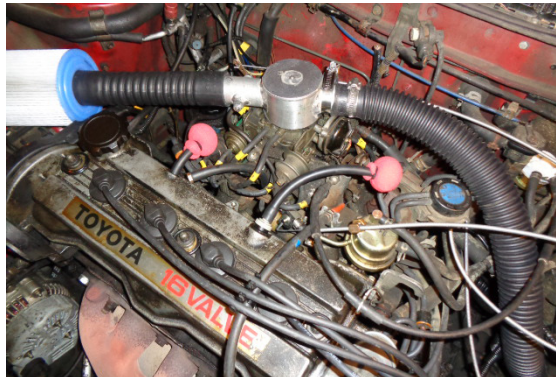


The discovery

When Steve Bowman was a teenager in the 60's, he saw a movie, *The Longest Hundred Miles*, which sparked a life-long interest in powering gasoline engines with wood. Part of the movie story-line involved the use of charcoal made from coconut shells to power an old bus enabling a priest, a group of orphans, two American soldiers and others to escape advancing Japanese soldiers. Steve was intrigued by the novel source of fuel, but figured that it was probably just a Hollywood invention. His father, however, who was watching the movie with him, said that coke, a charcoal version of coal, was used to power trucks when he was in England during WW II and gasoline was in short supply. Steve's father recalled trucks would wait at the top of one hill to build up enough gas to make it to the top of the next hill. That was all it took to start the wheels turning in Steve's head.

As the years went by after seeing that movie, Steve occasionally found a book or article on the subject and once ordered plans for a wood gasifier, but every example he found was too complex for him to build. Gasifiers usually require an extensive amount of welding and other metal working skills. At one point, he discovered plans published by FEMA for a wood gasifier which he thought he could possibly modify enough to build. He then learned that this particular gasifier



design did not work well. So the years continued to go by, but the interest remained.

Then in 2015, Steve discovered several YouTube videos made by Gary Gilmore, a state forester from Pennsylvania, describing and demonstrating a simple gasifier design which Gary named the Simple-Fire. Finally, Steve realized that charcoal gasification was within his reach. In September of 2017, he started to work and built the "basic" 5-gallon Simple-Fire which was eventually installed on a discarded push mower. Next, he built a medium size one from a 15-gallon barrel to run an electric generator and finally a large size gasifier out of a 30-gallon barrel and several buckets to power a car.

In addition to the three gasifiers, Steve also constructed simple equipment for making charcoal out of yard debris, dead limbs and trees from the woods around his home and processing it to be used as engine fuel.

How it works

The large drum is filled with charcoal. A blower is connected to the gas line near the engine carburetor and turned on to pull air through the system. Then the charcoal is lit through the air inlet near the bottom of the barrel. There is a pipe inside the barrel which directs the air to the burning charcoal. The resulting reaction between the oxygen in the air and carbon in the charcoal at temperatures between 800 and 1500 degrees Fahrenheit, produces carbon monoxide gas, the

main flammable gas burned in the engine. The addition of water dripped into the air intake which turns into steam, produces a small amount of hydrogen which boosts the power of the gas. Some exhaust from the engine is fed back into the reactor air intake to cool the temperature of the reaction. The resulting gas is drawn out of the reactor through a pipe near the top. From there, the gas goes through a multi-stage filtering system which remove heat, moisture, and charcoal dust from the gas before it enters the engine.

After the starting blower runs for a few minutes, the potency of the gas can be checked by lighting the flare burner mounted to the blower. When the flare burns continuously, the gas should be potent enough to power the engine. Then, the blower is removed, replaced by the engine air filter, the air mixture valve is adjusted, and the engine started. At that point vacuum created by the engine will continue to draw air and gas through the system.

The only modification to the engine for the mower and car was that the air filter was replaced with a T-shaped fitting—the gas hose attached to one side, the air filter and air mixing valve to the other side. The air mixing valve and a gasoline cut-off valve are controlled by cables from inside the car. In addition, the ignition timing was advanced on the car engine.

The lawn mower will run for about an hour on 1.5 pounds (gallons) of softwood charcoal. The Corolla is getting 2 to 3 miles per pound (gallon) of softwood charcoal.



Another discovery

A personal message from Steve

Not long after I discovered the existence of wood gasification technology through watching a movie, I saw another movie which resulted in a much more amazing discovery—a life-changing one.

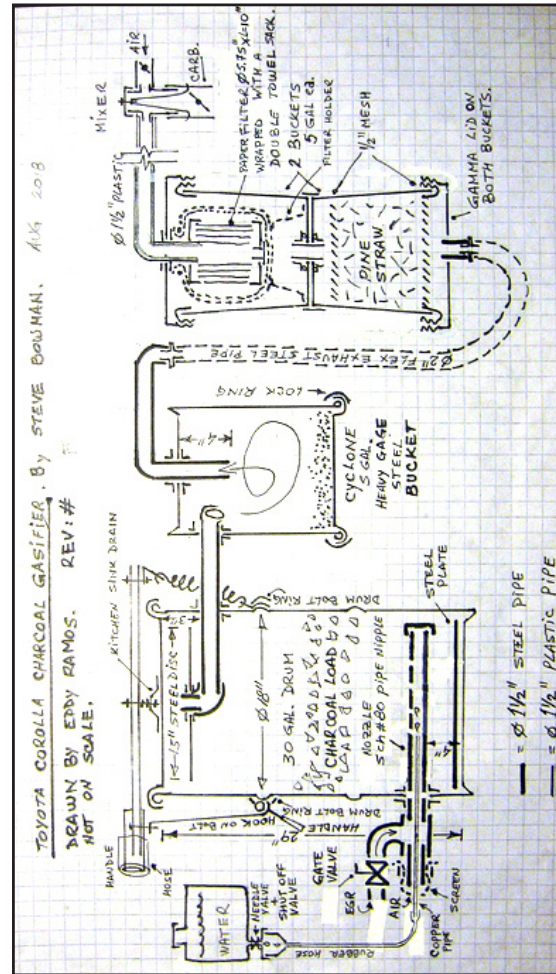
In 1972, I saw the movie, *For Pete's Sake* and much to my surprise, an invitation to accept Jesus Christ as personal Lord and Savior was offered right there in the movie theater following the movie.

Since childhood I had believed in God as the creator. As a teenager I knew I did things which were not pleasing to God and that I was what church people call “a sinner.” So, believing that it was the right thing to do, that night in the movie theater I turned from my sins, not only believing in God as creator, but also believing that Jesus is the Son of God and that He died on the cross to pay the penalty of death for my sins. As I came to faith in Christ, I realized that Jesus was resurrected so I could also be raised to new and eternal life. I also realized that being filled with the Holy Spirit I am empowered to overcome the things which keep me from being all that God originally created me to be. Since I started following Jesus, my life has never been the same.

My prayer for all reading this is that you will make this “discovery” for yourself, that you will read the Bible, pray, and find a church where you can grow to be more like Jesus, day by day.

God has blessed me in so many ways through the years and given me the desires of my heart over and over again, including something as useless as building a charcoal-powered car—something that I never ever really expected to do. May God give you the desire to seek Him. The Bible says that if we draw near to God, He will draw near to us. I pray that finding Jesus will also be the greatest discovery of YOUR life.

▼ Corolla gasifier drawing by Eddy Ramos, Argentina, 2018



For more information, contact:

Steve Bowman
4131 US Highway 158
Oxford, NC 27565

919-690-1574

sbowman@centurylink.net

You will also find information about this technology, this project, and other similar projects at driveonwood.com.

The CHARCOAL-POWERED COROLLA STORY



- The discovery
- How it works
- Another discovery



***It's not what's under the hood,
but in your trunk that
really counts!***