

# Necessity Is The Mother of Invention

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The old English proverb tells us necessity is the mother of invention. In other words the driving force behind the creation of anything is a need.

And so it is with cork carburetor floats for old engines. A little background.

30 years ago I placed a small three line ad in what was then called the Peterborough Shoppers Market. It was one of those small weekly publications that everybody in the Kawartha Lakes region would scan from front to back. I was looking for another Lakefield or Peterborough cedar strip to restore over the winter. I had room for one more word in the ad so I added the word Dispro figuring no one out there would have a clue what a Disappearing Propeller Boat was all about. A few days later a phone call came in from a guard at the Millbrook Penitentiary. He was calling on his lunch hour. He was browsing through the Shoppers Market and wanted to know if I was interested in a Dispro. I almost fell off my chair.

To make a long story short it was a 1921 Uncle Sam model that had been in his family for years. It had been sitting on its side in a leaky boat house near Fenelon Falls for decades. And, it was a mess. There was dry rot throughout. But, almost all of it was there including the engine that was in pieces scattered all over the floor. I gathered up everything I could find and brought it home.

One year later I had the hull looking like the day it was new. Thanks to an engine cleanup and overhaul by the late Everett MacFarlane, a little guidance from John Thomson and maintenance assistance and Device restoration by Paul Dodington it's still running like a charm....30 years later.

Up to several years ago it ran with all of the original engine parts. But then one day while I was putt-putt-putting down the middle of Clear Lake gas started flowing all over the place. When I took the carburetor apart in the middle of the lake I found the cork float in a thousand microscopic granules. The gas I was using at the time...gas laden with ethanol... had eaten/dissolved the cork! Nothing was floating in the carburetor anymore.

Over the next couple of years I tried using floats made out of synthetic material that was being used in Dispro circles but I never found them to be satisfactory. Then suddenly a brainwave hit me. If cork used with regular gas had worked for decades why not use cork again given the fact I was now no longer in the same area code with gas containing ethanol. I, like everybody else these days, had switched to supreme grade gas that contains no ethanol. Question: Where can you get your hands on real cork. Not the agglomerated stuff you see in some wine bottle stoppers, but real cork. A neighbour on the lake who lives in Oakville provided the answer: Jelinek Cork Group in Oakville. It turns out they know something about cork. This family run multinational company has been in the cork business in every way imaginable since the mid 1800's!

I placed a call and all but apologized for a request that was a little out of left field. The voice at the other end of the line assured me the request was not unusual...in fact, she had just finished dealing with the owner of an ancient Cadillac who was doing exactly the same thing. I was invited to go on to the company's web site and have a look at their line of rounded and tapered "bottle stoppers". "That's exactly what you need", she said. "All you have to do is cut and shape". Okay, now what?

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*The finished float for the Kingston Four Ball and the raw material from which it was manufactured.*

I went to Jelinek's headquarters and they proceeded to bring out bags of "bottle stoppers" in sizes that might fit my Kingston Four Ball carburetor bowl. The sizes increase in 1/16th increments. I sat there and sorted through hundreds of them in an effort to find pieces that had no imperfections. They couldn't have been more helpful. Natural cork has small fissures and cracks. That's the way the material is when it's peeled off the trees and when it's used in any one of thousands of applications. I was looking for pieces that were flawless. I found them. They cost just a few cents apiece.

Making a carburetor float out of a bottle stopper is time consuming but relatively easy. To make a float for use in a Kingston Four Ball carburetor, for example, run the top of the stopper through a table saw to get the desired depth. Then, using a 1 ¼ inch wood hole cutter position the cork on a drill press in a way that puts the hole just fractionally off centre so the cork that remains where the float arm is to be attached is as big as it can be without rubbing against any portion of the inside of the carburetor bowl. Very little cork is left on both sides of the hole that's drilled to attach the metal arm so you have to be very careful. Using a fine hack saw blade and fine wood files/rasps the float is notched and shaped and a countersinking drill cuts the hole into which the float arm is attached. Then, there's a whole lotta sanding to make sure the configuration is perfect.

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After all, if the cork rubs against any portion of the interior of the carburetor bowl the float won't do what it's supposed to do...float...and control the flow of the gas/oil mix going into the engine.

Back in the day cork floats were coated in shellac. Why, I don't know but I did it thinking it was the right thing to do. I applied two coats and found that the shellac that remained on the surface all but disappeared within a few days of running. Additional coats have been applied as needed. The floats I've produced, and I've made about two dozen of them, have been used for the past two boating seasons and they've worked perfectly. As the saying goes....necessity is the mother of invention!

If you find yourself in need of a carburetor float for your old engine you might consider a similar approach.

**Prior Smith**



Photos: Prior Smith

*The spotless and gleaming engine compartment in Prior Smith's Dispro.*