how valuable all of their sponsors were to helping them race.

Race Site of the Year—Lake Guntersville Hydrofest in Alabama. Former race director, Wendy Zahn, accepted the award and exclaimed, "We love you guys. What you bring to Marshall County is amazing." She explained that her team "works hard and plays hard."

Sponsor of the Year—Beacon Plumbing. Luce mentioned that when done right, "the sponsor becomes part of the brand of hydroplane racing." Luce thanked Beacon Plumbing for bringing the Gold Cup to Seattle in 2023. (Seattle and Tri-Cities essentially made the same offer to present the 2023 Gold Cup. Beacon Plumbing agreed to additional financial support to bring the Gold Cup to Seattle; HomeStreet Bank was the sponsor of the race, and the HomeStreet Cup winner was also awarded the Gold Cup.)

Bill Cahill, owner of Beacon Plumbing, accepted the award and pretty much stole the show with his plain-spoken, heartfelt, comments. Cahill recalled that many years ago Steve Lamson contacted him and asked him if he'd like to sponsor a hydroplane. "I said, hell yes." Cahill then delivered a touching tribute, full of gratitude, to the drivers, owners, spon-

sors and events that he has been associated with. He singled out Darrell Strong, Fred Leland, Kelly Stocklin, Billy Schumacher, and Dave Villwock and described them as "more like family members." He ended by saying he was, "proud to be part of the sport."

Volunteer of the Year—Steve Compton. Luce described volunteers as the backbone of the H1 organization. Compton was visibly surprised to be acknowledged and remarked, "I can't tell you how much I love this sport."

Rookie of the Year—Bobby King, U-12, *Graham Trucking*. King was not present, but sent written comments that were read by Brad Luce. King said he was, "humbled and grateful." King noted that his dad won Rookie of the Year in 1994, the year he was born.

Most Improved Team—U-11, *Legend Yacht Transport*. Shannon Raney and crew member Brandon Crouse accepted the award. Raney looked at the other teams and said, "We are coming after you!" Raney also remarked, "We are so impressed with Jamie," in reference to their driver, Jamie Nilsen.

Outstanding Contribution to the Sport—Bill Cahill, Beacon Plumbing. This special award honored Bill Cahill's involvement in sport, his involvement in the Seattle market, and for his continuing support of local charities and community events. Cahill provided the funding to bring the Gold Cup to Seattle in 2023.

Luce described Bill Cahill's involvement with hydroplanes as, "sponsorship done correctly." Cahill used the opportunity to congratulate the two teams that he sponsors. "Our two drivers have guts like no others. They come out swinging." He also continued the comments he made earlier when he was awarded Sponsor of the Year and talked about how all in the sport are friends that support each other. He explained in one example. "When Beacon Plumbing was sponsoring the U-37, we were the enemy. That is until we needed help [after an accident] and then everyone was there to help." He also noted that the final heat in the HomeStreet Cup/Gold Cup in Seattle this past season was "the best final heat."

The final part of the program was presenting awards to teams and drivers that were earned in competition, by accumulating race and driver points throughout the season.

Third Place—U-40, *Bucket List/Flav-R-Pac*, driver Dustin Echols. The third-place finish in the 2023 season was the highest ever for the team. Owner Kelly Stocklin remarked, "Our world changed when we ran 171 mph in Guntersville. We surprised a few people." Stocklin went on to quip, "Mr. Strong, you beat us, but it took two boats to do so."

Second Place—U-9, *Beacon Plumbing*, driver Corey Peabody. Luce pointed out that *Beacon Plumbing* won 11 out of 14 heats it entered. Driver Corey Peabody noted that after the boat was damaged in 2022, the first thought was, "That boat is never coming back." Later, crew chief Jeff Campbell told Peabody that he could rebuild the boat and make it faster. Peabody told the audience that during the reconstruction, "We put together something pretty special…and it took 10- to 12-hour days." Looking toward the future, Peabody said that "second place sucks" and it was clear his eyes are on first place next season.

First Place—U-8, *Beacon Electric*, driver J. Michael Kelly. The team is also the Martini and Rossi Trophy Champion and J. Michael Kelly is also the 2023 H1 Unlimited Bill Muncey High Points Championship Driver. This is the first time that Kelly has earned the U-1 designation for his boat. Kelly thanked Darrell Strong and added, "Bill Cahill deserves this. People like Bill make this sport special."

He continued, "I never thought I'd win a national championship. I would not be here without my owner, sponsor, Corey [Peabody], and the entire team. It took me 20 years." He thanked his dad and family. And Kelly praised his crew chief Jeff Campbell. "He's on my ass all the time. He can help me, and I still have more to learn." He also thanked Mike Campbell. He ended his remarks by saying, "I hope one day I can race against my boys, and then I'm done."

Banquet Observations:

The banquet sold out very early, a first. About 125 people attended. My wife and I had a great time! The Bucket List team was as colorful (orange) as always. There was a whole table of children, made up of kids from team members. Bill Cahill's comments were thoughtful and he pretty much captivated the entire room, but I felt there were a few missed opportunities, too.

Goodman Real Estate driver Andrew Tate and *Miss HomeStreet* driver Dylan Runne both attended—but they, their sponsors, and the Miss Madison team were not acknowledged; it felt like a snub, but probably just an oversight.

I'd suggest when people accept an award, they should be introduced if they are not well known in the racing community, such as Wendy Zahn from Guntersville. While the Guntersville race site was well represented, I didn't see leaders from any other race site, and that is unusual.

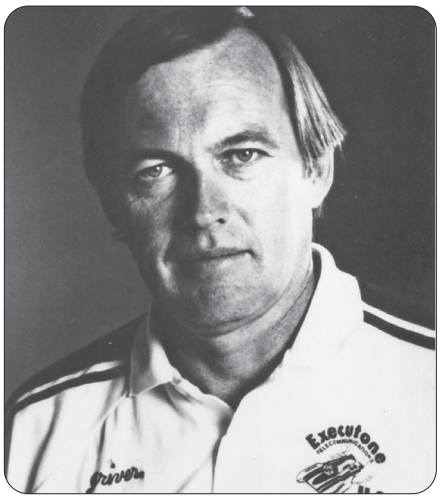
This could have been an opportunity to introduce the new H1 board members; to introduce Taryn Baze, who is working in H1 operations; and touch on the role of the newly hired South Carolina–based public relations firm. Charlie Grooms, who is thought to be instrumental in H1 changes, was not present. And, there was no hint of what to expect next year. ❖

Remembering George Johnson

We are sad to report the passing of George Johnson, who drove Unlimited hydroplanes during seven seasons. Born in Seattle and a graduate of Seattle Prep High School, Johnson was a commercial fisherman, the father of five children, and also an avid boat racer.

He died on December 26, 2023, just nine days short of his 87th birthday.

Johnson's first Unlimited ride came in 1981 aboard Bob Warner's U-44, but his big break came the following year when he joined Bill Wurster's team and handled the controls of three different *Executone* boats during three seasons. During that time he won a semi-feature event that was held in conjunction with the World's Championship in Houston and took second-place honors at the 1982 Columbia Cup in the Tri-Cities and at the 1984 APBA Gold Cup, also on the Columbia River in the Tri-Cities. He finished third in the 1984 national points standings.



Exeutone Publicity Photo

Johnson wrapped up his Unlimited career as the pilot of Bob Gilliam's *Domino's Pizza* in 1985, the *Oh Boy! Oberto* in 1986, and Fred Leland's *Miss Crab Legs* in 1988.

A celebration of Johnson's life will be held at the Ballard Elk's Lodge (6411 Seaview Ave. NW in Seattle) from 1 p.m. to 3 p.m. on Sunday, February 4. ❖

GEORGE JOHNSON'S DRIVING STATS

			RACE RESULTS					HEAT RESULTS						
YEAR	BOAT	HULL#	RACES	1st	2nd	3rd	DNQ	START	DNS	FINISH	1st	Pct.	Top 3	Pct.
1981	U-44	7221	1	0	0	0	0	3	0	3	0	0.000	3	1.000
1982	Executone (1st)	7495	4	0	1	1	0	8	3	6	3	0.500	6	1.000
	Executone (2nd)	8255	2	0	0	0	0	4	1	4	1	0.250	3	0.750
1983	Executone (1st)	7495	10	1	0	2	0	24	5	20	5	0.250	17	0.850
1984	Executone (3rd)	8408	10	0	1	3	0	23	2	19	1	0.053	17	0.895
1985	Domino's Pizza	7931	2	0	0	0	1	2	1	1	0	0.000	0	0.000
1986	Oh Boy! Oberto (5th)	7664	9	0	0	0	2	14	3	6	0	0.000	3	0.500
1988	Miss Crab Legs	8477	2	0	0	0	1	1	1	0	0	0.000	0	0.000
	TOTALS		40	1	2	6	4	79	16	59	10	0.169	49	0.831

Ken Nugent

George Johnson on his way to a second-place finish aboard *Executone* at the 1982 Columbia Cup in the Tri-Cities.

Ernie Lauber's Contribution

BY CRAIG FJARLIE

He was hardly a blip on the radar screen for most boat racing fans, such as those interested only in Unlimited hydroplanes. However, Ernie Lauber made a major contribution. He was born on February 21, 1924, and passed away on December 8, 2023. He owned inboard hydroplanes in the 145 class. His best boat was named *Li'l Rambler*. Lauber and his friend, Jack Clayton built it, and the driver was a young Chip Hanauer, who was making a move from outboards to inboards.

Lauber also was a shop teacher at Ingrahm High School in Seattle, and one of his students was Tad Dean. Lauber and Dean knew of each other's interest in hydroplanes and when Dean purchased the former *Breathless II* from Pete LaRock, he reached out to Lauber for help in recruiting a driver. "I have just the guy for you," Lauber told him, so he introduced Dean to Hanauer, and in 1976 Hanauer made his Unlimited driving debut in Dean's boat. It marked the beginning of a remarkable career for Hanauer.

Lauber and Hanauer remained friends, and during the last years of Lauber's life, Hanauer called or visited him almost daily. We all owe Ernie Lauber a debt of gratitude for his contribution to Unlimited hydroplane racing. Race in peace, Ernie, and thank you. ❖

HYDROFILE
Race Team News by Lon Erickson

Miss Madison Racing

According to team president Charlie Grooms in a *Madison Courier* story, the "2007 hull is available for purchase." The hull ran last season as the U-91 *Goodman Real Estate*. It started out as the *Oh Boy! Oberto*, then as *Miss HomeStreet*. The hull is the third winningest all-time with 25 race victories. Miss Madison, Inc., plans to race its 2018 hull this season as the U-91 *Goodman Real Estate* with Andrew Tate slated to drive.

Lon Erickson

The sport of hydroplane racing received some exposure in late January to promote the 2024 Guntersville Lake HydroFest and the 2024 Madison Regatta at the Discover Boating Louisville Boat, RV & Sportshow. On display within the booth all week was the *Miss Madison* display hull, a mockup T-55 turbine engine, and the GP 79 *Bad Influence*. Drivers Andrew Tate and Jeff Bernard were there on Saturday to sign autographs.

Guntersville Lake Hydrofest photo

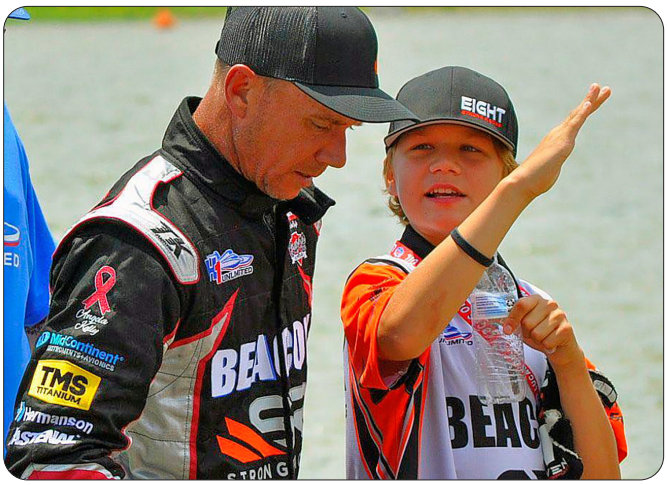
Goodman Racing

John Goodman's Kelowna, BC, winning 1967 *Miss Budweiser* is in the Miss Madison team's Tukwila shop being prepped by Michael Hanson, Sandy Pearl, and the crew for vintage events in 2024. Originally built in 1962 as the *Notre Dame*, the boat was retired from competition after a 1963 fire in testing on Lake Washington. Owner Shirley Mendelson McDonald then had the *Notre Dame* converted to a wider-cockpit pleasure boat that she named *Shu Shu*. Bernie Little purchased the hull in 1967, it became the stand-in fifth *Miss Budweiser*, then ran under a variety of names until 1980. Meticulously restored by Roger Newton, Larry Fuller, and many Hydroplane and Raceboat Museum volunteers, the hull took to the water again in 1999, played a major role in the filming of the movie *Madison* and appeared at a few vintage events. Don't be surprised if you see Andrew Tate in the cockpit at a 2024 vintage event.

Photos from Miss Madison Racing

Strong Racing

Congratulations to the father/son duo of J. Michael Kelly and his son Carson on entering the APBA Hall of Champions for 2023. Both were inducted at the APBA National Meeting in Orlando, Florida, on January 27. JMK is entering into the Unlimited and inboard classes while Carson enters into the professional racing outboard class.



Strong Racing

Bucket List Racing

The U-40 *Bucket List Racing* engines are now at Whispering Turbines for a "Montana spa treatment." They'll be ready for the 2024 H1 Unlimited season.

Dustin Echols

MY $0.02 WORTH

Editorial Comment by Andy Muntz

Few fan bases are as passionate about their sport as those who follow unlimited hydroplane racing. A review of the sites on Facebook that are devoted to the topic present a wide view of different thoughts intended to make the sport better.

In this column, I've offered many ideas over the years that I hoped would spark a note of interest among the readers of this publication or enlighten some of you about what changes might be practical for the sport and what might not make sense. But, I'm far from the only person with such ideas. There are as many viewpoints about the direction of this sport as there are participants and fans willing to offer an opinion.

With that in mind, I'd like to open a dialogue where some of those new concepts can be explored. Please contact me if you have something to contribute.

We'll begin with some thoughts from a person I've called a friend for more than four decades. He and I spent most of the 1980s trying to make a success of a publication called *Boatracing Magazine*—he as the publisher and me as editor in chief. You also might recognize his last name, being the eldest child of one of the sport's all-time greatest champions. Yet, he was a boat racer in his own right, driving both Unlimiteds and Unlimited Lights for many years while also working to market the sport of boat racing.

Based on those credentials, Wil Muncey is willing to offer some of his insights for how to improve the sport of unlimited hydroplane racing:

BY WIL MUNCEY

Simply put, for this sport to grow on virtually every level, it has to be INTERESTING to new media, fans and sponsors. An idea that I have to make this a reality, I suggest that H1 Unlimited be integrated with the smaller classes, such as the Grand Prixs, on a racecourse of two miles or less.

The key but subtle difference is in three parts:

1) Move the starting line. Put the starting line 500 feet BEFORE the entrance pin of the first corner. The new starting line would tend to negate the top-end advantage of the turbines and lend a small advantage to the reciprocating teams.

Since there is roughly a six-second disparity in time of turning radius between lane one and lane eight, this would postpone the seven-boat-length overlap until a later lap for the hulls on the outside to move in, creating much more balanced competition. It may also negate

the opportunity for larger hulls to create rougher water for the smaller hulls.

2) Assign lanes. Designate lane assignments by the elapsed time in the preceding heat. Lane assignment would be the closest to parity if the slower boats are toward the inside lanes and the referees enforced those assignments through the first corner. This would disable the faster hulls from closing the door on the field through the first corner by creating holes, and it would enable reciprocating hulls to use their relatively quicker acceleration to put on a more interesting show.

The potential of sandbagging would be self-correcting in that should a turbine boat get the inside at the start, they will still have to hold their lane in lane one with overhead scrutiny via drone. In any event, should they turn in a faster speed, they will be relegated to an outside lane in subsequent heats.

3) Fewer than three laps at referee's discretion. Each heat would be reduced to two or three laps at the referee's discretion. The lesser number of laps will keep the field closer together until the finish line, creating a much more interesting show.

Making these changes would address the common critique of race sites that there is "too small a boat count." The effort on behalf of H1 to create parity with reciprocating boats has GOT to be sincere and long term or neither the media, contestants, sponsors nor fans are going to buy it.

For media and fans to take the sport seriously again, it has to be honestly interesting. Not some lame effort on behalf of H1 pretending to try and bring thunder back to the sport with one token reciprocating program that isn't much more than a lame effort to fool the media into thinking there are changes coming to make it interesting.

A couple events with honestly close competition should attract many more contestants and legitimately turn the heads of media at least for a revisit. If the renewed media interest is properly managed, the sponsors will come by virtue of the increased value in cost per impression.

This may actually enhance the opposite problem of having too many boats and require eliminations. I know, a nice problem for a change.

The last time an idea like this was considered were the days of Steve Woomer. After a few events to demonstrate the new face of marine motorsports, it may be possible to ask more funding from the race sites. The smaller racecourses will open the door to new race sites and new funding in addition to addressing a smaller and more manageable footprint.

Bottom line:

1. It would be a much more interesting sport to fans, media, and sponsors.

2. Access to many, many more sponsors.

3. Create much easier access to new teams and a substantial reduction in start-up costs.

4. Provides MUCH more access to a healthy boat count across North America.

5. Is much more understandable to new fans as far as power plants go.

6. A smaller course may be safer and more insurable with lesser distance and lower speeds.

7 A smaller course would make new venues and broader marketability. Examples might include Miami; Phoenix; Polson; Washington, D.C.; and even New York harbor. ❖

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Letters are welcome, but may be edited for clarity and space.
Send comments to: ajmuntz@icloud.com

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2 p.m. on Sunday, February 18, 2024
Bellevue Public Library, Room 3, 1111 110th Ave. NE, Bellevue, WA 98004