

ISSUE 53

THE DEVICE

MAR 2021

DISPRO OWNERS

ASSOCIATION NEWSLETTER

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our website at

www.disproboats.ca



Photo: Tom Wood

Brad Jackson and Kerry Harmon installing the electric motor on Brad Jackson's project.



President's Letter • March 2021

Dear Members,

Has your Dippy been the recipient of exceptional treatment? Apart from regular engine maintenance and varnish touch-ups, have you done something special to “baby” your boat?

For us, it all started after Kerry spent 3 winters restoring and refinishing Ts Delight. Sitting on a trailer under a tarp in our yard was not going to cut it. So, a visit to the municipal building department, measuring side yard setbacks and consulting the contractor who originally built our garage, culminated in an addition, affectionately referred to as “The Annex”. Ts Delight rests there between outings protected from the elements. Another addition was to have Ts Delight fitted with a custom made top, especially useful for when we trailer on highways. For the future, perhaps upholstered cushions?

Those of us in the positions of Secretary, Vice President, Past President and President cycle through the Executive, but our Treasurer, Membership Secretary, Newsletter Editor, Website Coordinator, Archivist and Historian provide ongoing stability. Sheila Burke, Barb Dickson, Paul Jenner, Gary Campaigne, Mary Storey, and Paul Dodington, thank you for your valuable expertise and dedication. Welcome to incoming Secretary Jim Butler. Thank you to Ian Gibson who moves up the ranks and to outgoing PP Ann Verth for her guidance. In the spirit of our commitment to sustainability, we are recycling our incoming Presidents Robert Clipsham and Ian Dickson, who both previously served in this position and are thankfully returning. Please consider joining the fun loving Executive team.

With this letter, we bid adieu as President. What an honour it has been to serve you and promote our special boats. We look forward to actively participating and contributing in every possible way.

Sincerely, ***Karen Boyer & Kerry Harmon***

2021 AGM Sunday, April 25 at 3:00 p.m.

Given the circumstances with the pandemic, we won't be able to meet in person for the 2021 AGM. Like many things over the past 12 months, we will be holding the 2021 AGM virtually by hosting a 'Zoom' meeting. For those of you new to this technology, we will do our best to provide you with help on how to participate. A 'Zoom' meeting will allow participants to either use video and audio with a computer, or alternatively, participate by audio using a telephone.

There will be a practice session prior to the AGM so everyone can rehearse logging in to the meeting. Mark these dates on your calendar:

AGM – Sunday April 25th at 3pm

Zoom Practice Session – Sunday 11th at 3pm.

Should you wish to participate in the Zoom Practice Session and/or the 2021 AGM you will need to contact Jim Butler to receive the instructions on how to join.

Jim Butler

Email: *Butler.jim@sympatico.ca* or Phone: 289-684-3417

We hope to “see” you.



Sadly we announce the passing of long time DOA member **Ian Tucker** on July 5th, 2020. On those too few occasions when he and Gale made the long trip from Kenora to attend the Annual Regatta, we were all entertained by his friendly nature and his love of life. He was a much loved teacher and also an accomplished singer and dancer. Our sincere condolences to Gale and family.

Paul Jenner

We also learned of the passing of **Nancy Bone**. We extend our condolences to Bruce and family.

A long time member of the Dispro group **Barbara Moffat** has left the fleet on February 19, 2021 and is now travelling the heavenly seas. Her captain Dave Moffat will miss his crew mate who for years were seen together in *Little Miss*. Our condolences to the Moffat family.

Nancy Howchin

Dispro Blues?

(aka... Nothing can go wrong, can go wrong, can go wrong.)

After toying with the idea of Dispro ownership for several years, I succumbed to the fantasy and headed out last spring to the Niagara River with my long-suffering wife Lynn. This boat would be our third "woody". Some people never learn. We had downsized to a Dippy, partly from environmental guilt. Our last woody was a 120 hp. gas guzzler.

This newest acquisition, a 1956 Greavette checked a lot of boxes. Both the boat and its two cylinder Coventry Victor engine had been restored not that many years before. It was very reasonably priced. The sale included a functional, fitted trailer, a tired but repairable cover and beautiful, tufted, racing-green upholstery. We were hooked.

Unfortunately, a water test was not possible due to Covid restrictions. Had that been possible, I might not have suffered the sudden hair loss that accompanied our first three post purchase water excursions. In any case, our pre purchase inspection revealed only relatively minor imperfections. We came home happy. I set to work in our double car garage, prepping "Hope" for two new coats of Epiphanes varnish. (Note to self: consider a second mortgage when purchasing more than a litre of Epiphanes).

My garage varnish station was hardly ideal, due to inadequate lighting and of course, dust. As well as thinning the first coat (after wet sanding) I was persuaded to purchase Japan Dryer, a product that hastens the drying process, significantly foiling the efforts of nasty little particles to attack the finish. This certainly made an appreciable difference in the lustre of the final coat.

Launch day arrived. I rowed the boat several hundred metres down the Muskoka River to our dock, not wanting to risk catastrophe on foreign soil! I had been advised not to run the engine while the prop and shaft were raised. We pushed off and I fired up the engine, apparently not far enough from the dock, as one of the beautiful period spoon blade oars jammed itself on a dock ladder rung. To say we came to a sudden, unexpected dead stop is putting it mildly. In the process, one of our port side lapstrake planks took on a new colour of its own, "scratch burgundy".

continued ...



Our second attempt was no less unique. I had presumed that the throttle would produce less revolutions when the slide lever was pushed into the dashboard. WRONG! With a heart already pounding from our first episode, I flipped the ignition switch. We took off like a rocket. “KILL IT” I yelled to the first mate, but not before we had shot across the river and embedded ourselves into the opposite bank, (luckily, a sandy one). By this time, I was a bit of a nervous wreck. “What have we done?” I wondered, using the royal “we”.

Hope springs eternal. The next day we took off once again with some trepidation, but hopeful. Alas, a smooth outing was not to be. Five minutes into our voyage, the smell of burning oil perfumed our normally pine scented surroundings. “What the H****?? We killed the engine and rowed home. Luckily, Paul Dodington, Muskoka’s very own dippy doctor had an easy, quick fix for us. Our Dippy had not been in the water for several years and the water pump gears had “dried out”. “Squirt motor oil into the gears”, Paul instructed. Sure enough, this simple fix worked like a charm.

After these three episodes, plus a fourth in which I mistakenly aborted a tour with guests as I had forgotten to disengage the “Kill” switch, we wondered if we would ever be able to enjoy a carefree trip. Fall was setting in with annoying haste. Fortunately, our luck turned. After several more successful short outings, our last boat tour around Mary Lake went flawlessly, despite some heavy water. Our confidence renewed, we winterized “Hope” where she now languishes in a neighbour’s barn, awaiting next summer’s adventures!

Rob Attfield

The Miserable Autumn Cruise

With Saturday morning’s weather registering a balmy 46° Fahrenheit, a south-east wind and low dark clouds, six dippies and their owners and guests ventured out to make up for the lost official annual September tour. Unfortunately, the proponent of this extravagant cruise had to turn back from the start as many mechanical problems befell their lovely boat. I hear they’ll have them all fixed by Christmas.

The cruise was “around the block”—the usual trek around Lake Joe, through the Joe River into Lake Rosseau and back to Lake Joe. Some peeled off to return to points on Rosseau while others made the hike into Joe. No matter what, everyone completed his own circuit—unlike some dippy timers I could mention!

The nice lunch stop was Beth Guy’s 1890s portable boathouse! (It was moved once before, about 1910). With permission, we docked there for lunch. Slated for destruction, Beth rescued her great-grandfather’s boathouse last summer and at great personal expense, had it transported intact across the lake to her Black Forest Island property. Complete with the most charming interior staircase, it represents what can be accomplished if people want to keep nice things. The Joe River people should have followed her example. Read on.

So far the cruise was turning out nice until....

Money doesn’t care where it lands and Muskoka’s the proof. As we entered the once beautiful Joe River, it was so sad and upsetting to see the wanton destruction of Muskoka’s formerly beautiful shoreline over the recent years. Uncontrolled development with positively unattractive, monster, cookie-cutter boathouses in narrow waterways, jammed full of plastic, proliferates. The once tranquil Joe River is now a cheap-looking suburban development on the waterfront, resembling nothing from just a couple years ago. It’s too bad the dippies go so slow as we had to suffer longer through this eye-sore environment than we would have liked. Thanks to a few Americans who are trying their best to keep the place from being ruined, the upper parts of the lake and islands are





1924 meets 1898. Lunch stop at Beth's ancient boathouse.

still pristine with natural shorelines. Of course, they're punished with usurious tax bills, but we all benefit.

Once in to Lake Rosseau, the rain started to make the event complete. Thankfully, there were not so many boats filling the Port Sandfield cut so we could get through there all right to head home. All in all, it was a pleasant late-summer dippy cruise that felt more like November. Of course, the following weekend was in the mid 70s. Nobody busted nuthin', so it kind of removes one M from UUMMT.

Paul Gockel

My Pandemic Dispro

This pandemic has given us lots of time for reflection but also time to tackle the things that have been on the back burner for awhile. Projects that maybe we otherwise may not have attempted or just put off to a later date.

I've always wanted to build a Disappearing Propeller Boat and I knew that it would present a real challenge, but with time on my hands, it was a case of now or never.

I had previously prepared an accurate measured drawing of my existing Dispro with thoughts of one day building another. As for the actual construction, I was quite confident because many years ago I had taken some wooden boatbuilding courses and had participated in building a 14 foot lapstrake rowing dinghy.

Adequate workshop space is always a concern so I had to make sure I would be able to accommodate the project and also have enough room to move around it. I had all the building materials on hand so I was eager to begin the project.

I prepared the mold to ensure that the boat would be true to form and after a considerable amount of time, including some false starts, the planking was completed and the unmistakable shape of a Dispro hull was now there before me.

The planked hull was then carefully taken off the mold and the bending in of all those ribs began. It was a bit of a tedious job, but I took great care and the results again were to my satisfaction.

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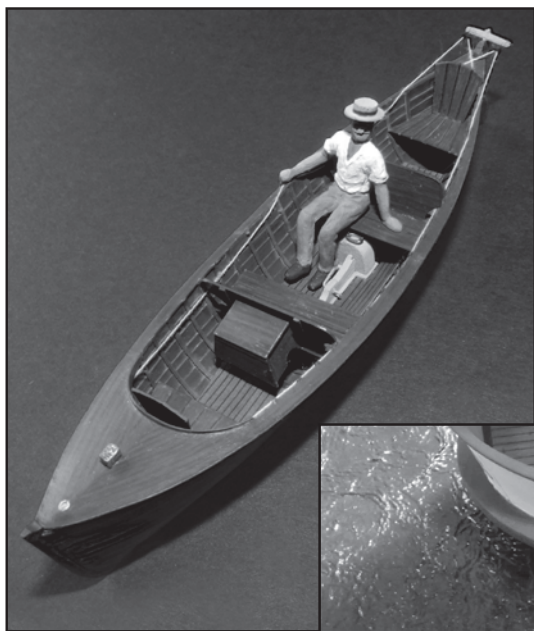


The all important device was precisely located in its correct position. The splashboards, the foredeck and the small rear deck were fabricated and installed. The dashboard, seats, seatbacks and engine cover were fitted and the rudder, shaped from a single plank, was hung at the stern. There were several finishing steps involved but the final coat of varnish was at last applied.

Oh, by the way, I forgot to tell you; this is a 1:48 scale model and it's only 4-1/2" long.

The workshop space was my desk and the materials I had on hand were things like cardstock, wood veneer, very fine strip wood, white glue and acrylic paint. I'm afraid the small size of the model didn't make much of a dent in my model building supplies.

There is no motor as such, just an bit of a flywheel showing beneath the engine cover but there is a device, complete with handle and aquascope. However, no hole was needed to be cut through the hull. I also opted for the 8 inch rib spacing just to save my eyes and not go completely crazy. Floorboards were included and also a representation of the brass control panel, Dispro light and fuel filler cap at the bow. I also added the steering rope, in white thread of course.



To complete the model I really had to have someone in control of this little craft so I created a proud dippy owner decked out in his best white shirt and straw boater.

The model Dispro was made to accompany my model of the steamer Iroquois which was the subject of an article in the March 2020 issue of The Device. It gives a nice sense of scale, motoring alongside the Iroquois.

Paul Jenner



Photos: Paul Jenner



I like to think that perhaps a scene like this really did occur back in the day, with a friendly exchange of pleasantries between the Dispro owner and the deckhand on the Iroquois. The steering rope and Dispro light were added after this photo was taken.



Happy Thomson: The Ultimate Volunteer



Photo: Mary Storey

When you do a volunteer job for 35 years, you must love the job! Happy Thomson was the Membership Secretary of the Dispro Owners Association for 35 years until 2015. When asked why she liked the job and continuing to do the same thing for so long, she says "It's all about the people". She enjoyed the jokes, the laughter, the tales and of course, the boats.

Happy and her husband John have been members of the club since the first meeting in 1979. Having owned two Dispros, they have been very active in many aspects of the club. Her role as membership secretary all started when the late Dr. Jim Smith who was the first secretary-treasurer, found keeping track of the money and taking minutes at the meetings was enough work without the money and information coming in from

members. At first Happy assisted Irene Fossey with the membership lists and after a couple of years did the complete job of Membership Secretary.

Happy is proud of the fact that while she held this position, she was able, with the help of others, to put all the records on computer. This involved having a database written and creating the Membership Directory electronically from this database, creating labels for mailing and printing membership forms. Many of these procedures are still in place today.

The other item that pleases Happy is that, with the help of her brother, she started the coveted Varnish Awards for Regatta events. Her brother worked for Benjamin Moore paints and told his sister that there were always extra varnish cans to be distributed for promotion. This tradition continues today but with Epiphanes as the donor of the varnish.

As Happy looks back over all those years, she comments that two tasks were not her favourites. Reminding and reminding and reminding members to pay their yearly membership fees and obtaining the president's message and other reports for the newsletter (known as the Device today) in a timely fashion.

One must understand that for many of the years that Happy was Membership Secretary of DOA, she also held the same position with Antique and Classic Boat Society – Toronto Chapter, a club three times the membership of DOA. With both memberships relying on Happy, it was a lot of paperwork, phone calls and bank deposits for her.

The Thomsons have very much enjoyed being part of the Dispro Owners Association. They find the members always helpful to others whose boats are not working properly or are lost on the lake or river.

Happy says she has always liked volunteering. It makes her feel that she is contributing. She says volunteering "keeps the mind going and gives her something to do". It is second nature in her family as her Father did considerable volunteer work.

Without people like Happy Thomson, the Dispro Owners Association would not be as successful as it is.

Mary Storey



Kingston Carburetor Float Arms *by Paul Gockel*

There is no more Byrne, Kingston & Co. carburetor makers in Kokomo, Indiana. Parts are hard to come by, but salvation is near. You can make your own! Everyone's all gaagaa over the new nitrophyl floats, as they should be, but what good is a new float if the arm and needle, which supports them are gone? I have three Kingston carbs, (as do some other dippy people), all of which are lacking their internal mechanism necessary to start and stop the flow of gasoline from the tank. Too much mindless monkeying and misguided human interface to bend arms has more than likely resulted in broken arms, which then got discarded with nothing to replace them. That's my story, anyway.

Ian Dickson told me many years ago that Bob Skinner was making new float arms. I gave Bob a call. He was a real treat to talk with as his immense knowledge and encouraging conversation was all I needed. He wasn't going to make any more arms, but sent me some of his castings and advice. What more could a guy ask? Let's get started. Bob's castings arrived in the mail. Holy crap, they're tiny. I borrowed a friend's Jacobs #33 chuck so I could hold the arms in the lathe to face the pivot hole. I could now centre drill it, and bore through with a 3/32" drill. Perfect! (A different batch of castings wouldn't be so easy.) I faced the other side with the arm mounted on a mandrel I had to make. Wow! It fits in the carburetor. Amazing! I machined all four remaining arms in a like manner.

Disaster #1: Due to bent, burred and random sized original pivot pins, nightmares would ensue as I pursued perfection on future arms. Nothing fit, nothing standard. This seems to be a recurring theme in carburetor construction. I found the same with the Reo's Holley. A lot of polishing pins was necessary, not so they'd look good at the boat show, but so the arm would not bind. No float of any material will overcome a binding float arm.



Photos: Paul Gockel

A newly machined float arm pivot hole.



I'm no model maker and these parts are extremely small. Off came my glasses so I could see. Next, I determined the threads of the retaining nut. They look like 1/4" x 32. I ordered the brass hex stock and taps to make these. While I was waiting for those things to arrive, I made a needle. More tiny stuff. An accurate dimensioned drawing of the original needle helped. Then I made needles from discarded Xerox machine feed rollers. Wonderful stuff; far better than hardware store steel. I ground a form tool to make the little ball in the middle, then kept machining the future needle until it was finished.

Machining a new steel needle. Note the ball formed in the middle of the shaft. The lathe's tool is 1/4" square so you'll have some idea how small the needle is. Note the different shaft diameters either side of the ball. It copies what was done in the factory. It serves no purpose in the proper functioning of the carburetor; rather, it's the manifestation of a faulty-made form tool. (tool not shown) I copied it.



Constant measuring is vital if the scrap bin is to remain empty. I made some needles out of brass and some out of steel. Since most carbs use steel needles, those are the ones I'll use.

The 1/4" brass hex stock arrived so making the tiny nuts was the next project. You'll need to machine 3/32" of material length down to 0.245" diameter for the threaded portion. I set up the lathe's gear train for 32 threads per inch and then with the power OFF, and using a ground 60° inclusive bit, machined the tiny threads by manually pulling the chuck around. To use power on such a tiny piece would have ruined it. (This was a trick the late Roy Davies taught me.) About six passes was all it took to complete a nut. I'd check it periodically with a broken float arm's female threaded bore to know when to stop. Then using a series of newly sharpened drill bits, I bored through the nut and counterbored one end with a ball mill to allow the needle to articulate once it was captive in the arm. This is important. It's a many-stepped and many-tooled operation to complete one nut. In fact, each component requires many different steps and tools to complete.

All this so far has been fairly straightforward machining. Nothing is really tricky except for its extremely small size. Now comes the hard part. (huh?!)



The project so far. A new brass needle, a new nut and the old broken float arm used as a thread gauge. Not only does it all fit, but once assembled, it all articulates in the arm as it should.

Continued next edition! See you next time.

Electric Dis-Pro Project

The Oxford English dictionary defines "Zeitgeist" as "the spirit of the times or a trend of thought or feeling in a period." This describes the atmosphere in certain parts of the Dis-Pro Owners' Association this year.

We currently have four members operating electrically powered, Dis-Pro inspired, boats. Two more are on the way. Brad Jackson is completing his full restoration of a Lindsay Sport Special, and Mike Windsor is re-powering a 1947 Greavette for me.

While each of the four boats now operating uses a different set of components and drive system, the two latest projects are using identical motors and controllers, with batteries sourced from the same supplier. It is our hope that if these boats turn out satisfactorily, they may provide a template for further conversions. So, by way of introduction to the topic, this article, summarizes my decision-making process on the project so far.

Baisong, our 1920 Uncle Sam, will always be queen of our boathouse. However, the idea of a clean, reliable, easy to operate dippy for exploring and hacking about had been on my mind for some time. Electricity seemed the obvious answer and had the advantage of environmental friendliness. However, my total lack of knowledge on the subject had been

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holding me back. This year however, I discovered that I didn't need to be a pioneer. Kerry Harmon, ever the project engineer, has been documenting the performance characteristics of our fleet and the requirements to duplicate that performance electrically.

Collecting those numbers involved considerable detective work. For although many people had tested their own boats, no one had combined and collated all the data. Similarly, the electric boat owners had collected performance numbers but no one had compared the data. Kerry's graph tracing demand at various speeds provided a guide to the battery capacity required for any given speed and range.

All this work on his part convinced me that in theory, all I had to do was figure out how far and how fast I wanted to go, then install the right components. So, I took the plunge.

I immediately realized that I had a lot of homework to do before I could even talk about electric propulsion. Out came my high school physics textbook to review long forgotten electrical concepts and terminology. Then came a number of internet articles to bring that 1960s knowledge of batteries and motors into the twenty-first year of the twenty-first century. Armed with this somewhat shaky review of the subject, I made a set of notes for myself, setting out what I wanted to achieve and my reasons for choosing the components that I did. These notes went to Kerry to make sure I was on the right track. At some point he showed them to Karen in her capacity as president of the D.O.A., suggesting that they might be of interest to the readers of *The Device*. Karen took one look and suggested that they might be, if they were translated into "English". So here goes.

Object

The object of the project was to replace the St. Lawrence gas engine in *Gladys*, my newly acquired 1947 Greavette Dis Pro, with an electric motor while retaining the original drive and device. Many members of the Association will remember *Gladys* and her owners Doug and Ann Brown. She was at the very first D.O.A. regatta and most others since then. However, family circumstances had caused her to be laid up for the last few years. So she came into my possession. However, her story is for another day.

Performance

Kerry's charts show that the dippy fleet cruises between 6 and 6 ½. miles per hour (mph). Therefore, *Gladys* should match this speed range under electric power. Equally importantly, she should be able to maintain this speed for 5-7 hours if she is to participate in all day events.

Power

Gladys's present St. Lawrence engine develops 3 horsepower at 900 revolutions per minute (rpm). The power of an electric motor is measured in kilowatts (kW). One kW is equal to 1.34 hp. Therefore, to duplicate the maximum output of the St. Lawrence engine, she would need an electric motor of 2.24 kW. As discussed below, the actual power required is considerably less, but the theoretical maximum power of the gas engine is a good starting place.

Endurance

Battery capacity is normally measured in ampere hours (amp/hrs). Since the work an electric motor is doing is measured by its draw in watts, a more useful way to measure battery capacity for our purposes is to talk about watt/hours. The watt/hour capacity of a battery can be found by multiplying its amp/hour capacity by its voltage, since watts = ampere x voltage.

A review of Kerry's graph shows that 1100 watts is required to maintain 6 ½ mph. Therefore, seven hours continuous running would require 7,700 watt/hours of battery capacity. However, some caution is required in using this figure.



Phil Boyer's boat Sol Canada was the primary source of data for this graph. Although she is not a dippy her lines were taken from a late model (wide) Greavette. She is driven by a Torqeedo Cruise 2.0R electric outboard motor in a well behind the helm seat. There is an opening in the hull for this installation but it is smaller than the device opening on a standard Dis-Pro.

A dippy, whose device opening, skeg, etc. all cause drag and turbulence, may be somewhat less efficient than Sol Canada although the difference in hull shape and Sol Canada's extra weight may nullify this disadvantage. However prudence dictates that a "fudge factor" should be included in the endurance calculations. I have "guesstimated" conservatively that 7,000 watt/hours will provide a comfortable cushion over the 5 hour minimum in the specification with maximum endurance likely in the 6 hour range.

Choice of power package

Having determined that *Gladys* should have a motor of about 2 kW and a battery capacity of 7000 watt hrs, the next step was to find the components that would meet these specifications. Choosing this package involved a fundamental choice. Would it be better to mix and match examples from the myriad of motors and controllers presently available through the internet, or to restrict myself to the limited number of "plug and play" packages developed and marketed primarily for re-powering sailboats?

I chose the second option without hesitation. Management of the significant amounts of electrical power stored in the boat's batteries and control of the motor's functions are not a simply a matter of connecting wires. Since hooking up an electric train set is about the limit of my experience in this area, I happily decided to let someone else do the engineering.

Power package chosen

I chose to purchase from Electric Yacht in Minnesota. Their market is auxiliary power for sailboats. Therefore their range of packages were a good match for dippys' speed range.

The specific package both Brad Jackson and I acquired, was the Quiet Torque 2.5 /3.6 direct drive motor and controller. The direct drive permanent magnet alternating current motors eliminate the complication and weight of reduction drive units. Their ability to produce maximum torque at any speed will allow us to mimic the performance of our boats' former gas engines.

As can be seen from the name, these motors can be set to provide different power outputs by programming their controllers. This is done by the supplier. We ordered ours set to run in the 3.6 kW configuration on 36 volts. Although the 2.5 kW configuration would provide more than enough power for *Gladys*, the 36 volt configuration offers greater flexibility for the range of propellers now in use on our boats. The 2.5 kW configuration limits top rpm to 900 with 750 being the top of its optimum range. The 3.6kW configuration tops out at 1350rpm with the top of its optimum range at 1125 rpm. This puts all of the speed range of both Dis- Pro and St Lawrence engines comfortably within its rpm range. This should allow converted Dis-Pros to continue to use their existing propellers.

Batteries

Battery technology is a moving target. Cars still use lead acid batteries to start their engines. More sophisticated forms of this system such as gel cell have about the same performance but don't care whether they are mounted right side up or not.

Cell phones and electric cars are powered by Lithium Ion (Li-ion) batteries. These have better endurance characteristics and produce more power for their weight than the older technologies. They will also tolerate many more charge/discharge cycles. However, their management requirements and expensive components mean that they are much more costly than conventional batteries.

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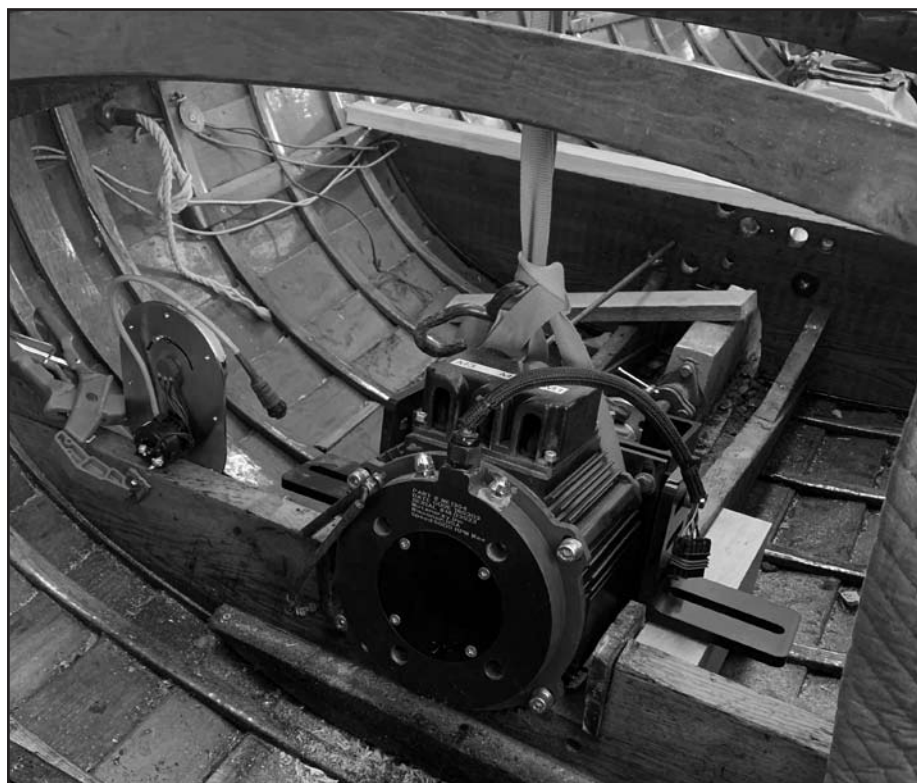


Photo: Tom Wood

The electric motor roughed in on Tom Wood's boat Gladys.

I decided that the smaller size and weight coupled with the superior performance of Li-ion batteries justified the additional expense. The batteries have been ordered from Lynac, a Canadian producer located in Thunder Bay. The company supplies batteries for sailboat auxiliary power and large 36 volt trolling motors on bass boats. Therefore, it has experience in the marine environment. Conor Lyon, the owner, has proved to be both knowledgeable and helpful.

The configuration I have selected is two 36 volt 100 amp/hr (3600 watt/hr) batteries which will be connected in parallel. This will provide 7200 watt/hrs of endurance or a theoretical 6 ½ hours of running time at 6-6 ½ mph. The batteries will sit alongside the engine beds with one on each side. This will keep all the major components in the original engine compartment and the weight in the same location as it was with gasoline power.

Project Status

At the time of writing, Mike Windsor has roughed in the motor installation on *Gladys*. He was able to do this using the original engine beds, cut away to accommodate the extra width of the motor and twinned on the outside to provide a base for the motor mounts. She will then have some hull work done while we await delivery of her batteries at the beginning of March.

Brad Jackson's electrified Lindsay Sport Special project is a bit further along. Barring unforeseen difficulties, both boats should be in the water this summer. Be sure to watch for them because you won't hear them coming!

Tom Wood



**100 PLUS
YEAR OLD**

DISAPPEARING PROPELLER BOATS

Lily: Hull Number 18 — 1916

Built in 1916, Lily was used as a demonstrator by the D.P.B. Company until purchased in 1917 by Ralph Judd a local entrepreneur and property owner. This boat, a motorized adaptation of a Johnston skiff had the appearance of a canoe, slender, doubly pointed and lacking prominent gunwales. It remained with the Judd family for 83 years. At first Ralph put the boat to a multitude of uses involving work and pleasure, transporting supplies and people, including tourists, family and workers.

This pattern continued until the 1940's and was confined to the Muskoka lakes, with the care and use of the boat eventually passing to Ralph's son Frank who finally beached and, in fact, abandoned the dippy on the Judd property in or near the village of Rosseau.

Frank had a daughter, Phyllis, by then and she did not forget about Lily and all the good times spent boating. Phyllis married George South whom she introduced to Lily, which by then was in serious decline. Obviously Phyllis was able to entrance George with the idea of repeating her childhood and young adulthood, dippy experiences, despite the wreckage George saw behind the barn.

So together, in 1989 Phyllis and George orchestrated the adventure that brought about the rescue and reconstruction of Lily, all 16'6" X 3'9", or what remnant of this harbinger of pleasure in a dippy still remained.

Of course much skill, effort and insight were essential to pull this off. How difficult was it going to be? A photo of George Geisler, a boat builder from Powassan engaged by the Souths, shows him in disbelief sitting beside the overripe skeletal remains pondering the absurdity of seeking a breath of life where none appeared to exist. Another potential restorer whose job quote was "\$15,000.00, at least" added "he doesn't know if he will live long enough to see it restored".

Geisler Boats took the job of hull reconstruction then passed the boat over, with a few structural oddities such as an elevated centre seat, re-positioned by Geisler, to accommodate a distorted hull shape, certain to have caused alignment difficulties for the next person, who did record some dry remarks! Then, after George Geisler, Paul Doddington was summoned. Paul performed some magic with mechanical and electrical details complete with a minutely detailed invoice/list of parts, procedures and prognostications.

By 1990 (a guess) Lily was launched in Milford Bay just down the road from the South driveway, where 10 years later, a moment would occur that would lead to Lily departing the Souths and joining the Byrne's and also, by the way, helping to resolve a dispute over the wanton elimination of another Billy Johnston boat, (another story; another time).

At the moment in Feb. 2021 Lily is securely tucked away, out of reach, on a farm in Falkenburg, Muskoka. This, Lily must think, is *deja vu*, all over again - another farm, where is the water? What kind of bizarre life is next?

Well, antiquity, or at least a mini version of it, can be charming and calls for more attention such as varnishing but moving also matters even if it requires a compromise of change.

Stan & Helen Byrne



The Dippy Doctor Sez:

By Paul Dodington

Photo: Paul Jenner

Part 4: Fuel System Troubles

As we embark upon the 3rd decade of the 21st century, we are learning daily that change is the only constant. However, Dispro owners have had to adapt to many changes over the past 105 years, especially the changes resulting from petroleum refinery processes.

All Dispros equipped with their original “infernal” combustion engines use carburetors to vaporize the fuel; that is to mix raw gasoline with air in an accurate ratio, so that it will burn in a controlled manner in the combustion chamber.

Now, a century later, carburetors, especially in automobiles, have been abandoned in favour of fuel injection systems. This fundamental change-over has greatly improved efficiency and reduced to some degree the environmental impact of internal combustion engines.

However, fuel injection is only one cause in a long series of petroleum changes that Dippy owners have had to deal with on a regular basis over the past century. So, you may ask, what is different about the formulation of gasoline available from your local gas station today from what these engines used 100 years ago?

Well, for one thing, it smells different. The vapours today don't smell as strong as they once did. Back in the early days when the Port Carling factory was churning out these boats in unprecedented numbers, and Henry Ford was doing the same with his Model T, gasoline was known as naphtha, or white gasoline, as it was clear, like water. It was a hazardous waste by-product of the production of lamp oil, or illuminating oil, which was in great demand before rural electrification programs were established after World War II. In the early days, before filling stations came on the scene, you'd buy your naphtha from the local drug store.

You can still buy naphtha today at sporting goods dealers or Canadian Tire at huge expense, to be used in your vintage Coleman camp stove. As late as the 1970s there was a 3rd pump at many marinas which dispensed only white gasoline which was used in Mercury outboards. (The warranty was void on a Mercury if you substituted car gas containing tetraethyl lead which would result in engine seizure.)

I recall one summer when I used this so-called “white gas” in my Dippy boats and in my 1914 Model T Ford, and found the performance amazing! This is the stuff these old engines were designed to run on.



The formulation of motor fuels has been in constant flux since W.W. I, in response to design changes in I.C. engines and changing market demands. I don't want to get into that discussion here, except to point out that a major sea change has taken place since the application of fuel injection systems to automotive engines and the resulting abandonment of carburetors.

Fuels easily obtained at gas stations today are formulated to work best in fuel injected engines; not in engines equipped with carburetors. "Oh, yes" you may say, "but my Dippy runs just fine on modern fuel." This is true, as long as the fuel is fresh, but after it has aged a month or two, the engine can become more difficult to start, and this is where the problem lies.

So what is the trick we've all used in desperation to get an obstinate engine to start? "Giv'er a shot of ether", of course, and 9 times out of 10, the engine will roar to life and keep running. Traditionally, ether was a more plentiful component in gasoline than it is today, and it, along with other highly volatile substances gave gasoline its strong odour and helped it ignite readily, particularly at lower temperatures. Although I do not pretend to understand the chemistry of modern day gasoline I observe that it contains less of these volatile substances than it used to. How then, can modern car engines run on it?

Fuel injection systems are closed systems, not vented to the atmosphere. This was done for environmental and economic reasons, to prevent waste of fuel by evaporation. When you remove the filler cap from a modern car's gas tank, you'll hear a "whoosh", which lets you know that it is a closed system. It then follows that fuel injection systems are capable of working perfectly well with a much reduced quantity of volatile ethers, because the vapours, though in short supply, can't escape to the environment. In addition to that, modern ignition systems produce a much hotter spark than our more primitive vibrator coils or magnetos, and they'll ignite almost anything combustible.

Over the past couple of years I've made some interesting observations in the behaviour of fuels used in my Dispros and in my Model T, which is equipped with an original model Y Kingston carburetor having some similar characteristics to the 4-ball Kingstons used on copper jacket Dippies. In order to function properly, carburetors need to be vented to the atmosphere. If fuel sits idle in the carburetor bowl for a week or more the volatile ethers which are already in short supply, evaporate out and the engine may be difficult, even impossible to start. Drain the carburetor bowl and let fresh gas come through from the gas tank and the engine will start immediately and keep running.

Here is my advice on this issue:

1. Use only high-test gas that is ethanol-free.
2. Treat that fuel with an enzyme type fuel stabilizer.
3. Store extra fuel in a sealed canister. (It must be sealed tight and should change shape with temperature variations, indicating that it is truly sealed).
4. If the boat is probably going to sit unused for more than 1 week, drain the carburetor or run the engine with gas shut off until it stops.
5. Avoid carrying unnecessary quantities of gas in the gas tank, as the Dispro tanks are also vented to the atmosphere, and the ethers will diminish over time.

And now a few words about carburetor floats.

One of the reasons you find so many battered Kingston carburetors on copper jacket Dispros is that the cork floats were the first things to give trouble. As cork is from the bark of a tree, it is subject to dimensional variations as the environment changes. Wood warps and changes shape. In my experience, no matter how carefully you try to seal a cork float, eventually gas or water will find its way in, making the float less buoyant, sometimes resulting in swelling and sticking to the sides of the bowl.

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The carburetor manufacturers of old, Kingston and Schebler, were aware of these issues; consequently their cork floats were laminated, similar to plywood, with alternate layers having the grain at 90 degrees to one another to minimize distortion. The glue between layers was orange shellac, which wasn't affected by white gasoline. The entire exterior of the float was also shellac coated. The introduction of ethanol in motor fuels has played havoc with the shellac, causing sometimes total float disintegration, because alcohol is a solvent for shellac. This is the main reason to avoid using ethanol gas with these carburetors, but ethanol is hygroscopic too, and attracts atmospheric moisture.

The first engines used in Dispros to be equipped with hollow metal floats were the large model M Carons with their bullet-proof Solex carburetors of French manufacture. Of course, all the Zenith 24T-2 carbs used on Coventry Victors have metal floats too. But metal floats can be subject to damage by operator neglect if water gets into the gas and freezes inside the carburetor bowl in cold weather. The water expands upward as it freezes, crushing the float and reducing its displacement.

In recent years, particularly since the advent of ethanol fuels, we have been looking for suitable materials as a substitute for cork. There were usually various types of closed-cell light urethanes but although they worked beautifully for several seasons, gasoline gradually caused changes resulting in the floats becoming "rubbery" or else they would change dimension. Again, protective coatings were useless over time, especially on boats that were in service from April until November.

The best material we've come across so far is called Nitrophyl, which has been used for many years to make floats in automobile and marine gas tanks to operate the fuel gauge. This stuff can be purchased from antique car parts suppliers, like Snyder's Antique Auto Parts in Ohio or Restoration Supply in California. It can be had in rods, cylinders or flat blocks and is very easy to carve, or machine in a lathe. Because the material does not change dimension when immersed in gas, you can make your Nitrophyl float slightly larger in dimension, insuring greater buoyancy and a more positive shut-off of fuel. Three or four years ago, I made a new Nitrophyl float for the Kingston Model Y in my 1914 Ford, and have gradually fine-tuned it so that the car will now start from cold on the second flip of the crank just as it did 50 years ago on naphtha! Since making that float, I have made a couple of dozen for Dippies, with good long-lasting results. Even ethanol gas doesn't seem to bother them at all, and no protective coating is required. Nitrophyl is expensive, but it works!

to be continued next issue . . .

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