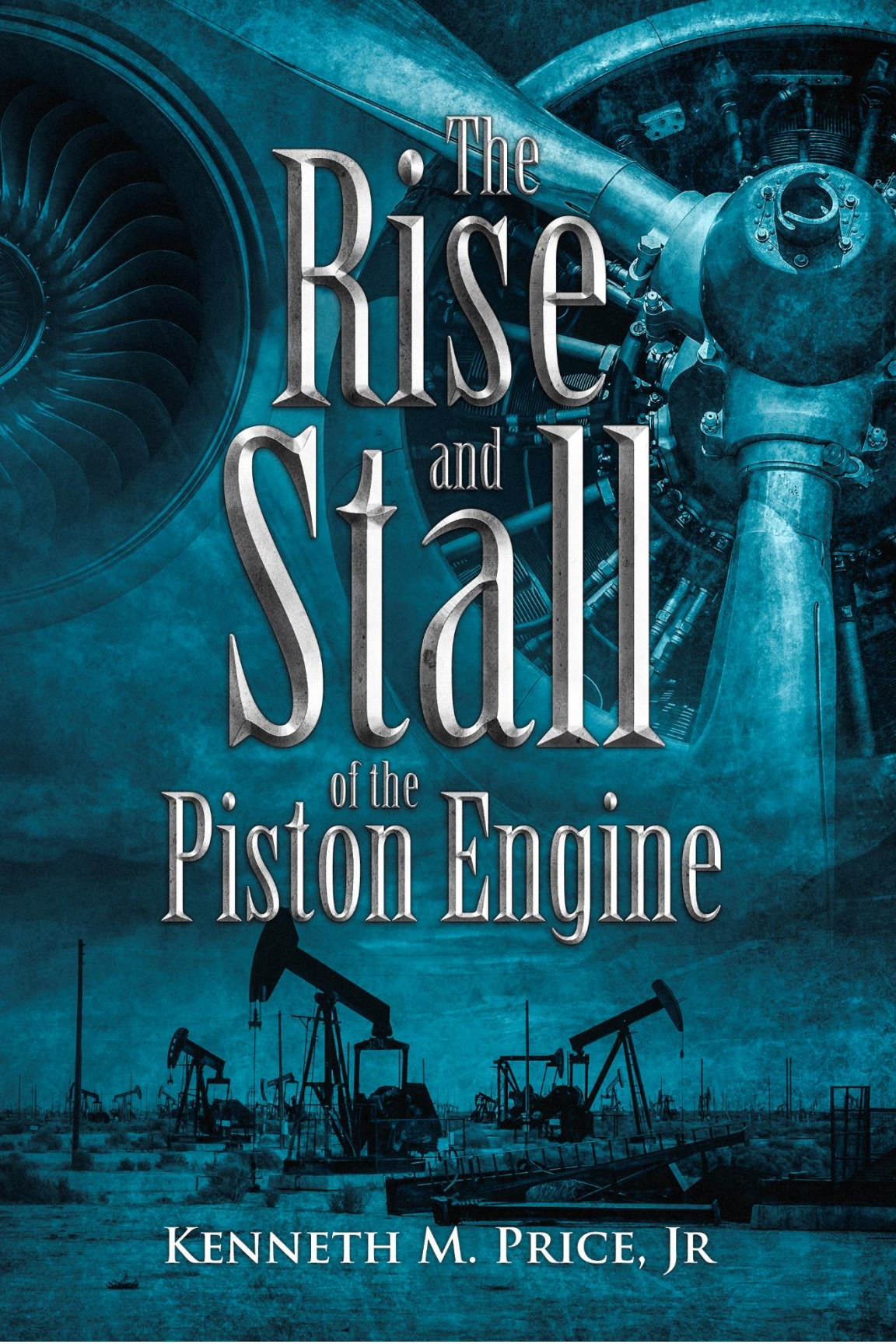
The Rise and Stall of the Piston Engine
Kenneth M. Price, Jr

To my Dad who refused to be impressed by big engines and flashy trucks. To my Mom who let me get a motorcycle. To my friends who drove cars in traffic, raced them on weekends and took them apart. To all those who have worked on one of these cotton-pickin contraptions known as a piston engine at least once, this is our earthly bond.

Kenneth M. Price, Jr

Book I.

The Rise and Stall of the Piston Engine

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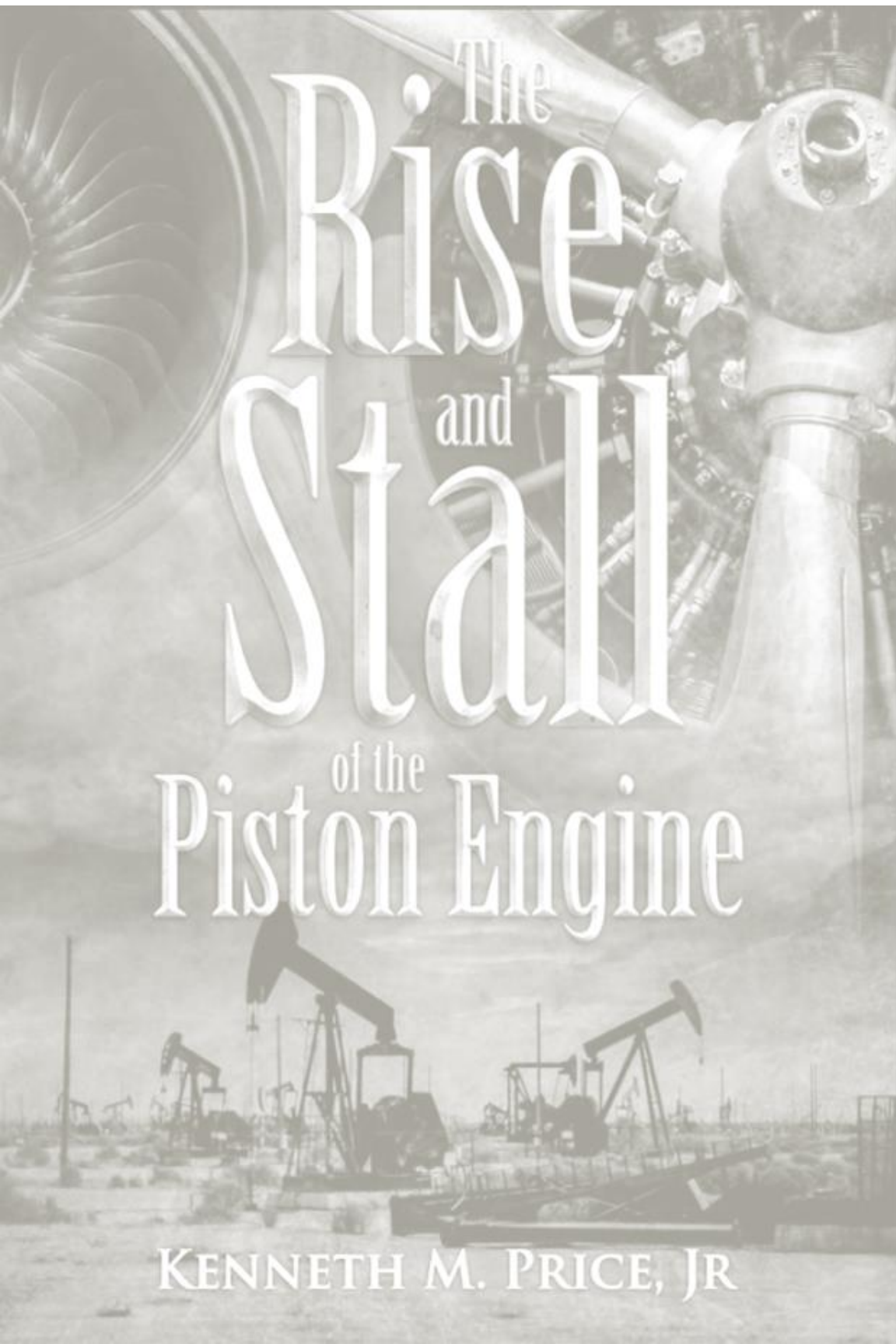
Note to readers:

As I am not a part of any auto/oil-related industry, employer or any scientifically dogmatic organization, perhaps I am a reasonable candidate to describe our current transportation situation accurately. This is a story that needs to be told now, as millions upon millions of people are soon to be impacted by their purchase of a new and very expensive automobile.

This publication has been copyrighted but that does not mean that it cannot be revised. This material is currently published in free WEB format, and a small number of PRINTED copies such to remain in a flexible format that when finally completed will represent the true evolution and monopolization of the world's current "petro" empire.

I ask those who read it to please assist in the final version by contacting me with any corrections that need to be made. In the meantime, feel free to share it with those you care about in helping them get a glimpse of our stolen future.

Kenneth M. Price, Jr


The Rise and Stall of the Piston Engine
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The Writings of Kenneth M. Price, Jr.

Book I, ***The Rise and Stall of the Piston Engine***

The Rise and Stall of the Piston Engine documents the "evolution" of the gasoline piston engine and in the process exposes the design for what it is; a heavy iron mechanism that consumes excessive amounts of gasoline while wearing itself out from relentless friction. You will soon learn that our use of piston engines was never anything more than a means to create as much fuel demand as the oil-producing infrastructure could handle.

Before you ever turned a key in the ignition of a 19th Century car petroleum engineers had already developed a working model to both apply petroleum and insure the amount needed to make the system run would equate to thousands upon thousands of fuel consumed. The mechanical mechanisms that came to the forefront of powered transportation thusly had little to do with available technology. Their unexpected rise to the top of propulsion mechanisms was the result of carrying out a brilliantly-designed plot to create demand for gasoline, and nothing more.

Book II, ***Titanic and Hindenburg, Two Tragedies One Plan***

Book 2 explains the degree and extent of the actions that the big oil banking conglomerate took to get their plans fully accepted by the population. These plans included the development of psychological shifts in the human mind; such as to deliberately sink a brand new state-of-the-art ocean liner in order to make people believe sea travel was still not safe. Along the way when the Hindenburg comes into vogue, much more of this psychological nuancing of the public had to be developed. Read how the accepted demise of both travel icons are made up stories to fit the scripts. In the process learn that the Titanic, the Hindenburg, Charles Lindbergh and Amelia Earhart were all part of an oil-marketing plan that shifted sea travel to air.

TABLE OF CONTENTS

Bibliography

Welcome to the living revision of the rise and stall of piston powered mechanisms; the innumerable ones that pervade human existence on every major continent and land mass in the world.

As I have researched this book I have utilized the incomparable search functions of the internet to find and answer every question necessary to disclose the whole truth. As a result this current edition has been edited and restructured over 20 times and in the process virtually all of the statements have been fact-checked.

If you are reading this book from a computer, then you have the best library ever devised at your fingertips. I urge you to use the search platform of your choice to fact check everything stated in the book that you question. Please forgive me for the lack of footnotes. They are slow to add and ruin the process of explaining mechanical contraptions that would require millions of them.

FOREWORD

As we enter the 21st Century the world needs an updated evaluation of its transportation mechanisms. And this is because of Earth's present highway dilemma.

For starters the current system is neither safe nor efficient. Secondly, for anyone commuting to work in a vehicle, it will shackle you with a relentless economic burden.

We have allowed ourselves to be lulled into believing that today's super-engineered piston engines are still at the forefront of modern transportation. Along the way we were seduced by the purr and power of the multi-cylinder staccato. And during the evolution of our present day transportation system we began accepting smog and air pollution as necessary evils, as if it was the price of modernization.

The price of modern mechanization is not planetary defilement. We had a non-polluting fuel that was endlessly abundant known as alcohol. Somehow we managed to give it a bad name and ban its use in favor of gasoline. Gasoline is toxic and could have been used as feed stock to produce alcohol. But Big Oil's sole purpose was to sell petroleum.

And even as early as the turn of the 20th Century we had mechanisms like steamships and trains that were cheaper to operate and maintain, and in many cases they were safer than the high-flying

and high-speed highway system we have today. What happened to them? Big Oil wanted petroleum sales, not coal sales.

Today, our ecological survival depends upon us eliminating practices that are ruining our earth, plants and food supply, and for that we need free-thinking scientists, engineers and car enthusiasts who are ready to make a change. That's what this book is for.

Now the synopsis about how we've been duped by Big Oil may be too much for some. Some people with close ties to their automobiles and industries may get offended. Try to hang in there, as you're going to learn a lot on the next pages that is contrary to what you've been taught or currently believe. You will never feel the same about the coveted piston-engine-driven contraptions that we have today.

Our current transportation model should include the best prototypes that depict mechanisms we should have had in the first place. It does not. If we sit, Americans will be expected to maintain the same antique system we never should have built in the first place. And so it is crucial that we wake up fast to reverse the current trend to turn our lakes, rivers and seas into petrochemical genocide.

You can be sure that along the way we'll be entertained (distracted) with unnecessary technology, like self-steering cars. But they plan to leave us with the same piston engine designs that neither last longer, are cheaper to repair or get better fuel mileage. The time has come to question and to persist as we must keep Big Oil from rebuilding our transportation system from the same flawed principles.

This time we will build a system that fits the entire planet. Welcome aboard the "Renaissance" of technology and transportation mechanisms with zero pollution as the standard. The shackles are about to come off. All we need is a release of the patents that contain cold fusion, Tesla through-the-air energy and antigravity technology. And isn't is interesting that today Donald Trump's uncle holds in his possession all of the Tesla research!

CHAPTER 15

The Modern Airline Industry

Piston-Powered Aircraft From The 1950's

Were they really as fuel-efficient as the latest passenger jets?

AS I WAS RESEARCHING the trends in engine designs with regard to aviation transportation I was fortunate enough to find a technical paper that had been produced in Germany by the National Aviation Laboratory, NRL in 2005 that had examined exactly what I was looking for. Inside the report it compares airline fuel-efficiency from prewar days to airline fuel-efficiency today. Their research led to the conclusion that the fuel performance of modern day passenger aircraft compared to piston driven aircraft from the 1950's has remained unimproved. In fact it goes on to report that on a per passenger mile basis, the most efficient modern aircraft, the Airbus A380, has just now managed to match the fuel-efficiency of the 1950's piston engine powered Lockheed Constellation shown.

This is one of the most efficient fixed-wing aircraft ever built, the piston-powered Constellation of 1955.

When I first read this article I didn't know what to think as the summary of their research did not make engineering sense. How was it possible that these turbine powered planes could be consuming even more fuel than piston engine powered planes? These new turbine engines put out 100 times as much power per weight of a piston engine, yet they weren't able to improve the efficiency of the plane! I knew I had to find the full story.

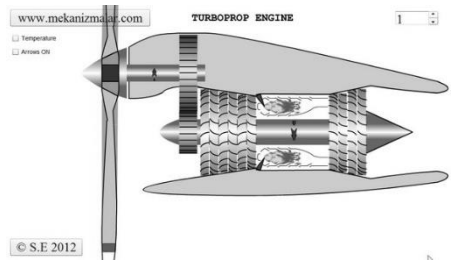
The flow of air into a turbine is open and straight, making them much more efficient at compressing air into the combustion chambers and expelling it out again. This is where a piston engine is at its worst, having to do an extra stroke just to get air into itself. More drawbacks emerge for the piston engine, such as friction losses between rings and pistons, plus self-cancelling momentum dynamics caused by pistons being stopped and started.

For all fixed wing aircraft that rely on fuel-powered engines to keep them aloft, weight means everything. There is no possible way that a piston engine could come close to the performance of a turbine. Could it be they found a way to sabotage the performance "numbers" of the turbine?

Another possibility for such poor fuel performance from such a modern engine is the possibility the engines were installed into a non-streamlined design and flown too fast. I wondered if these airline designs, that feature engine pods hanging below the wings, are simply being flown beyond the point where they still maintain laminar flow.

The jet engine of an airliner and the gas turbine of a ship or train operate the same, or at least we are taught that way. As air goes in the front, it is compressed in a first stage, then it is directed into a combustion flask, charged with fuel and ignited. Ignition causes combustion leading to high pressures. Since the turbine gasses only flow in one direction it leaves no choice but for the expanding gasses to exit the rear, through the second stage (which is what is driving the compressor in the first stage).

A jet engine is set up to release all of its exhaust as thrust whereas a gas turbine engine will be direct coupled to a generator, gear reducer or propeller (turbo-prop). A turbo-prop is more



efficient than a jet but does not have the top speed potential. All piston aircraft should have converted to the turbo-prop design 100 years ago. Airliners today could operate with much less fuel if they would convert to turbo-props and slow down their airspeeds.

Note: the greatest money-making scheme on the planet is the world's monopolization of the fuels we use and the continued preponderance of fuel guzzling engines that consume it. We have to be on the lookout for overcharging and fraud every step of the way. Aggressive sales tactics been applied every bit as much to the aviation industry as they have been applied to the auto, truck, rail and shipping systems. As cars have been garnished with newer high-tech engines only to have fuel gains negated by four wheel drive, our planes have been garnished with more efficient jet engine designs only to have their fuel gains negated by giving us a fuel-hogging design.

Fraud Within The Airline Industry

In 1955 the public got extra speed at the cost of fuel efficiency, even before the vast majority of people needed increased speed at all. Wouldn't we have been happier with lower cost flights that gave us room to lie down? If we had known they were going to guzzle away our gains by enacting foolish practices that benefitted the oil industry, would we have endorsed the system we got?

The transportation mechanisms in use today demonstrate that our existing vehicle smog laws are total hypocrisy. If the public had known beforehand what kind of system the FAA were planning, they would have seen how utterly useless federal and state smog requirements for automobiles are. If the public had known that the FAA was allowing them to burn upwards of 10 times the weight in

fuel as what they carried in cargo, they would have either thrown them out or stopped paying them any heed.

According to airline industry figures it has taken 50 years since the Constellation to get back down to the same "gallon per passenger-mile" using an Airbus 380 with the latest fuel innovations. Just imagine what kind of performance we could get today using the turbine in a modern version of the Constellation! Since we were never allowed to apply this better engine in such a practical manner we will never know.

But we do know it has never been the intent of the oil industry to reduce foreign dependence on oil production, nor reduce carbon dioxide being added to the air, as they nixed a way that could have cut our fuel consumption in half. Unfortunately financial wizardry does not cure greed.

Jet Planes Do Not Hold As Much Fuel As They Say

Perhaps what the public really needs is for Big Oily to commit to the public good and admit how much fuel it really takes to power modern airliners. My professional analyses confirmed what others have been claiming; an Airbus 380 does not hold 250,000 lb. of fuel in each of its wings as they state in their manuals and sales videos.

In fact it has come to my attention that there is most likely no fuel being stored in the wings of any of our jet powered airliners. And if the airliners are not storing fuel in their wings as they say they are, that would mean there is not enough room on board them to fit the gallonage they claim. And it they're not carrying the gallonage they claim, that would mean they run much more efficiently than claimed.

Are these engines running over-unity by converting water vapor and other gases into elements using harmonics? Could these engines be burning ammonia and methane in the upper atmosphere? Honestly, what is going on. Both ammonia and methane are used to

fill weather balloons, meaning they go up to the heights these jets are flying at, but just try to get figures on the density of the air at these altitudes! The governments are obviously hiding something about our upper atmosphere.

Gas fractions are only available at lower altitudes, thanks to the atmospheric data NASA provides which is limited. For a reference point: Air is 1.205 g/L. It's also pertinent to know that ammonia burns like propane. Take note that between the density ranges of .7 g/L (methane) and 1.33 (oxygen) g/L there exists the following gasses: going up in density from methane: ammonia, natural gas, carbon monoxide, nitric oxide (NO) and Oxygen at 1.33. Now, is there enough oxygen at 30,000 feet to feed a turbine engine?

Yes. Then why wouldn't there be methane and ammonia?

And perhaps we should focus on the use of water vapor which comes in at .804 on the density scale! Might these engines be super heating water vapor, or possibly breaking it into hydrogen and oxygen and combusting it? Certain resonant frequencies break water molecules. Perhaps these engines break water molecules using harmonics created by their spinning blades, then combust them back together.

Everything that is organic eventually rots and produces ammonia, and it's the same with methane. Do we really have any idea how much of these gasses are up high in the atmosphere? It's a fact that Big Oily is afraid of methane and ammonia, since both are superior fuels and both can be made from petroleum stocks. And as you know, when you make methanol from petroleum you get 4.5 times the original amount.

And there are some other possible forms of energy up there that they could be tapping into such as electrical charge. Are these jet engines in actuality positive ion generators (like particles repelling)? Ion power=star trek show=reality.

Global Warming And CO_2

The basic premise of the global warming advocates is that carbon dioxide blankets the earth creating a sort of insulation. But

for those who still have a rational mind note the simple fact that carbon dioxide is heavier than air. It doesn't blanket the earth, it hugs the ground. Much lighter gasses like water vapor, methane, ammonia, nitrogen, hydrogen and oxygen do blanket the earth, but not CO_2.

Never forget that **CO_2 is heavier than air and tends to be concentrated near the ground.** Evidence of this can be seen by looking at the tops of mountains that are higher than 13,000 feet. You will notice that there is nothing growing there. Trees don't grow above the "timberline" because there is too little carbon dioxide.

To label excessive CO_2 as a "cover" is therefore flawed. When we take into consideration the fact that modern air transportation produces CO_2 in amounts that would stifle most accountants and engineers we realize it is even more flawed. According to their own figures, if a 747 is up for six hours it will consume 20,000 to 30,000 gallons, and this produces 20 lb. of CO_2 for every gallon of hydrocarbon fuel burned. Today the airline industry supposedly burns 180,000,000,000 gallons per year. This would produce 3,360,000,000,000 (three trillion) pounds of CO_2 into the atmosphere every year. Really? Is this really happening?

The folks at the Geneva Convention on Climate Change don't seem the least bit concerned with it. In reality, just the fuel numbers alone incriminate Big Oily's plans to fleece the public through inflated, needless fuel consumption and destroy earth's atmosphere in the process.

These are the results: The consumption of fuel by commercial jet aircraft (pound-mile per gallon), and, (passenger-mile per gallon), has been higher than it was in the 1950's! This is a giant waste of technology and a colossal disservice to the people.

And we may have been doubly had. It now looks as though the airline industry has been over-inflating fuel consumption to over-inflate the profits. Keep in mind that our nation has been importing petroleum from the Middle East dating back to the era of the Constellation Airliner. Therefore, that would have been the worst of times to turn up the air speeds and thus consume more of what we

were in short supply of!

Another crazy practice of the industry was fuel dumping before landing to help save on tire wear. It was reported in the LA Times that the forests outside of Los Angeles near Victorville were dying. It was then that the industry actually admitted they had been dumping fuel for 10 years. Such practices certainly give Big Oily's "oil shortages" a different meaning!

The FFA and Big Oily had to be on the same team in order to have gotten away with endorsing an airline industry which dumps fuel onto our earth while at the same time produces billions of tons of carbon dioxide into our atmosphere? All this for the sake of going faster? I don't think so. If they really want to talk about reducing carbon dioxide they should first talk about reducing the combustion of kerosene in our skies.

If they truly wanted to eliminate CO_2 in the atmosphere they could simply change our fuel formulation to ammonia. Ammonia is readily available and can be made from petroleum stocks. It does not contain any carbon atoms yet burns with roughly the same energy as kerosene. Burning ammonia does not produce CO_2.

But why should we care so much? Note that the amount of carbon dioxide in our atmosphere is incredibly low. Compared to Oxygen, which is at 20.9%, Carbon Dioxide comes in at .038%. Animals need oxygen from plants and plants need Carbon Dioxide from animals, right? Now notice that the amount of Oxygen is currently about 600 times the amount of CO_2.

I believe that global warming is a ruse because of the fact that a little extra carbon dioxide going into the atmosphere would in reality help out the plants on this planet. As for the animals, such a small increase in CO_2 in the overall content of atmospheric air would not even be noticed.

If environmental engineers are really concerned about climate change, then there should be absolutely no excuse for operating our airline industry with the type of fuel and fuel volumes currently allowed. In the meantime, we travel as sardines within

flying kerosene-guzzling torpedoes, as if to save on fuel.

The Deep Hidden Truth About Big Oily

And now we can't help but see the hypocrisy: being required to purchase expensive smog-equipped vehicles, subject ourselves to mandatory smog permit fees when in the meantime tons of CO_2 is being dumped on our heads.

In its basic analysis a smog certificate is just a "burning permit" to turn toxic fuel into toxic gas, forced upon us by an industry bent on polluting us. Consider that if all of this equipment and expense was indeed for the purpose of insuring that our air quality is better, then there would be an even greater effort to address the extreme amounts of CO_2 produced by the airline industry. As it is, the climate change advocates require us to accept this industry's indifference to human health.

It is time to expose the oil industry for what it is; a charade of human engineering. Sitting atop it is the fact that petroleum is not in short supply nor ever has been. Crude oil reserves have nothing to do with fossilized animals or organic plant and animal material that was supposedly laid down millions of years ago. Enough time has passed and enough actual production has been achieved that we can fully take the clothes off Big Oily now. The fact is petroleum is an abiotic fluid. If you don't know what that is go to the website: theriseandstallofthepistonengine.weebly.com for a video.

It's time for the world to learn that petroleum is produced deep down between the rock layers of the earth, in massive reservoirs that make the shallow reserves of Kuwait look like tiny ponds. Also check out appendix 2: Stalin and Abiotic Oil, while you're there.

Imagine if everybody knew that in truth the world's supply of petroleum is unlimited? As it is, we all shuffle in step with false high-tech industries like the auto industry, the airline industry, the racing industry, the TV/movie industry, etc. Each is supposed to serve as a backdrop for the scenes we humans act out, but more and more they are looking like training grounds.

CHAPTER 16

Superior Car Designs Now Forgotten

THE FIRST GASOLINE powered car came about in 1887, and as time went on other designs came and went, but the piston engine lived on. Our embrace of the gasoline engine looked inevitable because the gasoline engine itself was so near perfect in function. Over the years we figured it was a superior design than the other types of propulsion that were used and experimented with. But it never was.

In this chapter we will take a look back into the actual history of automotive development in the United States from the time it all began.

The Riker Electric Car

> "When a Riker electric car won the $900 first prize at a track race in Narragansett, R.I., in 1896, and was followed across the finish line by another plug-in entry, Scientific American was amazed. The announced success created surprise, as it had been thought that motors using some form of petroleum were best adapted for horseless carriage use.
>
> But despite being a pioneer of the plug-in car, the Riker Electric Vehicle Company of Brooklyn, N.Y. is

barely remembered today. This is partly because it existed for only a very short time.

Andrew Riker, the company's founder and a pioneer in electric motor design, sold the company to Colonel Albert Pope, the bicycle and electric-car magnate of Hartford, Conn., for a reported $2 million in 1901. I probably would have done the same thing. That's a lot of money. Somebody had lots of money to buy out and bury the electric concept.

The storage batteries were housed in two large compartments that form extensions to the body; one at the front and one at the rear. The front compartment contained a single set of 12 cells, and the rear one held three sets making 48 cells altogether.

During his brief turn in the spotlight, Riker built and sold more than 1,000 electric cars. He also came close to setting a land-speed record in an electric known as the Riker Torpedo. He built the car's electric motor and 72-volt drivetrain. The only significant missing part in the car today is the battery pack, which likely consisted of Edison glass-cased batteries. In its prime, the 1898 Riker could reportedly reach 40 M.P.H. and travel 50 miles on a charge." Clipped article

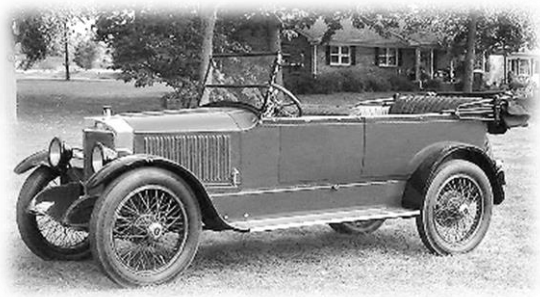
After more than 100 years we haven't advanced much in electric drive technology. Try to imagine how well this type of vehicle would perform today if it had been allowed to evolve with the high tech materials and electronic components that are now available to similar entrepreneurs of this age. Keep in mind this is 1904 and yet the description of the batteries makes them sound as good as or superior to batteries today. By having 48 cells it is

A plush model Riker Electric car in 1904. Note: the driver sits way up in the back of the vehicle and serves more like a chauffeur. Rich people rode in and owned these electric vehicles because of reliability and safety.

possible that up to 96 volts were available to the motors which would be powerful enough to move a small compact car at 60 mph. And what a time to be royal when they had access to talented engineers and entrepreneurs during the 19th and early 20th centuries! Now, let's take a look at another promising form of transportation.

The Stanley Steamer

The Stanley Steamer was a remarkable automobile. The twin brothers who designed it, Francis and Freelan Stanley, were truly innovative in their approach to applying steam technology to the automobile. They took a proven propulsion system that existed for large steamships, trains and industrial machinery and scaled it down into a lightweight package. It was an amazing accomplishment for the time and their design proved beyond the shadow of a doubt that steam powered automobiles were more powerful and reliable than their gasoline engine powered counterparts.



Robert E. Wilhelm's 1918 Model 735B 7-passenger Touring Stanley Steam Car September 10, 2005

Let me explain some of the reasons why using steam for piston powered engines is so much more effective than using gasoline plus air combustion: The first most noteworthy difference is the fact that a piston steam engine produces its maximum torque at 0 rpm.

If you have ever looked at an old steam locomotive you may have noticed that the steam cylinders are connected by rod links directly to the drive wheels. This means that there was no need for a transmission or a clutch. However, both of these components are very necessary in a gasoline engine because it does not begin to

develop much torque until it is up to approximately 1000 rpm.

How would you start out a long heavy train from a dead stop when you have an engine that is turning at 1000 rpm? You put it in the lowest possible gear and then you start slipping the clutch to get rolling. Since trains carry such heavy loads that are so difficult to get rolling, this system is never used. It would result in fried clutches even in conjunction with enormous gear reduction.

Steam power takes care of all that. With steam as your pressure instead of combustion gas, it is much more uniform and controllable. The operator literally opens a valve to let the steam begin to flow into the cylinders and the cylinders start to gradually move just as the steam pressure going into them gradually builds. And this works 4 times as effectives because a steam piston engine has two power strokes per each revolution, whereas a modern gasoline or diesel engine has only 1 power stroke per 2 revolutions.

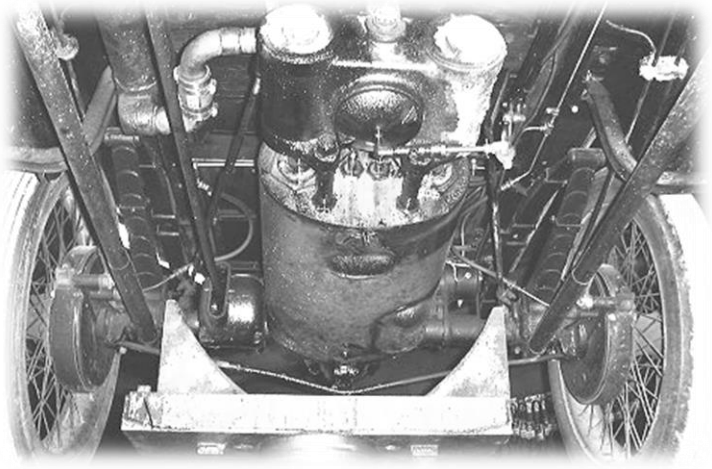
Here's an article on the Stanley Steamer, Courtesy: stanleysteamers.com

> "The **Stanley Motor Carriage Company** was a manufacturer of steam-engine vehicles from 1902 to 1924. They produced their first car in 1897. Production rose to 500 cars in 1917. Steam was generated in a vertical fire-tube boiler, with a vaporizing gasoline (later, kerosene) burner underneath. The boiler was reinforced by several layers of piano wire wound around it, which gave it a strong, yet relatively light-weight, shell.
>
> In early models, the vertical fire-tubes were made of copper, and were expanded into holes in the upper and lower crown sheets. The boilers were safer than one might expect as they were fitted with safety valves. Even if these failed, a dangerous overpressure would rupture one of the many joints long before the boiler shell was in danger of bursting.
>
> There has never been a documented case of a Stanley boiler exploding in use. The engine had two double-acting cylinders side-by-side, equipped with slide-valves, and was of the simple-expansion type. Drive was transmitted directly from the engine crankshaft to a rear-mounted differential by means of a

chain. In order to improve range, condensers were used, beginning in 1915.

A Stanley Steamer set the world record for the fastest mile in an automobile (28.2 seconds) in 1906. This record was not broken by any automobile until 1911. The record for steam-powered automobiles was not broken until 2009.

A Stanley steam engine provides four power impulses per crankshaft rotation similar to an 8-cylinder internal *combustion engine. However, the power is applied uniformly* for a longer length of the stroke than the hammer-like explosions common to gasoline or diesel engines. This provides the steam engine an advantage of more torque in a smaller package over what can be generated with a gasoline engine of equivalent rating.



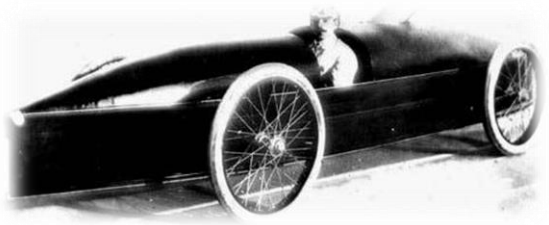
The engine was mounted to the rear drive axle at a nominal 1.5:1 gear ratio between the crankshaft and the differential gear. Transmissions were not required and hence there was no "neutral" or clutch.

Early Stanleys were fueled with gasoline but later models incorporated a two-fuel system of gasoline for the pilot and kerosene for the main burner. Kerosene, provided not only more heat energy per unit than gasoline, it was also safer and less expensive.

To start a Stanley a torch is used to preheat the vaporizing tube and light the pilot making the Stanley Steamer one of the few cars difficult to steal in anything less than 20 minutes. Fuel efficiency was roughly 10-12 miles to the gallon.

Stanley steamers generate steam in drum shaped boilers ranging from 14" to 30" in diameter and from 14" to 18" in height. Unique in their design, no Stanley boiler has ever been documented to explode. The circular boiler walls are strengthened with three layers of exceptionally strong piano wire to provide sidewall strength unequalled in boiler designs for similar ratings. The use of between 500 and 1,000 fire tubes not only efficiently transfers heat to the water, they provide a structural strength to the boiler ends. Operated nominally at 600 PSIG, boilers were factory tested to twice operating pressure before being placed in a car.

Using ball-bearing construction throughout, the Stanley car was capable of speeds in excess of 75 MPH for short periods of time if one could locate a dirt road of the period suitable for the exercise. For later cars a standard automotive radiator served as a condenser returning the steam to liquid and eventual reuse in the boiler. Non-condensing cars required about a gallon of water per mile or two but later condensing cars greatly improved this efficiency to the neighborhood 10 miles per water gallon.



A Stanley car set a land speed record of 127 MPH in 1906 and the following year one was clocked at nearly 150 MPH before it crashed near Daytona Beach. The deck was always stacked against the legitimate and widespread use of steam for powered

vehicles. Later through politics and race restrictions, the Stanley twins were no longer allowed race their cars for reason that they ran on steam.

A remarkable and noteworthy characteristic of the Stanley was its ability to store up energy in a boiler. The boiler was fired up at least 30 minutes before the start of any race for this very purpose. During this time extra pressure would build and be stored in the boiler. Once the Stanley got to the start line she was ready to spring like a cougar, thusly from a dead stop there was no way for a hapless piston engine to keep up with the lightweight and super charged Stanley race car.

The racing version looked like a pointed cigar and it was very streamlined. This is no doubt another feature which the major players wanted to stifle. Since the steamer didn't need a radiator it didn't need to have this ridiculous metal box up front to break the air flow like all the gasoline powered competitors.

Being barred from racing was a tremendous blow to the steamer concept and the Stanley Company as interest in improving the product declined after that. In its time the Stanley was truly an impressive and prestigious automobile. Their self-imposed production limits of 1000 cars per year further hindered availability.

A Stanley steam engine with a 20 horsepower rating operating at a steam pressure of 550 PSIG can generate perhaps between 100 and 125 horsepower for a very short period of time. This is why the use of steam is far superior to the use of petroleum combustion piston engines. A petroleum powered piston engine must be sized 4 times larger than what horsepower is required to drive it at highway speed, and this is necessary in order to have enough power when accelerating from a stop." End

It is estimated that during the 24 years the Stanley Motor Carriage Company built steam cars that somewhere around 11,000 to 12,000 were built. Today there are perhaps 600 Stanley cars still in existence.

The White Steamer

The birth of the White Steamer company began in 1898 when Thomas H. White purchased a Locomobile steam car and found out shortly thereafter that its boiler was unreliable. He enlisted his son Rollin to improve its design and the rest is history. It was an even better steam powered car than the Stanley Steamer because it didn't take nearly as long to warm up.

The reason for this was Rollin White developed a form of water tube steam generator which was way ahead of the Stanley's boiler design. His White steamer operated with superheated steam and took advantage of the properties of steam at higher temperatures. His "boiler" consisted of a series of stacked coils with two novel features. One: the coils were all joined at the top of the unit allowing water to flow only when pumped, which allowed control of the steam generation. Two: Steam was pulled from the lowest coil, closest to the fire. This allowed accurate control of steam temperature.

Rollin White patented his steam generator, US patent 659,837 of 1900. Mysteriously, there was little interest in developing a steam powered car or truck.

The Doble Steam Car

The Doble was an American steam car founded by Abner Doble and manufactured from 1909–1931. The company's latter models with fast firing boiler and electric start, were considered the pinnacle of steam car development.

Today the term "Doble Steam Car" comprises any of several makes of steam-powered automobiles including Doble Detroit and Doble Automobile. Thus they were generally just called

"Doble". Abner and his brothers John, Warren, and Bill built their first steam car comprised of parts taken from a wrecked *White* steamer.

The Doble brothers went on to build a second and third prototype in the following years, further defining the steam car concept which the main auto industry had abandoned. Their third prototype led Abner to file a handful of patents for the related innovations, including a water-condensing system which allowed the water supply to last about 1,500 miles in contrast to a typical steamer's 100 miles. This was just one of the many innovative features of the Doble.

The Doble Steam boiler of 1925.

In 1925 Howard Hughes' desire to experience real speed led him to choose the 1925 Doble Steam Car which would later out-accelerate the mighty Model J Duesenberg of 1930. The Doble could do 0 to 75 mph in just 5 seconds, with its engine turning over at less than 1,000 rpm, and it could sustain speeds of 95 mph right from the factory. Hughes later reached 133 mph by modifying the boiler to produce 2,000 psi. with a 1:1 final drive ratio in place of the standard 1.5:1. This was a death-defying feat considering the tires, chassis and roads of the time.

A Doble would set you back at least $10,000, at a time when you could buy a Ford for $400. As a result, only 41 were built over 10 years. And even then, Abner Doble lost money on every car. In fact, it is estimated that a typical Doble may have cost in the neighborhood of $50,000 to build!

The Tucker

"The Tucker was a uniquely designed car with features that should have been embraced by all of the other automakers. Instead, and unfortunately for the public, the superb features of this car were shunned.

It should be pointed out, the superior features of the design were not dropped merely because the Tucker Company went bankrupt (or was forced out of business by corrupt bankers). The ideas were shunned because they saved fuel.

Tucker took a different tack, designing a safety car with innovative features and modern styling. His specifications called for a water-cooled aluminum block, flat-6 rear engine, disc brakes, four-wheel independent suspension, fuel injection, the location of all instruments within reach of the steering wheel and a padded dashboard.

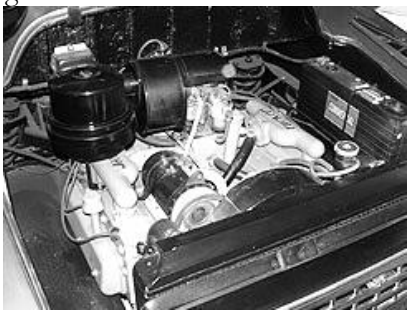
To finish the prototype design and get construction under way, Tucker hired famed stylist Alex Tremulis, previously of Auburn/Cord/Duesenberg, on December 24, 1946 giving him just six days to finalize the design. On December 31, 1946, Tucker approved Tremulis' preliminary design. At this time Tucker changed the name to the "Tucker '48".

Later, Tucker hired the New York design firm J. Gordon Lippincott to create an alternate body. Only the front end and horizontal tail-light bar designs were refined for the final car. These were some of the advantages of the new Tucker design:

1. Engine mounted over rear drive axle.
   This negated the drive shaft of other makes and gave the Tucker the same acceleration using a 6 cylinder engine as the other car makers using V-8s.

2. Flat engine design was more compact and lighter.

This made it an easier fit into the rear of the car. The passengers road more on top of the engine than behind it as in standard automobiles with their large V engines up front. It was found that this dramatically improved the car's handling, especially when breaking; the rear of the car would go down, not the front, as with standard autos of their day.



3. Radiator in rear
   This gave the car designer the ability to design the nose more like an airplane than a freight train, as is now done. It is shameful how modern car companies have failed in every way to make the front end of our cars more streamlined.

4. Streamlined front end
   The fuel mileage of the Tucker was far superior to the equivalent V-8 powered cars of similar weight and passenger space. They could typically get 28 miles per gallon, which was almost double what their counterparts got.

5. Streamlined rear end
   Here's another area that modern car manufacturers have deliberately avoided. Throughout the 100 years or so of development, every car design that featured a sweeping back has been shunned. The reason: it is an effective way to remove drag. Do you see any airplanes flying that have a tail shaped like a cut-off box?

A *perimeter frame* surrounded the vehicle for crash protection. A roll bar was integrated into the roof. The steering box was behind the front axle to

protect the driver in a front-end accident. The instrument panel and all controls were within easy reach of the steering wheel and the dash was padded for safety.

In addition the windshield was made of shatterproof glass and designed to pop out in a collision to protect occupants. The car also featured seat belts, a first in its day. The car's parking brake had a separate key so it could be locked in place to prevent theft. The doors extended into the roof, to ease entry and exit.

The engine and transmission were mounted on a separate sub frame which was secured with only six bolts. The entire drivetrain could thus be lowered and removed from the car in minutes. Tucker envisioned loaner engines being quickly swapped in just 15–20 minutes. Here's another article on the Tucker:

> "Tucker envisioned several other innovations which were later abandoned, such as Magnesium wheels, disc brakes, fuel injection, self-sealing tubeless tires, and a direct-drive torque converter transmission. These were all evaluated and/or tested but were dropped on the final prototype due to cost, engineering complexity and lack of time to develop.
>
> Tucker also initially tried to develop an innovative engine. It was a 589 cubic inches (9.65 L) flat-6 cylinder with hemispherical combustion chambers, fuel injection, and overhead valves that were actuated by oil pressure rather than a camshaft. An oil pressure distributor was mounted in-line with the ignition distributor and delivered appropriately timed direct oil pressure to open each valve at the proper interval. This unique engine was designed to idle at 100 rpm and cruise at 250-1200 rpm through the use of direct drive torque converters on each driving wheel instead of a transmission. These features would have been auto industry firsts in 1948, but as engine development proceeded, problems appeared. The 589 engine was installed only in the test chassis and the first prototype."
>
> The final car was only 70 inches tall but was large and comfortable inside. Tremulis' design was called the most aerodynamic in the world and although it still sported pre-war type fenders it was both stylish and modern.

Tucker 48 Specifications

A total of 51 were built, of which 47 survive now.

1. Engine: H-6 (horizontally opposed), ohv, 335 ci (4.50 x 3.50 in. bore x stroke), 7.0:1 compression ratio, 166 bhp, 372 lbs/ft torque.
2. Size: 128" wheelbase, 219" overall length, 60" height, 79" width, 4200 pounds.
3. Performance: 0-60 in 10 seconds, est. top speed 120 mph

The Owen's Magnetic

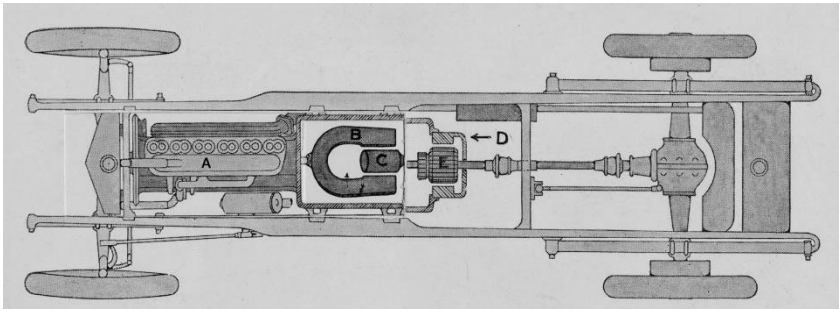
1917 Owen Magnetic Model M-25 7-Passenger Touring Car

I have to admit that before I saw this amazing automobile on the Jay Leno Garage feature I did not know this car ever existed. After looking at the design for a few hours afterwards it became apparent that this was another design that was way ahead of its time. The fact that it has not been referenced in today's hybrid designs and improved upon is most unfortunate.

Designed by Justus B. Entz and first publicly shown at the 1914 New York Auto Show, the electro-magnetic transmission of the Owen Magnetic was a development that came long before its time. While it worked, and worked well, its concept was implemented far before engineering, electronics and materials were adequate to

support it.

The concept is disarmingly simple. The engine is connected to a generator built in unit with its flywheel. Electricity from the generator powers an electric motor attached to the driveshaft. With no direct connection between the engine's crankshaft and the car's driveshaft, power transmission is smooth.



The Owen's implementation added several supplemental functions including five separate settings akin to a selective shift transmission's gear ratios for power transfer between the engine/generator and the driveshaft, and, a bank of 24 volt batteries to conserve excess power, and to start the engine through reversed electricity flow.

Ingenious hardly begins to describe it. But it was too expensive for the general public to afford. A 1917 Owen Magnetic was priced at $3,150, a price higher than a Packard Twin Six.

I invite you to research further about this remarkable car. It is so ingenious and then for it to end up in limited production for a few rich folks, and then forgotten. The Owen's Magnetic was more advanced than today modern hybrid designs, and it represented a superior way to connect our engines to the wheels using magnets and induction coils instead of clutches and transmissions. This concept should have been embraced universally.

Air-Cooled Cars

Air cooled engines are more efficient than liquid cooled

engines but the public has been told otherwise. But just consider their simplicity in that they do not require a radiator and cooling system. Instead of having a heavy block which is fed cooling water by a pump, the air-cooled engine sports a smaller block, cylinders with cooling fins and a fan. It is obviously much lighter in weight.

A modern 4 cylinder air-cooled aircraft engine. This engine can fit above the car's rear wheels eliminating the need for a drive shaft. If it was placed up front, the hood could slope downward giving it an aerodynamic shape. Being air-cooled means light in weight free of a radiator and water pump.

Air-cooled engines in cars have been used extensively overseas in Europe where simplicity and high gasoline prices have dominated the budget priced car market. They have operated successfully in the Volkswagen Bug and Karmann Ghia of the 50's, 60's and 70's.

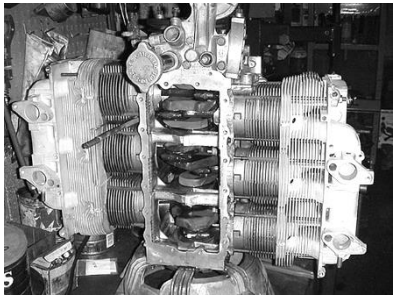
A six cylinder air cooled engine was introduced on the Corvair by General Motors in 1962 as an entry air-cooled car in the United States. Few people think of the Corvair today as an innovative design, but it could have revolutionized the power trains in modern day autos. The design only lasted five years before the program was scrapped by GM. That was not merely a bonehead decision; it was one ordered up by the oil industry because they were lighter in weight and saved fuel.

This was truly an innovative automobile even though it went down as being one of the most dangerous cars every produced by the major auto industry. The safety issue was actually remedied before the public had turned sour on the concept by fitting the rear suspension of the 1966 Corvair with an anti-sway bar. By then it was too late and General Motors dropped the model.

For a number of years during the 60's there was a separate racing class for Corvairs in stock racing as there were no other

models made at that time that could compete at the same level. My guess is that General Motors deliberately released the car in an unsafe design such as to deliberately cause a sales collapse that would be used as a reason to discontinue any further development of the air cooled concept.

Phasing out air cooled cars was a necessary chore that had to be carried out before they sold us on the idea of small compact Japanese-sized cars here in the United States. As a result, today we equate good gasoline mileage with smaller cars. It rarely occurs to us anymore that maybe even a sturdy Pontiac Bonneville-sized car could get 40 or 50 miles per gallon. But it could, with an air-cooled engine in the rear slightly larger than the Corvair. But look how we just assume that if it is a larger or a heavier vehicle, it's going to get lousy mileage. Air-cooled engines would have solved that dilemma.



1964 Corvair. This six cylinder horizontally opposed engine was had the potential to revolutionize the automotive industry. Unfortunately, radiators, upright v engines and long driveshafts were in the plans.

In the next ten pages is a summary of air-cooled cars manufactured after WWII. Take note of some very fuel efficient design ideas that were gradually phased out in favor of larger and heavier drive trains and engines.

Heavy drivetrains combined with stop and go driving, are devastating on fuel mileage.

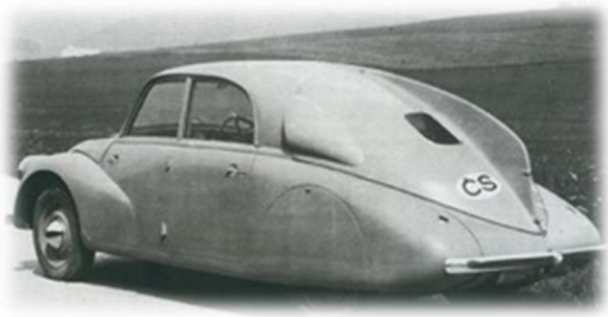
End of an Era:

The Last Air-Cooled Automobile Engines

Article reprinted compliments of: J Kraus

"Air-cooling was quite rare before World War II. In the 1940's only the Czechoslovakian Tatra flat-four and V8 and the VW flat-four were being produced. Following the war, both Tatra and VW restarted manufacturing air-cooled engines, the Tatra V8 staying in production though 1975 and the VW flat-four (redesigned in 1960 along the same lines) lasting through 2003.

After the war Citroën and Panhard joined the air-cooled club with the 2CV and Dyna X. The Porsche 356 débuted with a modified version of the VW engine. Later Fiat introduced the Nuova 500 with an air-cooled



1936 Tatra T97 an air-cooled engine car manufactured in Czechoslovakia up until the 1970's. Note the air intake scoops on the upper sides for cooling. Note also that the entire car has a streamlined shape, there is even a partial tail in the rear. This kind of airstream design does make a significant difference in fuel mileage. Sadly, this concept has escaped the public's scrutiny.

twin. In 1959, Chevrolet introduced the Corvair with a horizontally-opposed air-cooled six-cylinder engine.

Then came the final generation of air-cooled power plants. The

decade of the sixties represented the peak of development of air-cooled engine designs, with significant advancements over those created earlier. All these engines featured overhead camshafts, hemispherical combustion chambers and the ability to rev to 7,000 rpm or higher.

The Panhard featured a two cylinder motorcycle engine that resembled a BMW motorcycle engine. It performed well with plenty of speed and acceleration.

The first genuine 1960's design to come to market was the NSU Prinz 1000 launched in 1963. This was the world's first inline four-cylinder to incorporate air-cooling since the ill-fated 1923 Chevrolet, and the first air-cooled automotive engine with an overhead camshaft.

The engine was constructed of an aluminum block with two sets of iron cylinders cast in pairs, and a pair of twin cylinder heads. The cooling fan was built into the flywheel and a single overhead camshaft was driven by a chain from the nose of the crankshaft. One, 1.1 and 1.2 litre versions were built. Uniquely, the engines were mounted transversely, just behind the rear axle.

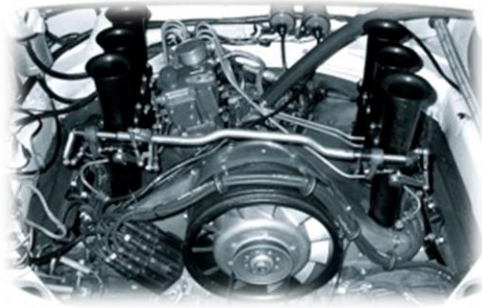
NSU 1000 TTS Engine

NSU 1000, 1963-1973

This was a robust engine with a strong and rigid crankshaft supported by five main bearings. Soon after introduction, the sporting TT variant was launched with twin carburetors and later, the fabled TTS. The TT and TTS versions would happily spin up to 7000 rpm in stock form and were a favorite of sedan racers of the period, facing off against Mini-Coopers and Fiat-Abarths. The NSU's won many European Touring Car Challenge

Division One awards including 1st at Spa in 1967 and 1971 and 2nd at Zandvoort in 1968 and 1970. They also achieved class victories in the 1968 Marathon de la Route and the 1974 German Hillclimb Championship.

Porsche 911, 1964-1998



Probably the most iconic air-cooled engine among enthusiasts was introduced in the Porsche 911 of 1964. Designed by Paul Hensler and Hans Mezger to supercede both the standard 356 engine and the 4-cam Furhmann engine, the horizontally-opposed six cylinder was originally produced as a 2.0 liter with an aluminum crankcase and aluminum cylinder barrels with cast-iron liners. Each cylinder was topped with its own aluminum cylinder head with a fully machined combustion chamber. The single overhead camshafts were chain driven. Cooling was provided by a belt-driven cast magnesium fan surrounding the alternator. The air ducting was molded from fiberglass-reinforced resin.

Early Porsche 911 2.0

Engine with Dual Triple-Throat Weber Carburetors

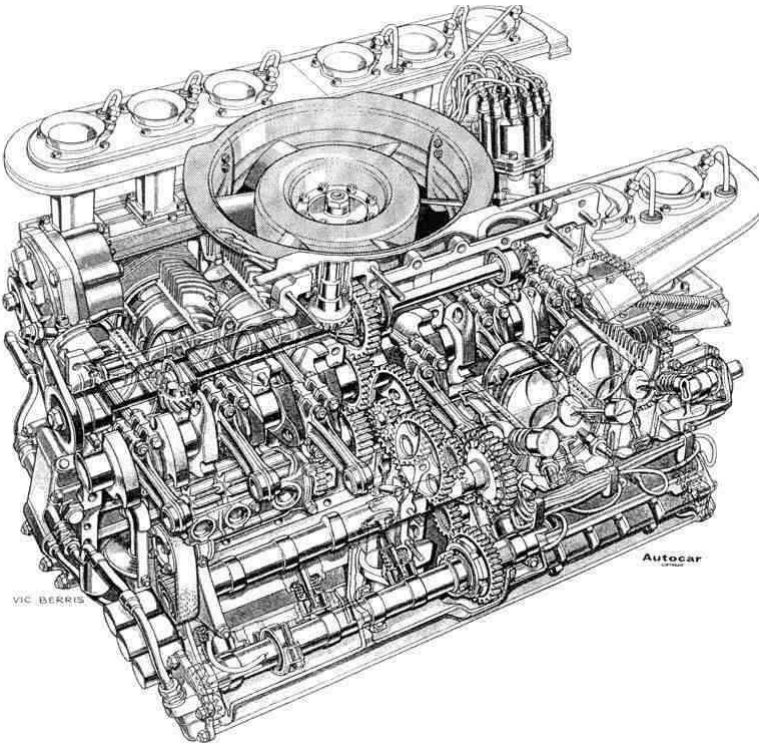
The crankcase of this engine had a dry sump, with a single dual-chamber pump that handled both pressure and scavenging functions. An eight-liter oil reservoir and full flow filter were located behind the right-rear wheel. Porsche immediately took this new engine to the track, installing tuned versions in the 904/6 in 1965 and the 906 the following year. In 1967 a near-identical version to the 906-spec powerplant was made available in the 911R that developed 210 DIN hp at 8000 rpm, an output that would not again be

available to the public in a 911 until the Carrera 2.7 RS of 1972.

For lesser mortals, the first 11S was introduced at the same time with 160 hp at 6600 rpm, achieved through higher compression, more aggressive cam timing and revised carburetion. In the fall of 1968, E and S versions incorporated mechanical fuel injection and electronic ignition. Over the ensuing years the engine grew in steady increments from the original 2.0 litres to 3.6 litres and was developed in both normally aspirated and turbocharged form. It went on to win almost every major race in the world in which it was entered including the Monte-Carlo Rallye in 1968, 1969, 1970 and 1978, the Tour de France in 1970, the Targa Florio in 1966 and 1973, and Le Mans in 1979.

Porsche 917 Engine

This was a 4.5 liter, naturally aspirated 12 cylinder engine in 1969 designed to reduce torsional stresses on the long crankshaft. All takeoffs for power and ancillary drives were taken from the center of the crank.



In 911 fashion, each cylinder had its own individual aluminum head. The dual overhead camshafts, four in all, were gear driven.

Low weight was a key priority. The crankcase was aluminum-magnesium alloy and the cam carriers and cam covers were magnesium. Cylinder barrels were aluminum with Nikasil liners. The connecting rods, rod bolts, fan drive shaft, auxiliary and output shafts and other miscellaneous hardware were made of titanium. The fan shrouding, cooling fan and intake stacks were fiberglass. The cooling fan displaced up to 148 cubic meters of air per minute.

Like the 911, the 917 employed a dry sump oiling system. The system held 30 litres of oil. Each cylinder had dual spark plugs, ignited by two seperate distributors. Fuel was supplied by Bosch mechanical injection. The initial batch of 4.5 litre versions produced 520-580 hp at 8500 rpm, the turbocharged versions generated up to 1580 hp on full boost.

The 917 won Le Mans and the World Sportscar Championship title in 1970 and 1971, the Interserie Championship from 1970-1973 and the Can-Am Championship in 1972 and 1973. During the 1973 season, it won every single race. In 1975 a 917 set a closed course speed record of 356 kph/220 mph at Talladega Speedway, hitting over 400 kph/250 mph on the straight sections.

Citroën GS, 1970-1986

Here is the last production air-cooled automobile; the Citroën GS. The GS went into production in 1970 and garnered the European Car of the Year award in 1971. In accordance with traditional small-Citroën practice, it made use of an opposed engine driving the front wheels, this time with four cylinders. Initially just 1.0 liter in displacement, it was ultimately enlarged to 1.3 liters. The crankcase and heads were cast of

aluminum and the cylinder barrels were cast iron. The cooling fan mounted directly to the nose of the crankshaft in the manner of the earlier Citroën twins. Following another practice dating back to the original 2VC, the connecting rods were one-piece and installed on a built-up crankshaft.

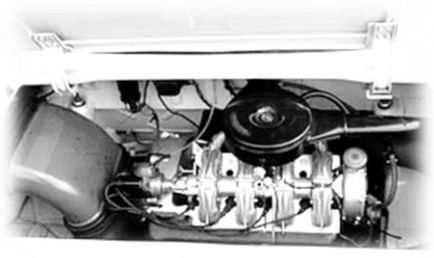
Like the Porsche 911 engine, the GS employed overhead camshafts, but toothed belts rather than chains drove them. Another high revving engine, it produced its maximum power at 6750 rpm. A unique feature of the engine was that the crankcase incorporated a double oil pump; an internal section for the engine oil and an external one to supply fluid pressure for the GS's hydro-pneumatic suspension system. The engine's compact layout allowed for the spare wheel to be stored in the engine bay, a Citroën tradition.

The Citroën GS engine would prove to be the last automotive air-cooled engine. With the increasing emphasis on low emissions, fuel efficiency, larger displacements and heat producing ancillaries; air-cooling was no longer an option. Air-cooled engines traditionally ran slightly rich to reduce combustion temperatures. Unfortunately, this both reduces fuel efficiency and increases hydrocarbon emissions. In addition, the cooling system of most modern cars has to cope not only with engine heat, but the heat generated by the air conditioning condenser and power steering and transmission fluids. These additional loads tip the balance in favor of a liquid cooling system.

While largely renowned as an economical family sedan, the GS also enjoyed a career in rallying, finishing 6th overall at Caledonia in 1973, 4th at the Rally Torre del Oro of Spain in 1975 and 3rd at Cyprus in 1977.

Other Air-Cooled Engines

The Honda air-cooled twin of the 360/600 (1967-1972) and the air-cooled in-line four of the short-lived but technically intriguing Honda 1300 and 1300/9 Coupe (1969-1973) were developed under the direction of none other than the majordomo himself, Soichiro Honda. The 1300 engine was an inline-four with a flywheel fan in the style of the NSU 1000. What made it unique was that unlike other air-cooled engines that utilized sheet metal or fiberglass ducting to contain and direct the flow of cooling air over the engine, the cooling passages of the 1300 were cast into the block and head in the manner of a liquid-cooled design. This served to considerably reduce engine noise from the level normally associated with air-cooling. Installed in the Honda 1300/9, the quad-carb dry-sump unit produced 110 DIN hp. at 7300 rpm.



Had Big Auto been allowed to utilize hot exhaust gasses to run an evaporative air conditioning system the overheating issues related to air cooled engines would have been negated. And, this is a good time to remind ourselves about the use of water injection as not only a way to increase expansion and BMEP but also to provide the cooling benefits of water. This is another viable way to make air cooled engines run cooler that is mysteriously absent from every design other than air-cooled aviation aircraft in WWII.

As for the statement that air cooled engines have to run a bit rich to keep from overheating, don't forget that water cooled engines ran rich for years because of the fact that gasoline detonates when it is run lean. This problem was solved using timed fuel injection and could be used on an air-cooled engine as well. So look for a return of air-cooled engines in the future, when we finally dump gasoline for a non-toxic fuel like methanol, and find we only need engines of half the weight.

CHAPTER 17

Top Fuel Dragsters and Turbo Rocket Engines

Top-Fuel Racing

TOP FUEL RACING refers to a class of drag racing in which the cars are run on a maximum of 85% nitro-methane and about 15% methanol also known as racing alcohol, instead of gasoline. The nitro-methane used to power the engines of top fuel dragsters costs about US$30 per U.S. gallon (US$8/L). Top Fuel dragsters use between 10 and 12 U.S. gallons (38 to 45 L) of fuel for a complete pass, including the burnout, backup to the starting line, and quarter-mile run.

The engine used to power a Top Fuel drag racing car has its roots in the second generation Chrysler Hemi 426 "Elephant Engine" which was manufactured from 1964 to 1971. Although the Top Fuel engine is built exclusively of aftermarket parts, it retains the basic configuration with two valves per cylinder activated by pushrods from a centrally-placed camshaft. I hope you noted the fact that overhead camshafts are not fitted, therefore they must not be a mandatory required for maximum engine power.

The engine has hemispherical combustion chambers, a 90 degree V angle; a configuration identical to the overhead valve, single camshaft-in-block "Hemi" V-8 engine which became available for sale to the public in selected Chrysler Corporation (Dodge, DeSoto, and Chrysler) automotive products in 1952. A piston engine is a piston engine. What makes the big difference here is the fuel.

The NHRA competition rules limit the displacement to 500 cubic inch (8193.5 cc). A 4.19" (106.4 mm) bore with a 4.5" (114.3 mm) stroke are customary dimensions. Larger bores have been shown to weaken the cylinder block. Compression ratio is about 6.5:1, as is common on engines with over-driven superchargers where the supercharger is driven a minimum of 9 times faster than the crankshaft speed.

The current record for the standing 1,000 foot race is 3.62 seconds at 335 mph through the end zone. Note that at these speeds this form of racing has become extremely dangerous! By the way, the track has been shortened from 1,320 feet to 1,000 feet, so it's really not a quarter mile race anymore. If it was, drag cars would be hitting 400 mph and flying through the air like hydroplaning boats.

I am not the biggest fan of the top fuel dragster other than to say they are fun to watch blow-up. But they do utilize some interesting technology. How do they get such huge amounts of horsepower, upwards of 11,000 horsepower, from a 500 cubic inch engine, and, is it possible that we might use some of their ideas to improve the performance of our regular car engines? We need to start with a lesson about nitromethane.

In previous sections we discussed how an internal combustion piston engine has to labor as it pulls massive volumes of

air from the outside and into itself. This is because the fuel won't burn without oxygen. So the fuel is normally vaporized in air first. But remember that typical air contains only about 21% Oxygen while the rest is mostly Nitrogen and Carbon Dioxide. So about 80% of the air piston engines have to pump in and out just to maintain combustion is nothing other than an inert gas that is in the way!

Now it is possible for some fluids to burn without the pressence of air and nitromethane is one of them. I am sure that most have heard the term "nitro-methane", you just weren't privy to the fact that this fuel contains oxygen in liquid form as part of its makeup. So whereas neither diesel or gasoline contain any oxygen within their chemical composition, this fuel does. What that means is when the fuel starts to burn the oxygen is released from a liquid state into a gasseous state and then combusts with the fuel itself. Since Oxygen expands by a factor of 600:1 in going from a liquid state into a gasseous state, the liquid phase is a superior way to get oxygen into the engine.

Nitromethane is an organic compound with the chemical formula CH_3NO_2. It is the simplest organic nitro compound. It is a slightly viscous, highly polar liquid commonly used as a solvent in a variety of industrial applications such as in extractions, as a reaction medium and as a cleaning solvent. As an intermediate in organic synthesis, it is used widely in the manufacture of pharmaceuticals, pesticides, explosives, fibers, and coatings. It is also used as an important component in the fuel for the miniature internal combustion engines used, for example, in radio-controlled models.

The chemical reaction of nitro-methane with oxygen is shown below. Note the presence of two parts of oxygen in each molecule of nitro. This component of nitro-methane is obviously in a liquid state along with the rest of the fuel. This added oxygen enables it to burn with much less atmospheric air, in fact it can even burn without any extra air. You could say that most of the oxygen is put in for free. That's exactly what allows the engine to produce so much more power.

$$\mathbf{4CH3NO_2 + 3O_2 \rightarrow 4CO_2 + 6H_2O + 2N_2}$$

Now let's make a comparison with gasoline fuel.
It takes 14.7 lb. (6.7 kg) of air to burn 1 lb. (0.45 kg) of gasoline.
It only takes 1.7 lb. (0.77 kg) of air to burn 1 lb. of nitro-methane.
An engine running gasoline has to ingest 8.7 times more air than one running nitro.

This is not quite the end of the comparison. Nitro-methane has a lower energy density: Gasoline provides about 42–44 MJ/kg whereas nitro-methane provides only 11.3 MJ/kg.

Combining the two analytical comparisons yields the overall comparison; nitro-methane generates about 3 times the power of gasoline when combined with a given amount of oxygen. Where the top fuel dragster gets most of its horsepower though is by the sheer volume of fuel that is pumped into the cylinders with each stroke combined with a supercharger that can generate 5 bar of pressure.

These simple facts about nitro-methane indicate that it's not that hard to dramatically improve the fuels that we currently use by simply adding oxygen into the molecular structure. I can't help but wonder why there isn't one single oil company that is willing to give us a better fuel than gasoline or diesel, when all they have to do is bind some oxygen into the formula. By the way, when you do that you end up with alcohol, of which there are many types.

Secondly, if we had an oxygenated fuel we could dramatically reduce the size of the engine as it would not have to inhale so much air in order to burn the necessary fuel to make the necessary power. If a dragster can get 11,000 horsepower from a 500 cubic inch engine, then perhaps we could be able to design a 5 cubic inch engine that produces 80 horsepower. OK. Be conservative and make it 10 cubic inches so it will last. Just imagine having such a small engine in your compact sedan.

Thirdly, the use of a super charger to boost the intake air pressure would also aid in the development of powerful engines in smaller sizes. Since air intake is such a limiting facet of piston engines, superchargers should be standard equipment.

The Beginnings Of Nitro-Methane

Although nitro-methane did not make its appearance onto the American racing circuit until the early 1950's it had been invented much earlier as it was tested as a fuel for torpedoes as early as 1870. It has been produced industrially ever since. The most common method of manufacture is by treating propane with nitric acid at 350–450 °C (622–842 °F). This results in an exothermic reaction that produces four industrially significant nitroalkanes: nitromethane, nitroethane, 1-nitropropane, and 2-nitropropane.

The reaction involves free radicals, including the alkoxyl radicals of the type $CH_3CH_2CH_2O$, which arise via homolysis of the corresponding nitrite ester. These alkoxy radicals are susceptible to C—C fragmentation reactions, which explains the formation of a mixture of products.

Although available at moderate cost, nitromethane can be prepared using other methods. It can also be used as a monopropellant, i.e., a fuel that burns without added oxygen. The following equation describes this process:

$$\mathbf{2\ CH_3NO_2 \rightarrow 2\ CO + 2\ H_2O + H_2 + N_2}$$

Nitro-methane has a laminar combustion velocity of approx. 0.5 m/s, somewhat higher than gasoline, thus making it suitable for high speed engines. It also has a somewhat higher flame temperature of about 2,400 °C (4,350 °F). The high heat of vaporization of 0.56 MJ/kg together with the high fuel flow provides significant cooling of the incoming charge (about twice that of methanol), resulting in reasonably low temperatures.

In drag racing, nitro-methane is usually used with rich air/fuel mixtures because it provides power even in the absence of atmospheric oxygen. When rich air/fuel mixtures are used, hydrogen and carbon monoxide are two of the combustion products. These gases often ignite in the exhaust pipes. As they are very rich mixtures of the still burning fuel the flames can be quite spectacular. Very rich mixtures are necessary to reduce the temperature of combustion

chamber hot parts in order to control pre-ignition and subsequent detonation. Operational details depend on the particular mixture and engine characteristics.

Hydrazine

Hydrazine is an inorganic compound with the formula $\mathbf{N_2H_4}$. It is a colorless flammable liquid with an ammonia-like odor. Hydrazine is highly toxic and dangerously unstable unless handled in solution. Approximately 260,000 tons are manufactured annually, so the stuff is available.

Hydrazine is mainly used as a foaming agent in preparing polymer foams, but significant applications also include its uses as a precursor to polymerization catalysts and pharmaceuticals. For our interests hydrazine is used in various rocket fuels and in F-16 fighters to provide an emergency power package. The famous WW2 German ME163 rocket plane used hydrazine mixed with 90% hydrogen peroxide. A mixture containing 90% peroxide, when sprayed on a silver screen, breaks down to form 1300^0F steam! It has been used for compact steering rockets by NASA and the military. So the stuff definitely packs some power.

A chemist named Theodor Curtius synthesized free hydrazine for the first time in 1889, meaning hydrazine is nothing new to the oil/auto industry. Today hydrazine is produced in the Olin Raschig process from sodium hypochlorite (the active ingredient in many bleaches) and ammonia, a process announced in 1907. This method relies on the reaction of chloramine with ammonia:

$$\mathbf{NH_2Cl + NH_3 \rightarrow H_2N\text{-}NH_2 + HCl}$$

Another route of hydrazine synthesis involves the oxidation of urea with sodium hypochlorite:

$$\mathbf{(H_2N)_2C{=}O + NaOCl + 2\ NaOH \rightarrow N_2H_4 + H_2O + NaCl + Na_2CO_3}$$

The most noteworthy way to make Hydrazine though is to synthesize it from ammonia and hydrogen peroxide. This is accomplished according to the Pechiney-Ugine-Kuhlmann process, using the following formula:

$$2NH_3 + H_2O_2 \rightarrow H_2N\text{-}NH_2 + 2H_2O$$

And not to be left out is the Atofina–PCUK cycle. Here hydrazine is produced in several steps from acetone, ammonia, and hydrogen peroxide. Hydrazine can also be produced via the so-called ketazine and peroxide processes. As you can read, there are many ways to make this extremely powerful fuel which would have given Big Oily flexibility in available feedstocks. I'll bet you already know why they don't let us have it.

Perhaps at this moment you would like to learn how to make Hydrogen Peroxide, H_2O_2? After all, this looks like possibly the ultimate formula for energy. Why? Because it contains both Hydrogen and Oxygen, and they are in a stable liquid state. When you see this formula you have to wonder why anyone would try to run a vehicle on gaseous Hydrogen from a compressed tank which is dangerous, expensive and space-robbing when they could just use this liquid version of it.

Turbine Jet Engines

This unique section documents a brilliant compact design formerly known as the Turbonique turbine engine. These add on automotive power output boosters made the standard reciprocating engine look like the heavy fuel-robbing dinosaur that they were. Here's from an article:

> **Thermolene** was the trade mark under which Turbonique Inc. marketed **N-Propyl Nitrate.** It was sold in 8 pound cans at a retail price of $ 12. A 475 pound drum would have cost you $ 437 back in 1966. It is not a more hazardous liquid than gasoline or kerosene but it does have a far more

energetic yield. According to racers: Thermolene fuel in itself had some weird properties. *"It could be stored in jerrycans, in the shadow. It had, nonetheless, some peculiar side effects: it was irritating to the skin, it would melt most plastics, rubbers, etc. and it would react under certain circumstances if in contact with some metals, like mild steel, in the presence of water."*

The Fuel System And Installation

The propellant installation for a Turbonique engine required 3 containers: a high pressure cylinder containing oxygen (needed for starting the flame only), another high pressure cylinder containing nitrogen, equipped with a regulator valve. This nitrogen was injected into the third cylinder so as to create a high pressure inside it that would expel the Thermolene towards the burner in the engine. The third cylinder was the "the fuel tank" and was the biggest of all three. Once the pressure was released it could be opened to refill. This third cylinder had to be upright all the time whilst the two other could be laid down on their side.

We know that oxygenation of a fuel can have a dramatic effect on the efficiency of an engine. This section will also document that oxygenated fuels have not only been manufactured for many years but have also been tested thoroughly where they proved superior to non-oxygenated ones.

False reports tended to indicate how expensive turbine engines were to manufacture. This section will document that a high horsepower device can be manufactured cheaply and with materials we already possess.

The Interesting Short Story Of Turbonique

The architect of Turbonique's greatness was Mr. C. E. "Gene" Middlebrooks Jr., a native of Jonesboro, Georgia. He

studied mechanical engineering at Georgia Tech where a former colleague described him as having "an innovative mind and could solve just about any mechanical problem."

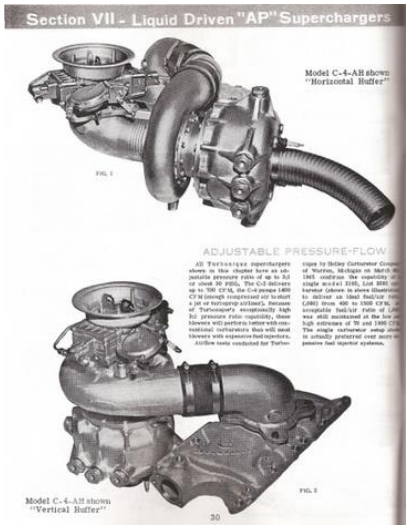
He turned out to be in the right place at the right time; when Middlebrooks graduated from college, for example, the Cold War was in full swing. He landed a job with aerospace contractor Martin-Marietta working on the company's propulsion system for the Pershing nuclear missile program.

In 1957 the Soviets surprised the United States with the launch of Sputnik, the world's first artificial satellite. This helped to spark the space race, lending urgency to Middlebrooks' work at Martin. This is where he gained rocket experience.

For a brief period Middlebrook owned his own company which produced the products shown on the next few pages. Sadly, none of his innovative design ideas were allowed to go forward within the domain of the public. His operation mysteriously shut down and not much has been heard from him since.

Turbonique Auxiliary Power Supercharger

If the Turbonique Auxiliary Power Supercharger sounds amazing to you, bear in mind that the Turbonique AP superchargers were at the **mild** end of the Turbonique catalog. Unlike conventional super-chargers (which are driven by a belt from the crankshaft and take some crank horsepower to run), and unlike conventional turbo chargers (which use the exhaust energy to spin up the turbo), the Turbonique Auxiliary Power Supercharger had its own fuel source to power itself. When the switch was flipped, liquid oxygen and a rocket


Section VII - Liquid Driven "AP" Superchargers

Model C-4-AH shown "Horizontal Huffer"

ADJUSTABLE PRESSURE-FLOW

Model C-4-AH shown "Vertical Huffer"

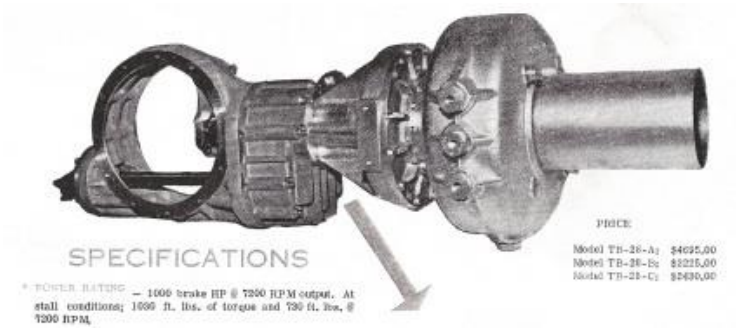
30

fuel named Thermolene were fed to the supercharger.

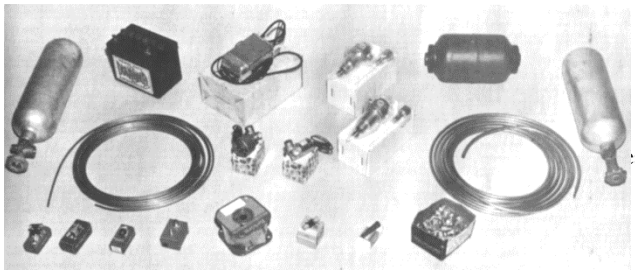
Reported testing in 1963 on a Chevy 409 showed a horsepower gain from 405 horsepower stock, to a mammoth 835 hp. with the supercharger engaged.

If the Turbonique AP supercharger wasn't enough power for you, then you could upgrade to the Turbonique Drag Axle.

The Turbonique Drag Axle



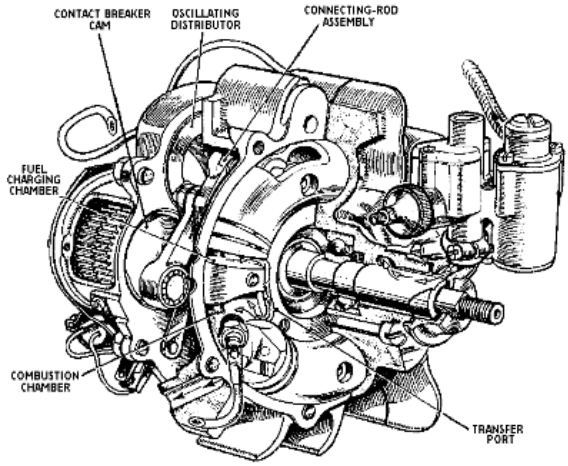
The Turbonique Drag Axle (pictured above) was geared to the rear differential and in addition was a thermolene powered rocket nozzle. At the touch of a button, it would add an extra 1,300 horsepower! The power was only partly thrust power like a rocket engine on a plane. Most of the power was passed through the differential housing to the rear axle. This gave many cars enough horsepower to smoke their tires the whole way up the 1/4 mile using 1960's drag slicks.



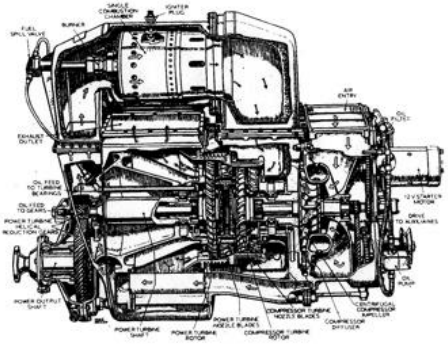
Shown above are the necessary components of the fueling system: A high pressure solenoid valve and spring, an on-off soloniod valve placed on the oxygen line close to the turbine burner, a hand valve to set the operation pressure inside the Thermolene tank, a solenoid operated valve to open or close the Thermolene supply into the burner spout (the shut-off valve), a pipe from the O^2 cylinder to the engine, a pipe from the nitrogen cylinder to the thermolene tank and a pipe from the Thermolene tank to the engine.

The last part of the Turbonique power differential was the Electric wiring and switches. One switch sets the electrical system under tension in ignition stand-by, a second switch triggers the flame. Another device, called the control unit is in fact a box containing the necessary solenoid contacts and connections to open the oxygen and the thermolene inputs, and, after a preset time gap, cut the oxygen arrival.

For the micro-turbo engines the ignition was made using a mere spark plug that was, in the case of the chargers, plugged to the coil hi-tension output. This spark plug was placed right in front of the thermolene feeding spout, in the flame chamber. The continuous spark of the plug kept up a "flowing explosion".



Here's some more engine designs. Top left: the BSA Torroid engine 1955. At right, Raphial Morgado's Massive Yet Tiny (MYT) engine, which packs by far the most powerful punch for its small size, compared to other diesel engines in the world. Below: the British Rover turbine engine which was built in 1951. It held a world speed record for a gas turbine powered car in 1952 with a speed of 152.691 mph.



CHAPTER 18

Better Fuels

AS YOU HAVE progressed through this book your mind has been exposed to innumerable mechanical contraptions and massaged by concepts like combustion gasses and compression ratios. Now we are going to focus on liquids and this is going to necessitate some chemistry. This is where I worry that I might start to lose you as an interested reader. I guess that's why I put this chapter at this point in the book. Still, I also wish that I had read this chapter before I ever started to tinker on my car's engines to get more horsepower out of them. Now I know how easy it would have been. I could have saved the camshafts, pistons, carburetors and headers by just adding some oxygen to my fuel.

There are many fuels that are better than gasoline. The most obvious one is a mixture of gasoline and water. As I discussed in Chapter 2, this fuel is significantly better than straight gasoline, not only in performance but in reducing exhaust gas emissions. Hundreds and thousands of people, having observed that engines worked better in damp weather, have as a result experimented with adding water to fuel or to the engines. In the process they have witnessed that their engines produced more horsepower, especially under high loads. So this is no joke.

In the USSR water was routinely added to improve the

horsepower in tractor and aircraft engines during fuel shortages, caused by the many wars that have ravaged the people since the Bolshevik Revolution. And every airplane buff knows that water injection was used on the WWII Corsair. So, why are we so asleep today regarding water/fuel mixes?

Aquazine And Russia

During the 1980's, a Russian scientist named Eduard Isayev, unaware of the existing tests and trials that had already been performed using water emulsions, set out to design an alternative fuel. Shortly thereafter he solved some of the major problems with existing fuels (detonation, high temperature, poor fuel economy, etc.) by using water, emulsifiers, naphtha and gasoline to form a stable emulsion that performed superior to gasoline. He called the new fuel Aquazine, for which he holds the patent. (note: as of 4-1-18 his name has been scrubbed from google).

Next time you are in a discussion with an oil executive, an automotive engineer, a mechanical know-it-all, a nuclear physicist, a university research PhD, etc. and they are blathering on and on about petroleum, alternate energy and what we should do for the future, be sure to ask them what they know about **Aquazine** and why we are not using it. This is something any person willing to discuss energy from other than a child's viewpoint should know about, but they don't.

Aquazine is a lead-free high-octane fuel made by mixing water either with refined products or with naphtha using an emulsifier. Aquazine contains from 10 to 30% of water and is suited to petroleum powered engines with spark-plug ignition and requiring few if any adaptations. **Aquazine** is an excellent alternative to various types of gasoline, aviation and diesel fuels. When used in piston combustion engines it reduces carbon-oxide gasses by 80%. In addition nitrogen oxides are reduced by 30%.

Other advantages of **Aquazine** are its antiknock rating which yields higher engine capacity due to a higher degree of compression. In other words, engines could be built much smaller and this would

result in the engine's rotational parts being much lighter. A smaller, lighter engine with "reduced rotational inertia" would have dramatically enhanced acceleration and performance; especially in stop and go conditions that motorists must contend with today. It would also dramatically increase fuel efficiency.

Plans are in the works by the inventor for an alternate type engine that will utilize a water content of 70%. Still, the public as a whole remain asleep with regard to fuel-water technology, even in the face of a huge trade deficit caused by the importation of foreign crude.

How is it possible that such a simple and effective form of fuel enhancement could be swept under the rug as if it never happened? Couldn't we call this treason against the citizens of the United States (for running up our debt?)

Aquazine would be an obvious and better alternative to various types of gasoline and aviation fuels. Its advantages over traditional gasoline include having a lower content of harmful substances not to mention a total absence of lead compounds.

When used, the exhaust gasses from gasoline-powered vehicles would contain only a fourth of the typical levels of carbon dioxide and 25% of the nitrogen oxide. Other advantages of Aquazine are increased antiknock rating, reduced combustion exhaust gas by 200°C and substantially higher engine power due to a higher degree of compression.

This is not some "super technology" as finding an emulsifier is not difficult. I'll give you the most obvious example: detergent. An alkyl phenol detergent works the best, if you can find it. The optimum amount of water to add is considered to be about 10%. If more is added the engine's capacity starts to fall. As the water ratio is moved above 30% problems with engine startup begin.

For this reason, if you want to run a gas/water emulsion, keep two fuel systems in place such that you can supply straight gasoline into the engine at startup. Once the engine is warmed up the emulsified fuel starts to work in your favor.

One more factor needs to be stressed: it is a must to use distilled water in water-fuel emulsions. In addition, catalytic discs

made of nickel or platinum screwed to the underside of the combustion chamber further act to break water molecules into hydrogen and oxygen which is re-combusted.

Alkyl phenols dramatically aid in the formation of a stable water-gasoline emulsion. Check for laundry detergents which contain it as a source for it. In addition, manganese oxide is an effective catalyst when used in the presence of water, hydrogen peroxide (50% technical grade or better) and methanol. These are all good components to get your hands on in the event of a serious fuel shortage and subsequent price rip-offs.

Learning More About Liquid Fuels

I didn't understand organic chemistry until my oil company experience enhanced my understandings of hydrocarbon fuels. My actual knowledge of chemistry came from learning what different viscosity oils were, and what kinds of additives were put in to supplement anti-wear. As I researched the chemical connections that exist between hydrocarbon fuel and hydrocarbon spent-fuel, it became possible for me to evaluate the connections between organic chemistry and fuel-combustion chemistry.

Perhaps I should have known this all before. Then again, perhaps I did not make the connection because my college curriculum was organized so that I wouldn't? Remember folks, this is a big game. The chemistry of hydrocarbon fuels, when compared to the chemistry of organic matter is not just similar, it is dramatically similar. This is what should have been emphasized!

There are many fuel combinations that are possible just using hydrogen and carbon atoms (hydrocarbons). As the consumer we see them as natural gas, propane gas, aviation fuel, gasoline, kerosene and diesel fuel. For racing and only for racing we can purchase pure methanol (CH_3OH) in 55 gallon drums.

Like methanol, these fuels can be dramatically enhanced with the additions of Oxygen and Nitrogen using simple chemical processes. What is noteworthy about this statement is the fact that both oxygen and nitrogen are the two most prevalent gasses in the

atmosphere, making it both abundant and free. You see the power of these ingredients working at Indy and drag-racing strips.

Most of the processes that are used today to combine oxygen and nitrogen atoms into hydrocarbon fuels were discovered in the mid to late 1800's. One of these, the Haber process, converts hydrocarbons into ammonia, NH_3. This would have been a great fuel to use. But notice that NH_3 is just hydrogen power, not hydrocarbon power. Somehow the oil industry knew not to steer the public in this direction if they were to have any chance of establishing a fuel monopoly. The oil industry had great chemists working for them. So now note that there is not the slightest presence of Oxygen in the chemical makeup of hydrocarbon fuels and that is the first issue we will address.

Composition of air in percent by volume, at sea level at 15°C

Nitrogen -- N_2 -- 78.084% Oxygen -- O_2 -- 20.9476%
Argon -- Ar -- 0.934% Carbon Dioxide -- CO_2 - - 0.0314%

Neon -- Ne -- 0.001818% Methane -- CH_4 -- 0.0002%
Helium -- He -- 0.000524%

Krypton -- Kr -- 0.000114% Hydrogen -- H_2 -- 0.00005%
Xenon -- Xe -- 0.0000087%

Ozone -- O_3 -- 0.000007% Nitrogen Dioxide -- NO_2 -- 0.000002%
Iodine -- I_2 -- 0.000001%

Carbon Monoxide -- CO – trace Ammonia -- NH_3 -- trace

Reference: CRC Handbook of Chemistry and Physics, edited by David R. Lide, 1997.

As you can see most of the Earth's atmosphere is made up of only five gases: nitrogen, oxygen, water vapor, argon, and carbon dioxide. Several other compounds also are present. Although the table above does not list water vapor, air can also contain as much as 5% water vapor and it commonly ranges from 1-3%. Thus water vapor is the third most common gas.

It occurs to very few people that nearly 80% of the air that we breathe is nitrogen which behaves similar to an inert gas within

the piston combustion engines of the cars we drive. You see the problem. Almost 80% of the air the engine has to ingest is worthless Nitrogen. This means about 80% of the work that the piston engine performed in the process of ingesting compressing and expelling exhaust air is wasted work.

Nitrogen adds nothing to the power of the combustion process because there is nothing in the fuel mixture to react with it. There is the presence of oxygen from the air that was drawn in and combusted, and some of this oxygen will be lost to nitrogen rather than being available to combust the fuel. The formation of NO and NO_2 during the combustion process does not contribute to power; it actually robs power and in the process produces the nitrous oxides labeled villainous by the State Board of Environmental Quality. So in the process of burning hydrocarbon fuels like gasoline and diesel fuels with air, the main component of air, nitrogen, does two things: One, it gets in the way resulting in wasted work. Two, it leads to harmful exhaust pollution. This clearly illustrates that the current formulations that are utilized, non-oxygenated hydrocarbons, are not just a poor choice for the world's fuel; they are a horrible choice.

In several of the proceeding chapters you were introduced to oxidized fuels, that is, fuel that has oxygen molecules within its formula in the liquid state. You learned that oxygen expands when it goes from a liquid to a gas by a factor of 600 times the liquid volume. So there is no question that it is a lot easier to get oxygen into an engine by placing it first in a liquid state within the fuel chemistry than by forcing the engine to suck in gobs of air, of which only 20% is oxygen anyway. Gasoline is a poor fuel in any engine for the reason that it has no oxygen in its makeup, and thus it should not be used in modern times.

Currently in the United States gasoline is being blended with either MTBE or ethyl alcohol. Note; both of these chemical gasoline additives contain one oxygen atom per molecule. So to say that today's fuel is non-oxygenated is not exactly correct, since they do contain about 10% by volume oxygenated additive. It does dramatically help with smog but it's not nearly enough to make much difference in vehicle power or fuel mileage.

How Important Is Carbon?

We are all programmed to embrace the concept and accept the necessity of hydrocarbons as a source of energy, but now it's time to take another look at the true energy situation that exists here on earth. Now here is another remarkable fact about hydrocarbon based fuels; the carbon atoms themselves are not the source of energy during combustion. The source of the energy during combustion comes from the hydrogen atoms coming lose from carbon atoms and igniting with oxygen that produces the combustion expansion. Carbon goes in bonded to hydrogen and it comes out bonded to oxygen so there is no real energy release from carbon. It is the energy released from the hydrogen that counts. When we get into the section on hydrazine (N_2H_4) and hydrogen peroxide (H_2O_2) you will thoroughly understand why to never equate "hydrocarbon energy" with "potential energy". Much better would be to equate "hydrogen-oxygen" energy with "potential energy".

Gasoline is the most common fuel so I will start with it from which to establish a base line. And it is a low baseline at that. Gasoline has many chemical formulas, as you learned in Chapters 1 and 2, because the feed-stocks of gasoline come from a rather broad $300F^0$ temperature range. Gasoline could be dramatically improved if the industry would just narrow the current temperature range.

The typical formula for gasoline is written C_8H_{18}. However, because of the broad range within the temperature boundaries, the number of carbon atoms will actually range from 6 to 12. Thus there should be many formulas to describe the combustion of gasoline. The formulas would need to encompass a range from: C_6H_{14} up to $C_{12}H_{26}$. Well, forget about that ever happening. Instead, most always will the equation for the combustion of gasoline with air be written as follows:

$$2C_8H_{18} + 25O_2 =>> 16CO_2 + 18H_2O$$

Now in the illustration above the combustion of gasoline only takes into consideration the combustion of Octane. It looks great on paper, but did you notice that the above reaction did not yield any carbon monoxide? We certainly know that car exhaust contains it and here is the equation for it:

$$2C_8H_{18} + 17O_2 \Rightarrow 16CO + 18H_2O$$

But then they tell us not to worry because this reaction seldom happens. Sure, ya, em huh, right! Close your garage door with your car's engine running sometime and then tell me that this second reaction doesn't happen that "often". Are you starting to wonder how they ever got away with such slack chemistry analyses when they had so much expertise and knowledge to do better?

Because of all the variations of chemical hydrocarbon atoms that are allowed to be present in gasoline, chemists would have to write at least twelve more equations than this to accurately describe all of the chemical reactions that occur when combusting gasoline within an engine. But even this would not take into account many more possible formulas, such as benzenes which are in rings rather than chains. Have we ever seen these actual equations worked out and summarized? Do we know what kinds of gas byproducts they produce?

From an environmental standpoint, gasoline has to rank as the very worst possible choice for a fuel for the simple reason that there are so many chemical variations of it that precise control of combustion and the formation of undesirable by-products is virtually impossible.

Ammonia, NH_3: No Carbon Atoms Yet Just As Powerful As Propane, How?

For the past 120 years the oil/auto companies have managed to convince us that we need hydrocarbon fuel. But what about

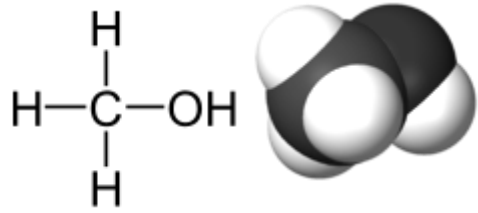
ammonia, NH_3, which produces about the same power as propane (both liquefied under slight pressure) and there is no carbon present in it at all? What about Hydrazine, N_2H_4, which is extremely powerful when burned in air and again no carbon atoms are present? Who ever said we need hydrocarbon fuels in the first place? Was it an oil company representative by chance?

The truth is: When there are no carbon atoms as part of the fuel makeup, it is impossible to make carbon dioxide or carbon monoxide as byproducts of the reaction. This point is especially important when discussing global warming or smog pollution. The fact that ammonia reduces both CO_2 and smog, CO, should be foremost on their minds.

The successful use of Ammonia to power our cars in the past proves that the power from the combustion of any hydrocarbon is a result of the hydrogen atoms combining with oxygen atoms thus forming water. It also proves that there is no significant energy gained or released from the carbon molecules going from octane (for example) to carbon dioxide. And there is nothing in any scientific literature that says that we should use hydrocarbons as fuel in the first place. So from now on, when we go looking for possible fuels we should look for ones that have lots of hydrogen and oxygen in their formulas. Non oxygenated hydrocarbon fuels should be relegated amongst all of the available fuels that can be burned to produce heat, and this category includes bio-mass and trash. As for our automobile engines: it is high time to give us fuels that **don't** contain carbon in order to stop forcing people to tolerate carbon monoxide in their cities, towns and school playgrounds.

Alcohol: Legends And Myths

Now that we've established the fact that gasoline could be easily improved upon as a fuel by adding oxygen to its current formula we will consider the easiest way, and that is to convert it to alcohol. You will note in the formula for methanol alcohol above that it is identical to methane gas except for the presence of that one oxygen atom. So



in order to produce methanol from methane gas the only missing ingredient is oxygen and this is available from the air or from water in unlimited quantities and free of charge. There exists in water all of the oxygen and hydrogen we will ever need. In fact we learned in the Introduction that gasoline can be combined with water using a nickel catalyst, heat and pressure to produce a fourfold increase in fuel volume than which you started with. The oil industry does not want us to know this, you can be sure! It is possible with the right reaction to transform petroleum methane gas into alcohol very cheaply. From Wikipedia:

> "In 1923, the German chemists Alwin Mittasch and Mathias Pier, working for BASF, developed a means to convert synthesis gas (a mixture of carbon monoxide, carbon dioxide, and hydrogen) into methanol. A patent was filed Jan 12 1926 (reference no. 1,569,775). This process used a chromium and manganese oxide catalyst, and required extremely vigorous conditions—pressures ranging from 50 to 220 atm (3200 psi), and temperatures up to 450 °C (842 ^{0}F).

In this case the chemists first used combusted hydrocarbon gasses, CO and CO_2, then added hydrogen to somehow end up with methanol alcohol, CH_3OH. The process demonstrated a valuable relationship between hydrocarbon gasses and alcohol. Too bad they never taught this in public schools.

Forget About Making Ethanol Alcohol From Corn.

Whenever a discussion of fuel occurs and the subject of comes up, remember; only drinkable alcohol needs to come from fermentation. Granted there are some foreign countries that have a surplus of certain organic crops like beets or corn that can be

fermented into alcohol and used as fuel. But this currently held notion that alcohol for fuel has to come from the fermentation of a food like corn, which is a needed human food staple, is horribly misguided.

We should forget about the use of using food stocks to produce alcohol-based fuel. There are at least four grades of alcohol. The first, methanol alcohol is a smaller molecule than ethanol and makes a better fuel in the first place than its drinkable cousin. Methanol can be made from combustion gasses plus hydrogen and it can also be made from hydrocarbon gas, like methane, as well as hydrocarbon liquids, like gasoline.

I don't deny the fact that the cheapest way to make ethanol is by fermenting the sugars left behind in shrub-like plants that have been pressed of their oils. And in chapter 12 I discussed another cheap way to make alcohol through the use of microbes (bacteria needing CO_2) to eat exhaust gasses (CO and CO_2) thus producing lipids and fats. The fats can be pressed out and turned into bio-diesel, or, the fats can be broken into short chains and combined with H and OH, thus to make alcohols of varying carbon lengths.

It should be taught how methane is a miracle of design, making possible a circle of organic life which includes carbon, phosphorus and nitrogen combining with hydrogen and oxygen to produce all of the living plants and animals. They are all built of fatty acids, lipids, proteins, carbohydrates, etc. In the process of producing organic methane, which rises up to combine with sunlight and oxygen in the atmosphere, both water and carbon dioxide are produced. Completing the circle we have the plants taking in CO_2 and water to produce hydrocarbon liquids that don't look any different than their crust-produced counterparts known as petroleum hydrocarbon.

When alcohol is to be used as fuel, whether it be methanol or ethanol, it should first come from exhaust stack discharge gasses, secondly from surplus petroleum gasses which are being flared and thirdly from existing gasoline stocks (remember you get a fourfold increase in yield by combining it with water).

Virtually all of the ammonia produced today is made from

natural gas otherwise flared off, so this is where it should come from when more is needed. There is a world surplus of petroleum industry gasses as well as factory produced gasses.

Alcohol For Fuel And Prohibition

After all this time you probably thought that Prohibition was about the people's tendency to overdrink, and that our benevolent government was honestly trying to reduce a misguided people's obnoxious behavior. They did it so that we would live better lives and live longer too. They did it out of love. Just when has our government or Big Oily ever done anything out of love?

The fact is, as early as 1923 Big Oily knew how to reduce their need to do constant drilling. At the same time, they knew how to clean up our nation's fuel requirements and improve the whole energy program by using existing petroleum sources as feedstock to produce a much cleaner energy like alcohol. It is not coincidental that this is the same time The Prohibition Act was in effect in the United States.

In case you were wondering who is in control; the government or Big Oily, I would suggest that you consider that they are one in the same. The fact is we now know that the purpose of this ridiculous law, backed by Big Government, was so that Big Oily could get control of the alcohol market.

And so it was, by the time Prohibition laws were repealed ten years later, they had essentially shut down all of their alcohol fuel competitors. It had nothing to do with drunk women or men cussing in public. We went back to doing the same thing, in that regard.

Methanol Verses Ethanol Alcohol; Quick Lesson

The basic difference between methanol and ethanol is that ethanol is made by fermentation. Thusly, ethanol is usually made using organic ingredients that can be eaten. Since the ingredients are edible, ethanol is drinkable.

When ethanol is made using a commercial process that involves chemicals for stripping the liquors used for fermentation, it is not drinkable.

Methanol can also be made by fermentation. All wines and beers contain some methanol so you cannot classify it as poisonous, however, at present this is the way it is classified.

Most methanol is made using heat, pressure, catalyst and steam to thus add an oxygen atom to the methane gas or carbon monoxides. Methanol is the most oxygenated of the alcohol family making it the most powerful fuel.

Methanol alcohol	
Molecular formula:	CH_3OH
Boiling point	149^0F
Appearance	Clear liquid
Density	.792 g/cm^3

Ethanol alcohol	
Molecular formula:	C_2H_5OH
Boiling point	173^0F
Appearance	Clear liquid
Density	.787 g/cm^3

The chart shows how similar methanol and ethanol are. Methanol has one oxygen atom for four hydrogen atoms, while ethanol has one oxygen atom for six hydrogen atoms. Therefore, methanol is half-oxygenated; it only needs one more Oxygen atom for the one it already has to fully oxidize during combustion. Ethanol is one-third oxygenated; it needs two more Oxygen atoms for the one it already has to fully oxidize.

Therefore the preference should be to use methanol alcohol, not ethanol alcohol, as fuel for combustion engines. And this is for the simple reason that it is more highly oxygenated thus it is going to provide more power for the engine's limited combustion volume. And this is the reason that methanol was used at Indy, although

currently they claim to have switched to ethanol since around 2004. In Europe, Formula 1 racers continue to use a special blend of E-10 gasoline. The way these cars turn up the rpm and scream like a swarm of bees makes me wonder what that special blend formula is. It sure doesn't sound like gasoline!

Wood Alcohol

The subject of alcohol is clouded further with the term "wood alcohol". In seeking out the reason for this description I discovered that alcohol was being extracted from wood sawdust at the turn of the century and for who knows how long beforehand! Here is another way to produce alcohol; from wood or any bio-mass. Basically you extract liquor from wood or chips using an acid, then ferment the liquor to produce alcohol for distillation.

By the way, new information has revealed that alcohol can also be made from carbon monoxide; so you can smoke the wood to make methanol. I believe this is why they call it "wood alcohol". To confuse matters, they claim that methanol alcohol is poisonous to breathe and touch. This is not the case, and I can prove it. If you just check the encyclopedia it states that all wines and beers contain both methanol and ethanol. So how can methanol be poisonous?

If you look up methanol production you will find that most of it is currently made using carbon monoxide gas. That means we can make methanol from anything that will burn; just deprive the reaction of oxygen and you get carbon monoxide instead of carbon dioxide. Imagine the implications! Unlimited alcohol from trash!

You can bet that from times past when people were in a pinch, wood alcohol has been drunk by unsuspecting humans. You can bet that there have been times when one has been substituted or mixed in to make up volume and increase sales. You can bet that third world countries get this kind of alcohol on a regular basis and that it tends to mess them up a bit when they drink too much. Is it the type of alcohol they are fed that causes their ill behavior?

You can also research the kind of alcohol that was traded to the American Indians and start to understand why they gave away

their lands for the stuff. Were they that stupid or were they poisoned? We shall someday know the truth on that one.

This is Big Oily's secret today: there's a thousand ways to make alcohol and an endless number of combinations of mixtures and blends. For example, in 1910 a chemist named Tomlinson implemented on a large scale in America the manufacture of alcohol from sawdust, which was a leftover by-product of the wood products industry.

> *The process used at the Georgetown works was the following: pine sawdust is placed in rotatory digesters made of sheet steel lined with ceramic tiles, along with dilute sulfuric acid. Heating is accomplished with direct steam injection, under pressure, for one hour. The steam is exhausted and partially condensed to recover spirits of turpentine (200 to 300 grams per ton of dry wood). The sawdust is then extracted in a diffusion battery, pressed and used as fuel.*
>
> *The juice obtained is partly neutralized, filtered, cooled and sent on for fermentation. This is accomplished by first preparing a yeast culture with malt and barley, then propagating the yeast thus obtained in a cooled decoction of malt sprouts in the saccharine juice. After development, the yeast is used for inoculating the saccharine juice in the fermentation vats. Industrial yields, under normal conditions, reach 7.3 liters of 100-degree alcohol per 100 kilograms of dry wood, and the factory's annual production is 20,000 hectoliters of alcohol.*

Do you see the confusion; wood alcohol verses ethanol? Though this process uses wood sawdust, the fact that they ferment the liquor produced from it means that most of it is ethanol rather than methanol. So it would not be correct to call it wood alcohol.

Wood extraction is not a method by which a significant amount of alcohol is being produced today but the term has managed to stay around to keep us confused about alcohol. There is little dry wood around for making alcohol out of today as most of the chips and sawdust are being made into ply-board using oil-company-produced epoxy glues.

Now that you are somewhat knowledgeable about ethanol alcohol you can start to see how wood alcohol has been associated with blindness as a result of humans consuming it during the period

of prohibition. But this is just one of the possible sources of toxic alcohol. The other and much larger one is the production of alcohol via the petroleum industry; a practice that is largely unknown to the public.

There is a great deal of toxic alcohol consumed in the world which was made using toxic chemicals to produce the feed-stocks such as turpentine. This is what the world's poorest people get to drink, and yes they will drink it when they have no idea what they're drinking. It is my personal belief that this kind of alcohol makes native peoples have destructive reactions. I have lived next to such villages while on a five year trip to Fiji where I witnessed grown men become transformed from peaceful into belligerent with just one drink.

The Major Source Of Methanol Today

Methanol is one of the most heavily traded chemical commodities in the world, with an estimated global demand of 27 to 29 million metric tons. Most of this will be used as a gasoline additive or for the production of MTBE, another gasoline additive. Folks, this is a huge market. Don't for a moment think that it is not a significant part of a parent conglomerate's annual business plan.

The current world's production of alcohol is no small town project, being not only large but a critical part of gasoline sales. In recent years production capacity has expanded considerably in South America, China and the Middle East. Methanol factories are based in areas with access to abundant supplies of methane gas. Coal-based production, which is another petroleum feedstock in the production of alcohol, has dramatically grown in China. Any politicians who continue to endorse corn are political turnips.

The major source of methanol production in the world today is from the catalytic conversion of methane and natural gas. Over the past fifty years methanol production has been made more efficient through the use of catalysts, commonly copper, which allows the reactions at lower temperatures and pressures. That's another reason why you can forget corn and wood as a serious supply

of alcohol. The fact that plants for producing methanol alcohol are near abundant supplies of natural gas should make us wonder why they would ever want to consider corn; a feedstock that has to first be grown, then ground, fermented and distilled, as a source of industrial alcohol in the first place.

The process of producing an alternate energy by fermenting corn instead of bringing gas up out of the earth, when you are going to use natural gas to distill the corn anyway, is an energy dichotomy. Why not just take the petroleum gas molecules and add an oxygen atom between the carbon and the hydrogen atom, thus to produce alcohol directly? Well, as it turns out they have been doing it for a very long time, all whilst the public has been left in the dark.

Alcohol should be cheap, cheap, cheap! This is a most damning truth about the oil industry that shakes out when the full alcohol story is told. Facts about alcohol being easy to make by many processes, and, that there are cheap feed-stocks such as exhaust gasses from power plants, steel mills and chemical processing plants, have been cleverly disguised and overlooked.

Adding to the overall alcohol market are additional applications for methanol for the production of formaldehyde (used in construction and wooden boarding), acetic acid (basis for plastic bottles) and for the formation of methyl esters in the production of bio-diesel. You can see that it is a market that extends well beyond the capabilities of corn production. In China, demand for alcohol is even being accelerated by new applications, such as direct blending (with gasoline), Methanol-to-Olefins (e.g. propylene) and dimethyl ether.

Alcohol can be made from petroleum, petroleum gasses, any hydrocarbon material whether it is petroleum, plant or animal based by oxidizing it with water, H_2O, which is in unlimited supply and is free. Alcohol can be made into chemicals that are components of epoxy glue for glued-wood construction material. Note how easy it is to jog these hydrocarbon components around to arrive at just about any kind of gas or liquid that is desired, and all of this is made possible with either water or atmospheric air as the necessary additions.

Why Not Get Rid Of Gasoline?

The use of methanol as a motor fuel received attention during the oil crises of the 1970s due to its availability, low cost and environmental benefits. By the mid-1990s, over 20,000 methanol "flexible fuel vehicles" capable of operating on methanol or gasoline were introduced in the U.S. In addition low levels of methanol were blended in gasoline fuels sold in Europe during much of the 1980s and early-1990s. But come on folks this only scratched the surface of what methanol fuel technology offered. All this time and during the tests we could have been supplied enough methanol to convert all of our gasoline powered vehicles to it. The oil producers would not have lost any volume since they are the suppliers of this methanol itself. They would have simply been converting it from hydrocarbon surplus gasses and oils for us, not eliminating prior sales for themselves.

This would have resulted in the transportation sector using an oxygenated fuel that produced no carbon monoxide. It is this very aspect that is not in the cards for the world's fuel demands. It is now more clear than ever that producers do not want a more efficient fuel, nor do they desire a non-polluting fuel.

That second part is a troubling aspect to consider. During the 1990's there was a sudden rise in the price of methanol (by the petroleum companies who produced it) and this gave the automaker coward consortium a reason to stop building methanol FFVs (ones powered by petroleum-produced methanol). What a perfect way to kill the program.

How the price of methanol could take a sudden jump and be more expensive than gasoline, when you get a fourfold increase from gasoline to methanol production, flat out proves oil dudes are crooks. They would have had to seriously cook their books in order to raise the price of methanol.

It worked; by the late-1990s carmakers switched their attention to ethanol-fueled vehicles (ones powered by corn produced alcohol). The public got screwed in that deal.

I hope you are not confused by these designations of methanol verses ethanol, but my guess is the public is totally in the dark. There is a public preference for ethanol as it has been touted as solving the corrosion challenges that its baby brother methanol is known for. I think we should settle on methanol and work out the fuel system problems. They obviously have already done this in the oil industry where they make millions of gallons of it per minute. So I believe that the corrosion issue is just a way to steer us towards ethanol, C_2H_5OH, which is an inferior fuel compared to methanol, CH_3OH.

Either way, here is a fuel that can be burned in an engine, dumped into a wound to heal it and safely eaten if accidentally ingested. Why won't we wake up? What could be a better fuel than that? Remember, whether it is methanol or ethanol, both can be made from petroleum gasses and liquids.

One giant advantage of an alcohol powered economy is the fact that alcohol can be immediately applied to the existing internal combustion powered vehicles. Converting existing engines would require a minimum of modification in engines, while most of the infrastructure to store and deliver this superior liquid fuel is already in place. We could begin phasing out gasoline powered engines today just by the oil producer's willingness to convert more and more of their gasoline to methanol at the refineries. This would end the oil supply game overnight. It would also end pollution.

As it now is, the fuel blends offered by the petroleum industry don't have enough alcohol in them to boost oxygenation enough to super-charge mileage efficiency the way straight alcohol does. These fuel formulas were blended with just enough oxygen to alleviate smog components created during cold startup and operation of gasoline engines. These clever oil companies are always on guard against water emulsions and they are also on guard against oxygen itself. The important thing to note is alcohol blended fuels, supplied by the oil industry, are nothing like 100% alcohol. But of course they want you to believe this.

As we mentioned before, methanol alcohol is a half-oxygenated fuel. What this means is that one half of the oxygen that will be needed to combust the fuel is already part of the liquid formula. Therefore, when you switch a gasoline engine to alcohol you can inject or mix in exactly twice as much fuel per stroke of the engine. This is the reason it is used at Indy. It gives an existing engine more horsepower.

More available power at the throttle, however, invites the operator to use twice as much fuel. This is the last thing you want to do with one of these big oversized gasoline engines since it will produce much more power than you need not to mention dramatically reducing fuel mileage. Using alcohol in an engine that was set up for gasoline is not a way to utilize any of the benefits alcohol has unless you increase the compression ratio.

When we make the switch to alcohol initially, gasoline-designed engines will perform boldly and powerful, but as they are oversized and with low compression ratios they will not get great fuel mileage without some clever engineering. It is impossible to make an inefficient design perform efficiently even with alcohol, but there would be a marked improvement in air quality right from day one.

Just the savings in gasoline by catalytic cracking with water and copper or nickel to produce methanol increases the yield by a factor of four. Plus, methanol works best when it is diluted with 20% water, this would increase the total yield to nearly 500%. Yes, you are reading this correctly.

You can make some adjustments to these large engines that we are currently stuck with if you find yourself switching to a cheap source of alcohol. One of the first things I would try is using a blend of water and alcohol rather than straight alcohol. This would help increase BMEP, reduce engine heat and allow you to advance the spark timing by 5-10^0. These changes would increase fuel mileage and exceed previous fuel mileage achieved with gasoline. It has already been proven that a vehicle running on alcohol plus water (hydrous ethanol) performed better than the same vehicle running on straight alcohol (anhydrous ethanol).

To fully utilize alcohol properly we would need to redesign smaller engines with higher compression ratios, and they would need to build for high-load continuous duty as in the marine industry. Only these kinds of sturdy engines could properly match up to the performance of better alcohol fuel in a higher compression engine. What we're really looking for is a bullet-proof engine that can run these higher BMEP's. Diesel engines are equipped to do this. They can safely be run on alcohol if you use butanol. This alcohol has four carbon atoms and is written C_4H_9OH or $C_4H_{10}O$.

Current gasoline engine designs present us with a dilemma for alcohol conversion in that they are both low in compression and flimsy in the block, thus must always be operated in a throttled-down mode. I think the place to start during conversion of gasoline to alcohol would be to add water to methanol.

Ethanol And MTBE

Anytime you see the word ethanol then you are likely dealing with an alcohol that has been produced by fermentation of sugars or extracts of organic materials. Methanol is actually a better blending additive because it is more highly oxidized than its heavier counterpart ethanol. Currently the demand for alcohol, be it methanol or ethanol, is at an all-time high worldwide and climbing. The biggest factor driving the demand is the need to blend alcohol into gasoline in order to reduce smog in industrialized cities. In order to be effective alcohol must be added to gasoline in the ratio of 10% of the fuel mix and this has created a colossal-sized world demand.

By the way if the gasoline you are using is **not** being blended with ethanol then it **is** being blended with MTBE instead. MTBE, methyl-tert-butyl-ether, is the preferred additive which they use everywhere they can get away with it. That's because it does not contain as much oxygen on a per weight basis as methanol and is also toxic to water. It may interest you to know that MTBE is made from methanol alcohol! Adding to the demand for ethanol alcohol is the fact its use is spurred by federal and/or state mandates that stipulate

fuels must contain a certain amount of oxidizer to combat smog. (Why don't they just convert gasoline itself to methanol alcohol, thus to eliminate smog and polluted waterways?)

The amount of MTBE and ethanol blended into fuels varies with the seasonal temperatures, as more oxidizer is required during cold weather startups to prevent the formation of smog. (As I stated before, oil producers never give us any extra oxygen than they absolutely have to, even though they can make four times as much alcohol from the gasoline they started with!). Today with current regulations in effect, the total alcohol market is approximately 10% of the overall gasoline market in the United States.

As a result, today in the United States, the oil companies are having a field day confusing motorists and politicians about alternate fuel resources such as alcohol. Just how stupid are their current statements and practices? For one, instead of stipulating methanol as a gasoline additive they have steered us toward ethanol, which is less oxidized, more costly and less abundant. Then they go on to state that corn-produced alcohol represents a viable alternate source of energy, all the while ignoring the catalytic cracking of gasoline into alcohol and/or the cheap production of methanol from natural gas. Nor do they acknowledge that methane and natural gas are being flared off and wasted all over the world.

Hydrous Ethanol

The current federal and state motor fuel specifications for gasoline/ethanol mixes stipulate only anhydrous alcohol as being acceptable. Anhydrous alcohol is almost completely dry, meaning it is 99% pure. You can easily get this if you are making alcohol from petroleum gasses. You cannot get this level of purity, however, if you produce alcohol by distillation. Distillation produces only 95% purity with the remaining 5% being water. This is called hydrous ethanol.

Since the production of ethanol by distillation produces only 95% "hydrous" ethanol on its first pass, it has to go through a

secondary process, such as filtration absorption or chemical leaching to remove enough free water to get it up to 99% pure. Only then is this alcohol in the category of anhydrous ethanol such that it can be legally blended into motor fuels. This is a colossal error!

One reason this is erroneous is the fact that the secondary process performed on hydrous ethanol to remove 4% of the water adds almost as much cost to the process as the first stage distillation process, thus doubling the cost and lowering the yield. But the public needs to know that this added processing is completely needless! In fact, it is worse than that. The second reason is due to the fact that the use of hydrous alcohol has been tested at least as far back as the 1905 and found to be superior to anhydrous alcohol when burned in an engine.

The fact is Big Oily had been developing water and gasoline emulsions for reciprocating engines since the turn of the century. They bore this out at the race track where the addition of water improved combustion, added power and reduced lap times.

The public deserves an awareness of what is truly available in the form of liquid energy. Methanol has been mixed with water and used repeatedly in military applications, such as to power torpedo turbines before and during WWII. Bombers and Corsair aircraft engines were equipped with water injection during the war to reduce overheating at takeoff and climb.

There is no doubt that the only reason we do not have water technology is because of a few political lobbyists and sell-outs who defend the motor fuel regulations currently in place. Such Big-Oily-compromised individuals are unqualified to have anything to do with politics, much less energy.

As a result of leadership stupidity and political cowardness, we have spent fifty plus years dehydrating all ferment-produced alcohol, even though it was totally unnecessary. The stipulation to remove approximately 4% of the remaining water by government and industry has been a waste of approximately 30% of the energy involved in distillation. But worse, it has resulted in damaging the public's perception of the viability of alcohol as a competitor to gasoline.

If You Blend With Ethanol, Use Hydrous Ethanol

Let me reiterate that we should be using methanol alcohol that is produced from catalytic cracking of waste oil field gasses or using ethanol produced from algae/microbe processing of waste gasses from power plants and factories. We should not be using alcohol from fermentation anytime that it involves a food source such as corn. Never-the-less, in some countries there is an overabundance of foodstuffs such as grains, potatoes, corn such that they can make alcohol from these feed-stocks at a price competitive with gasoline.

A fuel company called HE Blends, in collaboration with other European organizations, has completed initial vehicle tests confirming that hydrous ethanol can be blended effectively with gasoline without phase separation or other problems. An unmodified Volkswagen Golf 5 FSI was operated successfully on a 15% hydrous ethanol blend with gasoline, meeting European exhaust emission standards in testing conducted by the Netherlands research organization TNO Automotive and by SGS Drive Technology Center of Austria.

Besides confirming the effectiveness of hydrous ethanol for gasoline blending in actual vehicle trials, these initial tests have shown measurable increases in volumetric fuel economy, indicating higher thermodynamic efficiencies resulting from hydrous ethanol. In other words; **adding water to alcohol that is used for fuel inside a combustion piston engine results in an increase in overall efficiency.** And now you know the reason that the oil industry has stipulated anhydrous ethanol and methanol all this time.

Fuel-Water Emulsions And Formulas You Can Try

Now that we have seen how an addition of water is able to enhance the performance of alcohol when used as a fuel in a combustion engine, we now turn our attention to the possibility of applying the same miracle molecule to gasoline. And as it turns out

this technology was patented long ago by the same man who co-invented the internal combustion engine in the 19th century, Nikolaus Otto.

The word on the street is water and gasoline doesn't mix. So you might be leery that this cheap way of modifying gasoline could actually be a promising ways of saving fuel and improving the environmental characteristics of existing combustion engines. Well, here are some formulas for mixing a gasoline/water emulsion using alky-phenol detergents. You can try them for yourself:

> EXAMPLE I
>
> 1 ml. of IGEPAL CO530 and 1 ml. of CALAMIDE C were poured into 78 ml. of gasoline and then 20 ml. of tap water was added. **A slight shaking of the container formed a clear emulsion.**
>
> The IGEPAL is manufactured by GAF Corporation and is a non-ionic ethoxylated alkylphenol containing 6 moles of ethylene oxide per mole of nonylphenol. The CALAMIDE C is manufactured by Pilot Chemical Company and is a coconut oil diethanolamine super amide.
>
> EXAMPLE II
>
> 1.5 ml. of IGEPAL CO210, a non-ionic ethoxylated alkylphenol having 1.5 moles of ethylene oxide per mole of nonylphenol was added to 82 ml. of gasoline in a beaker. 1.5 ml. of CALAMIDE C was added and 15 ml. of water. **A gentle shaking of the beaker produced a clear emulsion of the gasoline in the water.**
>
> EXAMPLE III
>
> 3.5 ml. of VARONIC N30-7 and 3.5 ml. of VARAMIDE MA-1 were mixed with 70.5 ml. of

> gasoline and 22.5 ml. of water. The VARONIC N30-7 is produced by Ashland Chemical Company and contains 30 moles of ethylene oxide per mole of nonylphenol. The VARAMIDE MA-1 is also a product of Ashland Chemical Company and consists of a coconut oil diethanolamide super amide.
>
> EXAMPLE IV
>
> 2 ml. of VARONIC N-6 was poured into a beaker containing 88 ml. of gasoline. 10 ml. of tap water were added and emulsified into the gasoline by gently shaking the beaker. The VARONIC N-6 is a product of Ashland Chemical Company and contains 6 moles of ethylene oxide per 1 mole of nonylphenol.

Unfortunately, a specific detergent that contains these alkyl phenol detergents is hard to find at the local grocery store for the fact that the manufacturers don't want to tell you what the active ingredient is. Read the label on these powerful cleaners and you won't get much. This is not by accident.

And keep in mind that acetone is additized with additional "stabilizers" which render it ineffective for gasoline blending. It does not surprise me that these detergent manufacturers are performing similar tricks on the gasoline-consuming public with their knowledge of chemical formulas that emulsify water with gasoline just fine.

With gasoline now established as the primary fuel for the world's transportation vehicles, we should take a look at every possible way of enhancing it. One of the inherent problems with internal combustion engines running on gasoline is their excessive heat generation and carbon monoxide production. This would be another positive reason to embrace the use of a gasoline-water emulsion.

Field research has shown that water-fuel emulsions:

Helps improve fuel and air mixing,

Increases the air to fuel ratio and combustion speed (as a result of droplet micro-explosions, discharge of steam and splitting of the particles of the original fuel),

Reduces nitrogen oxide in the exhaust gases.

Reduces the combustion temperature and combustion speed of the fuel and water mixture,

Accelerates the transformation of harmful carbon monoxide into neutral carbon dioxide,

Creates steam during the process of combustion acts which as a catalyst for the oxidation and gasification of carbon.

Increases volumetric efficiency and fuel mileage.

In addition, the economic efficiency of using water-fuel emulsions eliminates the cost of separating water during the manufacture of water-oil fuels. In the process of water fuel emulsion production, the fuel is also homogenized.

You might be interested to know that the method used to homogenize fuel was proposed by the French inventor, Auguste Gaulin, in 1899. This approach proved particularly efficient when medium and high-viscosity fuel mixtures were used for ships. Such technologies were used by ships of many countries and produced high economic and environmental results approved by Lloyd's Register in 1978.

Fuel Water Emulsions Are Approved By Lloyd's Register

> "Theoretical research in the sphere of thermal fuel combustion has demonstrated that a substantial cut in harmful emissions is to be anticipated from equalizing the temperature field within the combustion chamber, together with a sharp drop in the number of local high-temperature zones. **This condition can be met if water-fuel emulsions (WFE) are used in engines. This type of fuel, with an energy-intensive neutral additive, helps extend the self-ignition delay period and promotes a better mixture of air with the combustible charge, resulting in rapid and even mixture combustion together with a substantial evening out of the temperature gradients in the combustion space.** In addition, at the WFE ignition temperatures, water dissociates into hydrogen and hydroxyl, which results in fuller after-burning of the fuel. Thanks to these specifics, the main harmful components in exhaust gases can be reduced. This explains the considerable interest in water-fuel emulsions and the fact that developments are being actively carried out in this sphere throughout the world."

Historically, the emergence of an interest in water-fuel emulsions is connected with attempts to use heavy water-cut fuel oil and oils as fuel for diesel engines. Being cheap, these fuels have a number of unfavorable characteristics. One of these is the presence of water contained within them.

It turns out however that water which is evenly dispersed within heavy fuels does not hinder their combustion in diesel engines and even improves the mixing and ignition processes, thus making the fuel more economical to use. In addition the engine can be loaded heavier as the presence of water vapor reduces the temperature of the working parts and increases the reliability and service life of the engine.

Again, the presence of water in certain proportions dramatically improves the combustion process of petroleum fuels.

Other Mystery Fuels

The fuels that are discussed in the following pages are neither theoretical nor potential fuels but ones that have been available since the World War Two and they are available right now, but only for military purposes.

During WW2 Shell had a gasoline type fuel called Triptane. It was developed for use in highly supercharged aircraft engines to resist detonation. Triptane had an aircraft octane rating of around 200. Triptane allowed blower boost pressures around 38 psi in engines with 150 cubic inch plus cylinders.

Triptane (2,4,4 tri methyl pentane) was also used in Allison powered P-39's used for air races in the late 1940's. This airplane with an Allison blew away all Merlin's and big radial powered pylon racers of the day. A fairly stock Allison 1710 produced about 2900 Hp in over-boost. Triptane was tried with along with mixtures of methanol, benzene and acetone at various times and with varying degrees of success.

Mixtures Of Oxidants, NO_3, With Hydrazine, NH_4

I included these two experimental fuels due to their composition with Ammonia Nitrate, NO_3. Because of the three parts of oxygen added to the molecule it is a very effective way to get a lot of extra oxygen into the combustion space thusly to be able to burn more fuel and produce more power.

Secondly I was intrigued with the presence of powdered aluminum in the formula. Powdered aluminum, now known as nano-aluminum is a component of Thermite. Thermite is an explosive substance that burns so hot it cuts right through steel. As a side note, thermite also contains iron oxide as an oxidizer for the aluminum. I have seen this mixture set off using a magnesium fuse. The heat and light from the reaction was a white hot reaction that melted down into the plate of steel.

Nano aluminum is a relatively recent invention and is now

readily available. Consider these dense harbingers of energy as "super-igniters" of the fuel charge. These tiny particles, upon burning, take over where the spark plug leaves off. Former research indicates that higher-voltage spark ignition coils provide significantly improved fuel combustion (another invention the auto-makers ignore). It makes sense that the use of nano-particles that burn at 4,000 ^{0}F and higher could provide significant improvements in combustion as well.

Nano sized particles are of such fine size that they can be added into liquid fuel formulations in stable mixtures and pass through fuel injectors and filters. There are already a number of patents for such formulas. One in particular used nano-titanium in conjunction with silicon based oil. By mixing the titanium first with the oil and then with the gasoline, a stable mixture was obtained.

Imagine super-charging your car's engine without the need for of a supercharger! Normally a super charger would be run off of your engine and would rob about 30% of the shaft horsepower it produced from the fuel provided. A small amount of Titanium added to the car's gasoline would have a dramatic effect for the fact that it causes a more complete combustion of the fuel because of the extreme heat. Extreme heat in the combustion chamber means that a catalytic breakdown of the hydrocarbons will occur if water and pressure are present. The pressure is there from the combustion. Therefor this is a perfect application for water injection and/or using a fuel/water emulsion.

I have in the past run across fuel "tablets" that were supposedly dropped into a car's fuel tank for extra mileage. Now I believe that they may have really worked. You have seen how it is possible to produce such a potent ingredient such that just a pill added to your car's gas tank would indeed have a significant effect. Such types of fuel enhancers are either branded unscientific or totally ignored by the media. Now you know there is a definite possibility such a product exists right under our noses. Ammonia nitrate (NH_4NO_3), iron oxide, titanium and aluminum are just a few of them.

Let's summarize what we now know about the super fuel of the future: It would contain H_2O within the formula thus to take

advantage of the extreme heat energy supplied by the use of nano-particles. This extreme heat can produce steam, and this produces increased pressure during combustion. Now the heat and pressure, combined with gasoline and water vapors, causes catalytic cracking of the gasoline molecules into molecules of methanol and methane. The additional oxygen required for the reaction is pulled from the intake air.

The significance of this secondary reaction, which disassociates the water vapor into separate hydrogen and oxygen which is then combined with the hydrocarbon fuel, is the key to understanding how certain inventors from the past, like Pogue, were able to boost fuel mileage in a typical automobile to 100 miles per gallon. This is how it was done. The only difference was that the metal catalyst was part of the engine itself, not part of the fuel. Either method works. It is probably harder to mount the catalyst in the combustion chamber than it is to add nano-particles to the fuel. This is why I find fuel-additive research so intriguing.

Certain metals like titanium and aluminum burn extremely hot. Certain metals like nickel, platinum and iron work as a catalyst such that catalytic cracking (breaking water molecules into hydrogen and oxygen and combining with hydrocarbon to form methane and methanol) can occur at lower temperatures. So we are just scratching the surface of available ways to formulate very powerful fuels. Here are the fuels that some oil company chemists came up with:

Astrolite A And Astrolite G

Appearance: both are a clear liquid Molecular formula: NH_4NO_3

Volume of gaseous detonation products: 1,112 liters/kg
Density: 1.36 gr/cm^3

Detonation speed: For reference the detonation speed of nitro-methane is 6,800 m/sec.

Astrolite A: 7,800 m/sec Astrolite G: 8,600 m/sec

Astrolite A and Astrolite G were developed as explosives in the 1960s by combining an oxidant: **ammonium nitrate**, with **hydrazine** at a stoichiometric ratio of 1:1. Astrolite A also contained 20% aluminum powder. These substances are considered as binary materials, since both components are not explosive until they are mixed; this action can be performed even on site.

Astrolite A and Astrolite G are not widely used in applications that I am currently familiar with. My guess is they are so potent and powerful they would expose gasoline and petroleum based fuels as the wimps that they truly are. For example they have a higher detonation speed than nitro-methane and much more oxygen and hydrogen in their makeup. Now we can't go powering our top fuel dragsters with 50 cubic inch four bangers. They wouldn't produce the right sounds because the pistons wouldn't be big and numerous enough to make that loud, roaring sound. It's a sound designed to please the crowd.

Imagine watching a dragster line up to the start that has an engine so small the crowd can't see it clearly as the centerpiece. That wouldn't do. Drag racing is all about engines. The piston engine they do put there is just the right size so you can visualize it in your own piston powered vehicle. And you fall for the supposed hi-tech that produces all the power. This in turn makes you think there's something special about the piston V-8 engine design. Very clever these people. There's nothing special about the V-8 design. It was a good formula for vegetable juice at one time, but that's it.

Think about this: If a dragster's engine was smaller than a Mazda Wankel engine yet put out the same power as a 500 cubic inch hemi piston engine, piston engines would be exposed as the over-weight slugs that they are. However, if they are about the same size as your engine, then souped up to sound like a reenactment of the Civil War, people in the stands are going to be entertained. But it's all a theatrical display.

At this point it becomes more crystal clear that the performance of gasoline can be dramatically improved. Significant

performance improvements are easily achievable, such as adding water which is virtually free and unlimited. You have also learned that it is also possible to enhance fuel combustion with the use of catalysts in the presence of water and pressure to break water molecules, thus to produce methane and methanol within the combustion chamber in place of hydrocarbon which is then oxidized. And you have learned that ammonia and hydrazine can be combined resulting in a further increase of available oxygen for increased combustion. Lastly, with nano particles of certain metals being added to this mixture, there is even greater combustion efficiency. Note that in every case the fuel producers refuse to offer them to the public sector.

Gasoline is definitely in need of improvement. This gives rise to the next topic: What fuel should we be using?

Fuel Options So Far:

Methanol, CH_3OH and/or Ethanol, C_2H_5OH
Methanol/Ethanol water blend
Ammonia, NH_3
Gasoline, C_6H_{14} – $C_{12}H_{26}$ and others
Gasoline Water Emulsion
Hydrazine, N_2H_4
Hydrogen gas, pressurized, H_2
Hydrogen peroxide, H_2O_2
Kerosene and diesel, $C_{18}H_{38}$ and many more
Methyl nitrate, CH_3NO_3
Nitro methane, CH_3NO_2
Propane, C_3H_8
Thermolene, N-Propyl Nitrate. $C_3H_7NO_3$
Triptane, 2,4,4 tri methyl pentane, $(CH_3)_3CCH_2CH(CH_3)_2$
Astralite A and Astralite G

There are undoubtedly thousands of additional formulas for fuel that have been researched and tried. This would be a great area of study for PhD's in chemistry to do for a research project before graduating and going off to work in the oil industry. We are able to see from this incomplete list that there are many choices other than gasoline that are much better than gasoline. Therefore as a fuel for the 20th and 21st Centuries, gasoline does indeed rank at the very bottom.

Fuel Ranking

No. 1 Methanol Alcohol, CH_3OH

A world powered by alcohol is forever freed of carbon monoxide and smog. If a person, child for instance, mistakenly drinks some from an unmarked coke bottle they will end up nauseous but they aren't going to be seriously harmed. We can clean and cook with it in the home, and you could run your car inside the garage and survive because it would not produce any carbon monoxide. If you spill it into the grass, it will soon break down into harmless components. If you get it on your hands you will not have to worry about absorbing toxic compounds.

We could have drive-through fueling stations that offer shelter and comfort, and our hands would be sanitized not chemical-soaked from the process of pumping. These are darn friendly reasons to use alcohol in our engines and just one of the many why I rate it as my Number 1 choice for the current era.

We can even poor it into our wounds if we get in a car accident. In many ways it resembles a god-designed material for the fuel needs of humans. The half-life for methanol in groundwater is just one to seven days, while many common gasoline components have half-lives in the hundreds of days, such as benzene which is 10–730 days. Since methanol is miscible with water and biodegradable, it is unlikely to accumulate in groundwater, surface water, air or soil.

And unlike petroleum fires, methanol fires can be extinguished with plain water.

The second reason that I like alcohol as a choice for fuel is because it can be manufactured in so many different ways. These include but are not limited to:

Fermentation of grain, fruits and vegetables and distillation
Acidification of biomass and fermentation of the liquor obtained
By converting hydrocarbon gas using steam reforming to alcohol
By catalytic cracking of hydrocarbon liquids and water to form alcohol
By converting coal, gas or oil
From manure by steam oxidation
From wood biomass
By synthesizing CO_2, CO and Hydrogen (from H_2O) into alcohol
By converting organic fats and oils to alcohol
From wood using pyrolysis

In the future when you have a discussion about the merits of alcohol as a fuel be sure to discuss the cheapest, easiest and most widely used source of alcohol today: it should be coming free of charge directly from the oil fields where gasses are being flared off. The world-wide alcohol market is a gigantic enterprise that takes hydrocarbon gas such as natural and ethane gas and converts it to alcohol. Thus the production of alcohol as an industrial fuel does not require the conversion of corn or any human or animal food source and should not as long as we have an oil industry in existence.

Alcohol produced using the existing oil production mechanism would be a way to clean up the environment. If and when alcohol is chosen to replace gasoline, it would initially be produced from ethane gas and other hydrocarbons, and in doing so a good portion of harmful pollutants could be stripped off. This would result in a fuel that is 10 times less polluted than the fuel that we are currently using. And remember that it contains oxygen within the formula so it is able to produce more power in our engines.

Alcohol is the safest fuel for cooking as it can be put out with

water. It does not create pollutants in the burning process and can be used indoors. Alcohol points the way toward energies that are not poisonous to us. That is a concept that is way down the road from where we are at today, isn't it?

In the 9th chapter the World War 2 torpedo turbine engine was unveiled. This compact turbine engine was powered by water, methanol and compressed air. We saw conclusive evidence that water works in unison with methanol to create super-heated steam directly from the combustion of the two simultaneously. Here we have water droplets increasing in volumetric size by 1700 times and then expanding even further as they go higher into the super heat phase above the boiling temperature of water.

Alcohol for powering engines is usually used in the form of Methyl alcohol or methanol. CH_3OH is the chemical formula. Methanol burns at a much richer mixture than gasoline does; with an air to fuel ratio of 6.0:1 as opposed to gasoline which is typically 12.8:1. The reason for this is the presence of the oxygen atom within its chemical makeup which gasoline does not have.

Once you understand the chemical formulas of hydrocarbon gasses and alcohols it becomes obvious how easy it is to make alcohol from hydrocarbon gasses; you just add oxygen. Oxygen is readily abundant from the air. Folks, I know you're freaking out with this news as you might have a hard time with the concept of turning wellhead gasses that are normally lost into alcohol, but that is just what industrial grade alcohol is. You can't drink this stuff because the ethane feed-stocks contain micro pollutants, but it sure makes a wonderful fuel.

Attempts To Produce Methanol

During the OPEC 1973 oil crisis, Reed and Lerner proposed methanol from coal as a proven fuel with well-established manufacturing technology and sufficient resources to replace gasoline. Hagen in 1976 reviewed prospects for synthesizing methanol from renewable resources and its use as a fuel. Then in

1986 the Swedish Motor Fuel Technology Co. extensively reviewed the use of alcohols and alcohol blends as motor fuels. This company reviewed the potential for methanol production from natural gas, very heavy oils, bituminous shale, coals, peat and biomass.

In 2005, Nobel Prize winner George A. Olah et al advocated an entire methanol economy based on synthetically produced methanol.

The availability of cheap methanol is an unknown secret. Anyone who is advocating corn production as a viable form of alcohol is completely illiterate on the subject of energy and should be fired or voted out of office immediately. Any congressman or senator arrogant enough to consider taking a food source from humans unnecessarily has an obligation to the people to check out what they are actually advocating beforehand. In the wake of world hunger the practice of corn conversion has only a villainess appeal, and it has made the subject of alcohol appear inglorious in the eyes of the public. This is most unfortunate. We should be directing our scoffs and scorn toward our congressmen, not alcohol.

If I have over stated these remarks about alcohol, it is no accident. If you have read something twice or three times it is because of the extreme importance that the subject of alcohol is. Anyone seriously trying to improve the energy situation today needs to be on board with ways to make alcohol from nonfood garbage substances like flared off wellhead gasses, peat, biomass, natural gas, all surplus crude stocks, etc., and from any exhaust stack gas containing carbon dioxide using biomass-adapted algae to convert it to hydrocarbons and then oxygenate to alcohol.

By the way, all wines and beers contain some methanol as well as ethanol. Methanol is NOT POISONOUS. Unfortunately it is made to sound as if even the vapors are poisonous (Big Oily hates methanol).

How Methyl Alcohol, CH_3OH Relates To Ammonia, NH_3

Now, while I've got you on this subject of wellhead gas, it is time to discuss ammonia, NH_3, and how it is basically made from the

same stuff as methanol, using natural gas and methane wellhead gas. It just requires a slightly different process. If you will note from the two chemical formulas, alcohol and ammonia share an abundance of hydrogen.

The cheapest source of hydrogen is methane gas, CH4. From this they strip off the carbon and then recombine the hydrogen with nitrogen to form ammonia, NH3. Since the nitrogen was available free of charge from the atmosphere, it is not an expensive process to switch one with the other. Methane is the common link from which it can easily be converted to methanol by just adding an oxygen atom, or it can be converted to ammonia by stripping and then recombining the carbon atom for a nitrogen atom.

Ammonia very much resembles propane gas. It is liquid like propane at approximately 100 pounds of pressure, and it produces about the same amount of energy of combustion per unit of liquid, which is about the same as gasoline. Few people know that ammonia can be burned in reciprocating engines just like propane. It can be supplied to a carbureted gasoline engine in the vapor phase (off the top of the tank) or supplied to a fuel injected gasoline or diesel engine in the liquid phase (from the bottom of the tank).

Ammonia is marketed as fertilizer to the farming industry with a market so huge that a pipeline has been constructed by the oil industry for distribution of liquid ammonia across the United States farm belt. The oil industry much prefers to sell us their converted wellhead gasses as ammonia and not alcohol for the simple reason that ammonia does not contain any oxygen in its formula. The oil industry makes ammonia for the public, but only makes methanol for their gasoline, and for petrochemical companies that require it as a feedstock.

We're going to get more into ammonia in the next section. For the meantime let me switch back to discussing alcohol and the fact that it contains one additional oxygen atom and one additional hydrogen atom within the liquid formula than ammonia. And here's

the deal: Anytime you've got a liquid fuel that contains oxygen and hydrogen within the formula you've got the potential to have a potent fuel.

The oil industry does not want the public to have a potent fuel. As long as the public does not know that alcohol is oxygenated, we have no way of properly comparing it to gasoline, which is not oxygenated.

Methanol; Poor In Existing Engines, Great At Indy

For those engineers out there that balked at my statements regarding the potency of alcohol you probably have good reasons. Therefore I have provided further analyses of methanol compared to gasoline. Let's try to construct all the pieces of the puzzle.

> It takes 12.8 lb. of air to oxidize one pound of gasoline. Gasoline has a theoretical energy value of approximately **18,400 BTU/lb.**
>
> A 350 cubic inch engine consumes 567.53 cfm @ 6500rpm, which is 42.64 pounds of air and 2.89 pounds of fuel. Therefore if we are using gasoline in the engine, at 6,500 rpm and full throttle it is burning 53,176 BTU's of energy per minute.
>
> It takes 5 lb. of air (or 38% as much for gasoline) to oxidize one pound of alcohol fuel. Methanol has a theoretical energy value of approximately **9,500 BTU/lb.**
>
> Using our 350, example above running on methanol consumes 567.53 cfm @ 6500rpm which is 42.64 pounds of air and now at a 6.4:1 ratio for Methanol is 6.67 pounds of fuel. Comparing the amount of fuel and the BTU's available from alcohol the same engine at full throttle and 6,500 rpm is able to burn 63,365 BTU's of fuel per minute.

This represents an increase of potential horsepower of 19%. This doesn't look like much of a big deal. In fact it resembles a disaster when we realize that we have burned twice as much alcohol as we did gasoline and we only got a 19% increase in power we didn't

need anyway.

In summarizing the process of converting an existing low-compression gasoline piston engine from straight gasoline to straight methanol the following results are obtained:

Power increased from 53,176 to 63,365 BTU's of energy per minute at 6500 rpm.

Fuel consumption increased from 2.89 pounds of gasoline to 6.67 pounds of methanol (per minute).

We got extra power, which was totally unneeded, and decreased our fuel mileage by 50%. That's not a very good endorsement for alcohol as a fuel. And it is this type of information the public currently has at its disposal to rate alcohol as a viable fuel or not.

This is what happened in our test; Since we started with an engine that was much larger than it needed to be, when we ran it on a better fuel (which caused it to produce more power) it meant the engine's intake had to be restricted more than before in order that it produce the same horsepower as would normally be used to propel the car.

As discussed in Chapter 6, when a piston engine is run at reduced throttle, the efficiency drops off. And this is because a piston engine running in a throttled state will be operating at lower BMEP's since it is pulling against a higher vacuum than would a smaller engine with the throttle opened wider.

As a result of running methanol in this engine with it "choked" down we have set it up to operate below its normal compression ratio, which was already a paltry 8:1. This means it is drawing in air at a lower atmospheric pressure than before, thus this engine is now operating with a lower compression ratio than it was before. This is exactly the opposite direction that you want to go. We should be using alcohol fuels at higher compression ratios, not lower ones. And this is in fact exactly what alcohol fuels have in abundance over gasoline fuel; their ability to run with compression

ratios up to 20:1.

We have to modify this comparison a little due to the specific gravity of gasoline, .713 lb. per pound and the specific gravity of alcohol is .791 per pound. This means that you get more weight on a per gallon basis with alcohol than gasoline. Now when we compare the two fuels on a per gallon basis we get further increases for alcohol of .792/.713 or 11.1% times the figure of 63,565 BTU's to 70,408 BTU's, but this is only of small help in favor of alcohol.

The extra power we gained that we didn't need helps the engine at higher power settings somewhat, because after all the fuel is now half oxygenated. When we combine the available ingredients as best we can: lousy engines with alcohol fuel, in the end we end up consuming about 1 ½ times as much fuel as before when switching from gasoline to alcohol fuel.

Now, earlier I have stated that alcohol compared to gasoline would be 2 times as powerful as gasoline **and** that by using alcohol compared to gasoline we could make the engine displacement ½ the size of the gasoline engine. Yet when we put it into an existing gasoline piston engine the fuel consumption went dramatically up, not down. How could switching from gasoline to alcohol possibly make fuel consumption go down as I stated?

How To Get 2 Times The Fuel Mileage Using Methanol

First, advance the ignition timing by 10-20^0, if your car will allow it. A man successfully converted a 2007 Chevrolet Colbalt to 100% methanol and found that by advancing the timing, was able to take advantage of the higher combustion pressures that methanol tolerates. He was able to get 24.6 mpg using straight methanol. This compares to 28.6 mpg using standard gasoline, or 1.16 times that of gasoline. This is getting pretty close to equaling the performance of gasoline with just one modification.

But in order to get **mileage benefits** using methanol, we need to redesign the engine. Methanol is a superior fuel, therefor it needs a superior engine design. Of first concern, the compression ratio needs to be raised. In a typical gasoline piston engine the

compression ratio is only 8.5:1. However with methanol we can run a compression ratio as high as 20:1. Reading from an air fuel ratio compressibility chart reveals going from a compression ratio of 8 to a compression ratio of 16 results in a compression pressure that is more than two times the pressure at the moment before combustion with an 8.0:1 compression ratio.

This makes for a more efficient engine but obviously puts more strain on the pistons and engine block. That is why our flimsy existing gasoline engines must be redesigned. They would more resemble a diesel engine as they operate at these higher compression ratios. This is one of the main reasons why diesel engines get about twice the fuel mileage as their gasoline powered counterparts.

An additional note: Because methanol molecules are much smaller than gasoline molecules they burn faster and more completely. This increases power and decreases non-combusted fuel components.

The figures above for the energy contents of gasoline and alcohol are from experiments conducted in a laboratory where all of the combustible molecules were combusted. In actual practice this never happens with gasoline molecules because they are so much longer and do not fully break apart into single carbon molecules. As a result, more of them exit the combustion chamber as C2's and C3's, etc. meaning they are still combusting in the exhaust manifold and tailpipe, thus contributing to energy that was wasted. Methanol, being a single carbon molecule, combusts to the fullest extent.

Alcohol Mixed With Water

An important consideration using alcohol is whether to mix it with water. We have already seen that hydrous ethanol outperforms anhydrous ethanol and its use should be standard practice. The use of water in methanol is even simpler since the two are totally miscible. Water mixed with alcohol permits higher compression ratios and increased combustion pressures because of the super-heat expansion of the water into vapor then super-heated steam. And it has been shown that methanol can be mixed with

water up to a ratio of 50% in properly designed engines.

I have calculated that if we switch to alcohol, reduce the engine size by 50% and increase the compression ratio to 16:1 we will have as much power as before AND only use ½ as much fuel as before. So let's take a gasoline engine which is 1.6 times less efficient with gasoline and show how it can end up being 2.0 times more efficient.

If we were getting 10 mpg using methanol we would be getting 16 mpg using gasoline. We need to get to 32 mpg. This is how it is accomplished:

1. The compression ratio is increased to 20:1, and 20% water is added to the methanol to boost the engine's BMEP, and reduce lost exhaust heat. This makes the engine twice as efficient. Now we have gone from 10 mpg to 20 mpg. We only need 12 more mpg.

2. 20% of the Methanol is being saved by substituting water in its place. This adds another 4 miles per gallon, bringing us to 24 mpg.

3. The smaller engine requires less energy to run the engine itself, and is easier to keep cool. This is friction energy that accounts for a substantial amount of energy that is lost during rotation of the crankshaft, pistons, camshafts, rockers, etc. The amount is equal to roughly 30% of the total horsepower that a piston engine running on gasoline produces. We have just halved this amount with the smaller engine, saving another 15% and taking us to 27.6 mpg.

4. A smaller engine has lower inertia providing more torque per amount of fuel burned, thus it accelerates more efficiently. The Tucker proved this concept. Added to this are savings in engine and fuel weights, making for a lighter vehicle. The combination of a lighter vehicle, and, a quicker-revving engine, saves another 20%, taking us to 33 mpg.

If an engine is designed solely to run on methanol and to maximize fuel economy, then with a lighter vehicle and a faster accelerating engine, combined with water injection to both increase

power and offset the fuel price, we can indeed achieve a fuel efficiency factor of 2X that of gasoline.

This is why cars at Indianapolis used methanol until 2003 when they switched to ethanol and limited the displacement to 3.0 Liter. Extra fuel is rammed into the combustion space because it contains oxygen in the liquid formula. The compression ratios are turned up such to get enough power to go over 200 miles per hour. This requires a huge amount of horsepower.

Standard mathematical equations for traveling through a gas reveal that in order to increase speed by 2 times, the power required to do so would be 2^3 or 8 times as much. In other words, if it took 100 horsepower to go 100 miles per hour it would take 800 horsepower to go 200 miles per hour. So these Indy cars are really putting out some power. They are rated at about 700 horsepower but I think it must be much higher than that. All this power comes from a 3.0 Liter piston engine because it is running on oxidized alcohol fuel (or perhaps Astrolite or Triptane in disguise?).

Meantime many of us actually believe that Indy is all about technology and super metallurgy. Think again. Recently at Indy they switched from methanol to ethanol and increased the size of the engines from 3.0 Liter to 3.5 Liter (214 cubic inches). They did this as a result of losing a little power going from CH_3OH to C_2H_5OH. This is proof that methanol is a better motor fuel than ethanol. Fuel mileage went from 2.5 miles per gallon to 3.0 miles per gallon, indicating that ethanol does offer better fuel mileage.

Can you imagine still stopping for gas in 2022, while trying to win a speed race that only lasts a few hours? And at 4 miles per gallon (as of 3/2023) the typical Indy car will require 125 gallons of fuel, and they claim that each car only contains 18.5 gallon of fuel! This requires 6 pit stops to administer 106.5 gallons during the race!

Since when is stopping 6 times for fuel a way to win a shortest-amount-of-time race? Update: Formula 1 cars are now carrying 200 liters in one tank directly behind the driver so that they do not refuel during their race. Wow! Hard to believe!

Remember in top fuel drag racers they take the use of oxygenated fuels a step further with the use of nitro-methane,

CH_3NO_2. Note: there are two parts of oxygen for one part carbon in this formula. This allows them to boost horsepower up by another 3 fold.

No. 2 Fuel Choice: Ammonia, NH_3

I selected ammonia as my second choice for the main reason that it is currently available in large quantities via a pipeline and distribution system for farm-fertilizer anhydrous ammonia that currently exists within the United States. The combustion of ammonia is basically a hydrogen reaction.

Hydrogen, if used as a gas by itself, must be stored at relatively high pressures at ambient temperatures (2,500-10,000 psi), or stored as liquid when chilled to -250°C (MacKenzie and Avery, 1996). Both of these storage systems are more costly than tanks needed to store ammonia.

Consider this: When ammonia is used in a liquid state it results in 4.5 times more energy per liter than pure gaseous hydrogen at 6,000 psi.

Ammonia has safer handling properties when compared to hydrogen, which can produce flashback due to its high burning velocity and low minimum ignition energy. This is why I dislike government engineers who are stupid enough to spend their time exploring the use of compressed hydrogen in vehicles, when they should simply be using hydrogen that is readily available from ammonia, NH_3. Once you strip the hydrogen, all that remains is nitrogen; a harmless component of air.

Currently most of the world's ammonia produced is used as a source of nitrogen for farms. It is sprayed downward into the soil as a source of Nitrogen from 100 gallon cylindrical tanks containing pressurized anhydrous ammonia mounted on rubber tires and towed across the croplands using a tractor. In the United States, natural gas is allowed to be flared at the wellhead. So how do we get ammonia here? We buy it from Australia where they recover the wellhead gasses and make it for us. Does that make sense? No. They

do it to confuse us about where ammonia comes from. They don't want us to know that it comes from the very natural gas we are allowing the oil industry here to flare off and totally waste.

Remember; rule No. 1 of the fuel producing industry: "Keep the public dependent on a product that only we can make." As a result, Big Oily is terrified of any fuel that does not have carbon in its makeup, since that's all they have to offer.

If a trend to replace carbon, which is obtained at extreme environmental cost, with ammonia, whose elements are available as nitrogen from the air and hydrogen from water, was further supported, the oil industry would no longer be able to tout hydrocarbons as the premier formula for liquid fuel. In fact, nitrogen-based fuel would make gasoline look everything but premier.

Here's the big picture: without a presence or need for carbon in the fuel formulas, there is absolutely no reason or need to extract crude oil from the earth. And thus ammonia suppression is another part of the maintenance of an unjust petroleum monopoly worldwide.

Understanding Hydrogen Reactions

You will notice that the formula for ammonia contains only nitrogen and hydrogen. Thus ammonia can also be made from the air and water without using any additional feed stocks. This is an attractive process for cases where a free source of energy such as solar, tidal, wind, water, wave or a bio engine running on organic matter, waste oil, etc. is available. Using these systems to produce electricity allows nitrogen to be stripped from the air and hydrogen to be stripped from the water using electrolysis.

Ammonia can be extracted from animal waste or any organic reaction that will produce ammonia gas. Currently this type of ammonia production is largely ignored. The process is better explained in Chapter 12, but you see there are many cheap sources of ammonia.

One of the cleanest and most powerful forms of combustion energy is from hydrogen combining with oxygen to produce heat, expansion and H_2O. By attaching hydrogen atoms to nitrogen as in common ammonia, NH_3, an abundance of hydrogen is provided just as it is using hydrocarbon fluids like gasoline, C_6H_{11}, etc., only in this case we have merely substituted carbon for nitrogen as the bonding atom for hydrogen.

Ammonia is another pollution free, hydrogen-based renewable fuel that we should be using right now in place of gasoline. Anhydrous ammonia, meaning de-hydrated or free of water, is one of the most commonly synthesized chemical compounds on the planet. Due to its high hydrogen content anhydrous ammonia (NH_3) can be used in both gasoline and diesel type internal combustion engines with minor modifications that will be further discussed below.

The bad news concerning ammonia as a vehicle engine fuel is its ignition temperature is relatively high at 650 °C (1200 ^{0}F), and it must be combusted in concentrations of 16-25% by volume in air. This gives it a slower rate of combustion than gasoline. If used as a fuel by itself in a compression-ignited engine requires compression ratios of 23:1 minimum to get it to combust properly.

When a applying it to a gasoline engine, spark-ignited, it will not combust properly because standard 8-10 compression ratios in gasoline are not high enough. For this reason, when using ammonia in a standard gasoline engine, it should be mixed with a combustion promoter such as Dimethyl Hydrazine.

In the U.S. Army studies, it was shown that ammonia could provide sustainable combustion when used as a primary fuel or in conjunction with a pilot fuel or spark source in either spark-ignition (SI) and compression-ignition (CI) combustion schemes. However, each method had its own advantages and drawbacks.

The best way to use ammonia, however, is in a hydrogen fuel cell. Ammonia could serve as a storage mechanism for hydrogen, in this case requiring only 150 psi instead of 6000 psi while providing hydrogen feedstock for standard hydrogen fuel cells.

It can also be mixed with gasoline at about 30% vs. 70%

ammonia, which produces satisfactory results. Personally, I would not recommend using gasoline for the combustion promoter unless there was nothing else available as it contains the very carcinogens we would like to get away from. However, the blending of ammonia with gasoline does provide a reasonable intermediate solution to the over-use of petroleum, as its use as a blend greatly diminishes exhaust gas pollution and carbon monoxide.

Ammonia can handle compression ratios up to 23:1 but when it is used in a diesel engine at 100% the performance is below that of standard diesel fuel. This can be remedied by a combustion enhancer, the addition of #1 diesel or by fitting a spark-ignition system to the engine. The test engine performed best when it was fed ammonia as a vapor into the intake port and used #1 diesel fuel from the spray nozzles to help ignite the dual fuel mixture.

The only element ammonia needs to combust is oxygen, and that can be taken out of the air just as your car's engine takes oxygen out of the air with each intake stroke. When it combusts with oxygen it produces $NO_2 + H_2O$. This H_2O leaves as super- heated steam and helps cool the combustion process.

The big worry concerning the use of ammonia as a fuel is the formation of NOx compounds from the combustion with nitrogen. However, it has been shown that the use of ammonia in a blend of gasoline yields the following equation if the intake air is properly balanced:

$$\mathbf{N_2 + O_2 + C_6H_{11} + NH_3 => N_2 + H_2O + CO_2}$$

The above equation is not balanced for the simple fact that I left off the molecular fractions that define the ratios of Nitrogen, Oxygen, etc. as it makes the equation very complicated. For more information go to "UMI Microform", publication 3343076. The point I wanted to make is that it is possible to have a balanced reaction that does not produce any NOx compounds nor carbon monoxide, CO.

Ammonia can and has been burned in gasoline engines as a

gas vapor in much the same way that propane gas is burned in vehicles today. If you are familiar with propane and understand that it is a gas at standard pressure and a liquid at a slightly elevated pressure, then you have a good idea what it is like to handle ammonia.

The same fuel metering components fitted to an engine that has been equipped to burn propane will work with ammonia, but only marginally due to the slow flame propagation of ammonia. In order to get it to work properly the gas needs to be heated and subjected to iron catalysts which will begin to break the ammonia down into hydrogen and nitrogen before it is combusted. The introduction of some free hydrogen along with the ammonia itself dramatically aids in combustion. Unfortunately the technology is not up to speed.

No. 3 Hydrogen Peroxide, H_2O_2

Hydrogen peroxide is a viable alternate energy storage medium able to compete with hydrogen gas, biogas, biodiesel and alcohol. H_2O_2 is an energy-dense fuel that burns as cleanly as H_2 but requires no oxidizer as it is provided in abundance within the formula itself. In actuality H_2O_2 does not burn but decomposes with the net result releasing tremendous energy. This amount of energy is close to the energy per mole of H_2.

H_2O_2 is like water and therefore does not need a pressure vessel to contain it. It is generally diluted by 96.5% water when used as a mouthwash within the home. When the concentration of H_2O_2 reaches 80% or above, where H_2O is the impurity, it is considered an explosive.

Extreme mechanical shock or heat can set H_2O_2 off. It is normally "burned" in jets and other devices by catalytic decomposition using silver screens and other catalysts. If ignited and contained it will produce 3500 psi steam. Prototype helicopters have been designed that flew with rotors containing H_2O_2 jets on their blade tips with no tail rotors needed (and no central engine). Very cheap and simple propulsion is possible with hydrogen peroxide, if only they would allow its use as an energy and not just a

mouthwash.

Properties:

Stable storage
Relatively easy to produce
High energy output
Only emits water vapor and oxygen
Auto retrofits would not require much in the way of modifications
Would not require overhaul of existing fuel storage and distribution infrastructure

Uses of H_2O_2 as a Fuel

Rocket Propellent In this case, the H_2O_2 is typically passed over a catalyst, usually a silver mesh. The catalyst causes the oxygen and hydrogen in H_2O_2 to separate into O_2 and H_2 which then recombine explosively to form H_2O (water).

This hydrogen-rocket-powered car can accelerate to 450 mph in less than 4 seconds. At 60 bars, the rocket engine will produce 4200 pounds of thrust for 5 seconds.

In the foreseeable future, shaft turbine engines which burn H_2O_2 and produce zero emissions will be lighter, faster and more economical than internal combustion engines.

Hydrogen Peroxide injected into fuel at the temperature of the steam and oxygen mix ignites spontaneously.

Modified Internal Combustion

Habo No. 1 - Chinese-built prototype runs on H_2O_2. Its only emisions are water vapor and oxygen. (*LiveScience*; Oct. 18, 2004)

Hydrogen and oxygen in liquid form make powerful fuel. H_2O_2 hydrogen peroxide in a highly concentrated form referred to as HTP was used as a fuel for torpedoes in the mid-20th century (late WWII era). The primary reason for this was that through decomposition with another catalyst they could produce oxygen for combustion by liberating the additional oxygen molecule. With this additional fuel combusted to produce superheated steam as an end product you can power a turbine engine and allow it to operate submersed under water.

You can tell just by looking at the chemical formula for Hydrogen peroxide that it is a powerful and clean fuel. As you can see from these few examples, there are a few engineers daring to try using it. The main reason that it is not used more widespread is because the only ingredients are air and water. Gosh, where can we possibly find a feedstock?

Big Oily would sure have a hard time describing this as a non-renewable energy source. Their practices of avoiding the use of what is most readily available should be obvious by now.

No. 4, Hydrazine N_2H_4

Hydrazine is like ammonia, in that it is made from ingredients that are readily available, either from petroleum hydrocarbons, biomass, biogas, water and air. The fact is hydrazine is a promising

way to harness hydrogen, without having to pressurize it. The second thing I like is the fact that it contains no carbon atoms, therefore it will not produce any carbon dioxide when it is combusted. The third thing I like about it is the fact that both of the ingredients are available from air and water, therefore the supply is inexhaustible. The bad thing about hydrazine is that it is toxic to touch, eat or breathe. Yikes!

> There are several ways to produce hydrazine but the most notable method is by combining hydrogen peroxide with ammonia. From these you get **hydrazine, N_2H_4.** Hydrazine is synthesized from ammonia and hydrogen peroxide in the Pechiney-Ugine-Kuhlmann process according to the following formula:
> $2NH_3 + H_2O_2 \rightarrow H_2N\text{-}NH_2 + 2H_2O$

Now hydrazine will need oxygen in order to combust so it could be used in a reciprocating engine that breathes atmospheric air. The only problem is that our typical car engines will blow apart within a short amount of time since they were never meant to handle such extreme gas expansion. Just adding a few ounces to your tank would probably cause your engine to race out of control and destroy the connecting rods. This is seriously powerful fuel!

But for some applications like aircraft propulsion, hydrazine (or better) should be a mandatory fuel specification, especially for turbine engines which draw in plenty of air for combustion. Thirty thousand feet up mere drops of fuel could replace gallons, resulting in planes no longer having to lift upwards of 500,000 lb. of lost weight.

I no longer believe their figures, but, the industry claims that today's modern air jet consumes about seven times as much weight in fuel as it carries in cargo on a long range flight. Perhaps the closer truth is: we're just being charged for the fuel (why would they really have to burn it?). By no stretch of the imagination does the use of heavy kerosene for lifting airplanes make any sense when compared to hydrazine, except to those who are legally insane.

And, for extreme power, a way to get unlimited oxygen to combust hydrazine is by mixing in hydrogen peroxide. This was the

1944 fuel formulation German engineers used to power the ME 163 rocket plane known as the Comet.

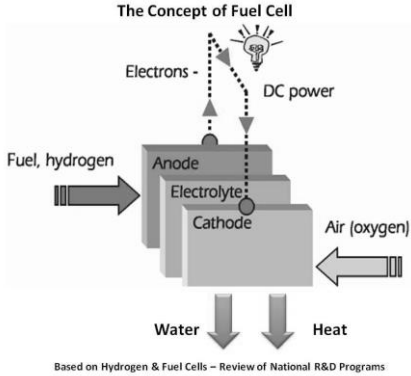
Hydrazine combusted with hydrogen peroxide could be diluted with standard H_2O and possibly another catalyst for use within a combustion engine. This would extract some of the energy from water to steam thus harnessing extra heat with the added benefit of super-heated steam being produced to enhance expansion and power.

How about using hydrazine plus hydrogen peroxide in a fine emulsion with about 90% water? Perhaps a hydrazine reaction would create enough energy to split the water molecules into free hydrogen and oxygen? Perhaps this reaction should be helped along by placing a nickel or platinum catalyst specimen in the combustion area.

The Hydrogen Fuel Cell

From Wiki: *In a Hydrogen Fuel Cell hydrogen is fed into a cell alongside oxygen and discharges water and electricity. Sir William Grove developed the first fuel cell in England in 1839. "There are many types of fuel cells. For example, Carbon Dioxide gas can be combined with specially developed algae that break it down into oxygen and plant material. The plant material developed has an unusually high percentage of fatty acids which can thusly be turned into hydrocarbon fuels or alcohol.*

A fuel cell is an **electrochemical energy conversion device**. It converts the chemicals hydrogen and oxygen into water, and as a result produces electrical power efficiently. The only by-products of an operating fuel cell are heat and water. In principle, a fuel cell operates like a battery, but chemicals constantly flow into the cell so it never goes dead. As long as there is a flow of chemicals into the cell, the electricity flows out of



the cell. Most fuel cells in use today use hydrogen and oxygen as the chemicals.

> The drawing demonstrates how a fuel cell consists of two electrodes – a negative electrode (or anode) and a positive electrode (or cathode) – sandwiched around an electrolyte. Hydrogen is fed to the anode and oxygen is fed to the cathode. Activated by a catalyst, hydrogen atoms separate into protons and electrons, which take different paths to the cathode. Electrons go through an external circuit, creating a flow of electricity. Protons migrate through the electrolyte to the cathode, where they reunite with oxygen and the electrons to produce water and heat.

Countries around the world are investing in commercially available technologies which do the following:

1. Separate and store carbon dioxide (CO_2) from "fossil" fuels.
2. Produce hydrogen from fossil and renewable energy sources.
3. Develop fuel cells for clean and efficient use of hydrogen.

Fuel cells are used in a wide range of products, ranging from very small fuel cells in portable devices, through mobile applications to heat and power generators in stationary applications in the domestic and industrial sector. Future energy systems will also include improved conventional energy converters running on hydrogen as well as other energy carriers."

Hydrogen Electrolysis:

> "Electrolysis is the process of using any energy source capable of generating electricity to split water into hydrogen and oxygen." Wind, hydro or solar energy are sources of energy for the electrolysis. In the process water is split into hydrogen and oxygen.

Electrolysis is most often employed using electric current and metal electrodes. It requires substantial amounts of electricity, unless you know what you're doing that is. If you use the right pulse modulation and catalytic elements it can provide a source for unlimited amounts of hydrogen. Big Oily hates electrolysis.

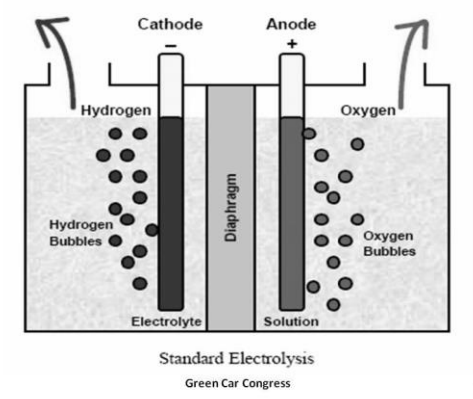


Figure 2

Stanley Meyer discovered a way to conduct electrolysis of water that was so efficient his car could totally run off of water. Here are just a few of the catalysts that have been tried over the years but are not limited to: Silver, Nickel, Galium, Boron, Platinum and others as well as alloys of these and ones yet unknown."

CHAPTER 19

Revolutionary Engines; Engineers RIP

A Review of Inventions/ Inventors and Dates:

James Watt	First reliable steam engine	1775
Eli Whitney	Cotton gin	1793
Robert Fulton	steamboat service on the Hudson River	1807
Samuel F.B. Morse	Telegraph	1836
Elias Howe	Sewing machine	1844
Isaac Singer	Improves Howe's sewing machine	1851
Cyrus Field	Transatlantic cable	1866
Alexander Graham Bell	Telephone	1876
Thomas Edison	Phonograph	1877
Thomas Edison	first incandescent lightbulb	1879
Nikola Tesla	Induction electric motor	1888
Rudolf Diesel	Diesel engine	1892
Orville and Wilbur Wright	First airplane	1903

More Revolutionary Forms of Propulsion

You have seen solid examples of superior engine designs that have been held back for sake of company profits and monopolization. Now it is time to learn that many of these scientific and engineering breakthroughs harnessed forms of energy other than petroleum. This is a brief overview; much more is included in Chapter 18.

Now let's cut to the chase and discuss hydrogen technology. Water exists as two combustible gasses that are able to somehow combine in a 2 to1 ratio, such that they form a liquid. The fact that this liquid will not ignite when exposed to fire is a bit hard to explain. Never-the-less, 99 % of the scientists and universities out there are more than willing to lecture us about energy from water, as if they understand everything about it. In truth they can't even explain why it doesn't burn as a liquid.

All good scientists think they know the truth. Actually they know the "best" truth; the one that fits the university's dogmas. Along with petroleum being a fossil fuel, they sponsor and dutifully blather such following statements:

"*Water can be broken into hydrogen and oxygen using electricity, but when you re-use the hydrogen and oxygen gas to generate electricity, you end up with less electricity than that which you used to split the water into gasses.*" **Wrong!**

For most industrial reactions involving electrolysis the above statement applies, and you can more than bet Big Oily wants it to! But this is not the final answer; it simply fails to recognize the many ways that water molecules can be "tricked" into breaking apart with very little input energy required. One of the best examples of a "low energy" method to break water into combustible hydrogen and water was the water powered car designed by the late Stanley Meyer. His car proved we are currently living in an era where mankind could and should be using water to power vehicles.

The method in which Stanley Meyer was able to split water molecules utilized electric wave pulse frequencies to break water into hydrogen and oxygen, and it consumed only a small amount of energy input. And there have been many others who have accomplished the same thing. Since this is a rapidly changing topic, with articles and YouTube videos being censured whenever they reveal a solid example, the best research is the latest research you can get doing a search for: "Suppression of Water Energy Technologies". Cars in the Phillipines are currently running on water. Check out www.Burn-Water.net

Easy Hydrogen Technology

Now that we are on the subject of hydrogen; just how could we most easily use it to power a mini-turbine, Wankel or Stirling engine? Well if you use hydrogen gas, H_2, by itself in gaseous form you will not be able to carry much of it. That is because it is almost impossible to compress it down into a liquid. This makes hydrogen as a gas very cumbersome fuel to utilize as it requires several 6,000 psi pressure tanks to be installed in the vehicle. This takes up all the cargo space, rendering it a no-win design.

When Arnold Swarzeneggar was governor of California he traveled around in a conspicuously marked "Hydrogen-Powered" Hum Vee vehicle to make the public think he was really interested in hydrogen as a fuel. His "vehicle of the future" used hydrogen gas that had been stripped from petroleum feedstocks, meaning from the

get-go the program would never threaten the oil industry, even if it did somehow succeed.

The vehicle's H_2 gas was stored in six long high pressure tanks which took up most of the cargo space within the truck. What kind of foolish engineers would ever put together such a monstrosity that has no cargo capacity thus could never be called efficient technology? Thus the Hum Vee hydrogen vehicle did not display hydrogen technology! It only proved that using hydrogen gas produced from petroleum makes no sense.

Engineers need to wake up. The easiest way to use hydrogen is not from its gaseous state but from a liquid state. It has been known since 1905 via the Haber process that combining hydrogen with nitrogen produces ammonia gas, a gas that is similar to propane gas when combusted in air.

Therefore, in reality, it is as easy to utilize hydrogen power in all of our vehicles as it is to burn propane. To burn ammonia in your vehicle you use virtually the same pressure regulator and nozzle as a propane-adapted system. Seriously, do you think that none of the best engineers in California's State Energy program do not know that NH_3, Ammonia, can be used to fuel gasoline and diesel powered piston engines, provide the same power as propane and eliminate carbon dioxide and carbon monoxide at the same time?

You might be surprised to learn that several countries, including Germany, actually used ammonia to power vehicles during WWII. Therefore isn't it obvious that the Hum Vee "hydrogen" vehicle was built to simply ignore this obvious technology? Thus the project was never meant to explore a viable method of applying hydrogen technology to a vehicle. They could have just used the

exact same material that is sprayed into the soil of every non-organic farm in the United States. It's called anhydrous ammonia. They could have called it "liquid hydrogen" instead. Imagine how that concept would have grabbed the public's attention!

Now here's the part that is maddening; the fact that when NH_3 is burned along with air it does not produce smog. When it is combusted with oxygen, O_2, it produces $N_2 + NO + H_2O$. Notice, there are no CO's.

Of course they have told us that these are hazardous exhaust gasses, even though neither of them equal the negative effects of the VOC's present nor the carbon monoxide, the constituent components of gasoline exhaust. They tout ammonia as being poisonous. Which fuel would you rather use; one that is used on our croplands for fertilizer (ammonia), or one that will kill the soil for ten years if you apply it (gasoline)?

The oil-produced gaseous-powered Hum Vee vehicle thus served to steer the public down a blind alley. The truth is ammonia as fuel for vehicles has already been fully developed since World War II. Since it is easy to combine hydrogen with nitrogen; both of which can be taken right from the air via the Haber process, ammonia represents a cheap way to convert our existing cars, trains and planes to hydrogen energy.

Right now we could be running our existing cars on a fuel that is about the same cost as water, and not only this, but as I have stated, **it would stop the production of carbon monoxide along with harmful VOC's from all of the combustion engines in the transportation sector.** Imagine what that would do for the air quality in our cities, airports and factories?

This is decades-old technology that has been denied us every year in preference for petroleum-burning smog-producing cars. Again, something is very wrong with the lack of concern for public health within the transportation systems we have built and paid for. If we were allowed to put into the public domain what we have in the way of current technology, we would have revolutionary forms of propulsion. And if we had been allowed to steadily progress up the ladder of rational progress in the field of hydrogen technology,

we would have arrived at a design that uses hydrogen-electrolysis technology.

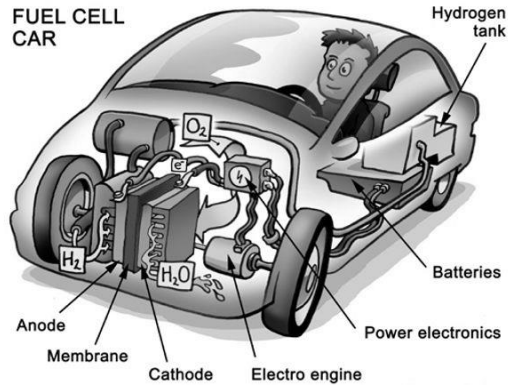
In the meantime the use of ammonia provides a bridge from gasoline technology to hydrogen technology by allowing us to utilize the engines we have already built. We would then be burning hydrogen in them instead of hydrocarbon (polluted gasoline).

Now, here's the next step in water technology. This one provides even higher levels of efficiency:

The Hydrogen Fuel Cell

Another discovery made during the 1800's was that electricity is produced when hydrogen gas is reacted with oxygen gas to produce water. This knowledge paved the way for us to create electric power without the need for a mechanical generator.

In this concept, instead of relying on heat and combustion, the fuel cell produces electricity and water from the simple re-combination of hydrogen and oxygen.



A hydrogen fuel cell is thusly set up just like a battery; hydrogen is the anode and oxygen is the cathode. In this case we are going to produce hydrogen and oxygen from a catalytic reaction with water, separate them, then recombine them in the fuel cell. This then produces a steady controlled electrical output which is fed to a battery which supplies electricity to the drive motor.

Since there is no mechanical engine to eat up power from friction and heat losses, it only takes about 35% of the same amount of hydrogen using a fuel cell to produce the same amount of electricity using an internal combustion engine. This is why the

hydrogen fuel cell is so much more efficient than any type of mechanical power we have today.

For this application hydrogen and oxygen must be continually added to the fuel cell and therefore we need a continuous on-board supply of it. In the car schematic drawing, note that hydrogen is being continuously made on board before it is supplied to the fuel cell. In this manner there is no requirement for accumulation and pressurization.

As earlier discussed, hydrogen can be obtained by electrolysis of water utilizing catalysts that initiate the breaking of water into two separate gasses. Boron and silver have been used but there are even more referenced in the 1951 Secrecy Act. The combination of this technology with fuel cell technology makes it entirely possible to power a car on straight water. This is the true level of human expertize that we engineers and inventors have achieved and these should be on the road today!

The 1951 Secrecy Act

As you will soon learn there are even more advanced forms of energy that have been discovered but they are suppressed by the government. Water technology is highly substantiated due to the many electrolysis reactions using classified elements as catalysts that have been patented. On the following pages you will note they have been confiscated under a congressional act that has been in force since 1951. Oh really? Yep.

The following is a 1971 list of classified technologies to be declassified. They never were. And even this list does not include the best and superior ones. Still, it provides a reasonable glimpse of what is under the secrecy act itself. Below are just a few of the excerpts from the list of classified technology. Note bold items.

ARMED SERVICES PATENT ADVISORY BOARD , "ASPAB"
PATENT SECURITY CATEGORY REVIEW LIST.
PREPARED BY ASPAB SUB-COMMl1TEE
CHAIRMAN: H.L. MOURNING, AMC J.C. MORRIS, AF BERT CONVEY, NAVY
JANUARY 1971 [Originally classified Confidential, 1951 -Now Unclassified)

GROUP X -Propulsion Systems, Propellants, & Fuels Item 6A. Propellants (fuels and Oxidizers), producing any of the following characteristics:
a. Specific impulse greater than 350 pounds per second of thrust per pound of propellant at an operating pressure of a thousand pounds per square inch at sea level (NASA) (AF)
b. High temperature coefficient of burning rate (NASA) (AF)
c. Extremely high density (NASA) (AF)
d. Very low pressure exponents (NASA) (AF)
e. Temperature resistant (NASA) (AF)
Item 7. Additives for lubricants (AF)
Item 7 A. Additives for thickened hydrocarbon fuels and contaminants for hydrocarbon fuels (AF)

Item 8. Propulsion means for submarines, surface craft (including nuclear power plants and hydrofoils, and high energy per volume batteries) (NAVY)

Item 13. Gas turbines, special cycles and unusual design (AF)(AMC)
Item 16. Hydrogen peroxides, use of in propulsion systems (AMC) (NAVY) (AF)
Item 19. Borohydrides, use of in propulsion systems (AF) (Navy
Item 21. Improvements in gas turbines, components: compressors, turbines, combustion chambers, afterburners,
Item 24. Nuclear, ionic, free radical, plasma, MHD and related propulsion methods and devices (AF) (NAvy)
Item 27. Pollution control with relation to airborne gas turbine engines (AP)
Item 2S. Noise suppression related to gas turbine engines (AP)(AMC)
Item 29. Gas turbine engine components, bearings, seals and accessories (AMC)
Item 3 I. Fuel stabilizing additives (AMC) (AP)
Item 32. Fire safe fuel concepts (AMC) (AF) (NAVY)
I**tem 3. Fuel Cells: Electro-Chemical devices in which part of the energy derived from the chemical reaction maintained by the continuous supply of chemical reactants, is converted to electrical energy (AP) (NAVY) (AMC**
Item 3a. Electro-Chemical devices: other unusual and efficient energy conversion devices such as thermoelectric, thermionic generators (including installation procedures), biochemical sensors, and biological electrical power generation devices (AMC)-military applications only

(NAvy) (AP) (ABC)

Item 4. Thermionic convertor: a device which will convert heat energy directly (statically) to electric energy by means of emission of electrons from a hot cathode and collection of these electrons on a cold anode within a vacuum or gas-filled tube. (AP) (NAVY) (NASA)(AMC)

Item 5. A device which will convert heat energy directly (statically) into electrical energy by means of two dissimilar metals or semi-conductors formed into closed circuit and maintained at different temperatures (AP)(AMC)S17S(NA VY)

Item 6. Biochemical fuel cells and biochemical electric generators (NAVY) (AF)

Item 7. MHD generators (NAVY) (NASA) (AP).(AMC)

Item 8. Solar photovoltaic generators (AMC)-if > 20% efficient (NASA) (AP)

Item 9. Energy conversion systems with conversion efficiencies in excess of 70-S0% (AP) (NA

Item 10. Novel energy sources and storage devices for fuses (AMC) (AP) (NAVY)
Item 11. Pulsed energy source for high powered lasers (AMC) (AP) (NAVY)

Items 3 through 9 are applicable to water technology. According to this list, the reasons we do not utilize this technology or hydrogen fuel cell technology are made perfectly clear; it is against Federal Law. Now what do all the scientists who claim water can't be efficiently split say about this?

As mentioned, this is just a partial listing from the original 53 pages document and so is far from being a complete list of all the energy means they have suppressed since 1951. This list only contains items that were recommended for release to the public. I hope this helps answer the question as to whether or not superior forms of energy exist or not. I hope you now can clearly see that by having access to specific technologies and/or alloys we could produce hydrogen from water for free.

This begs the question: Is it possible that mankind, in his hurried quest for energy and power, has constructed huge oil

platforms on top of oceans of energy missed by shear ignorance? Yes it is possible that we are so ignorant, but that doesn't mean we are stupid. We are simply guilty of placing too much trust in Big Oily and Big News. That doesn't make the people bad; trust is normally a very good attribute of any people.

The splitting of water to form hydrogen and oxygen, then combusting them together to produce power is just one of many revolutionary and alternate sources of energy that have been found to exist. If American ingenuity and knowledge had been allowed to develop unimpeded by corrupt energy controllers, we would be utilizing types of energy that are formerly unknown.

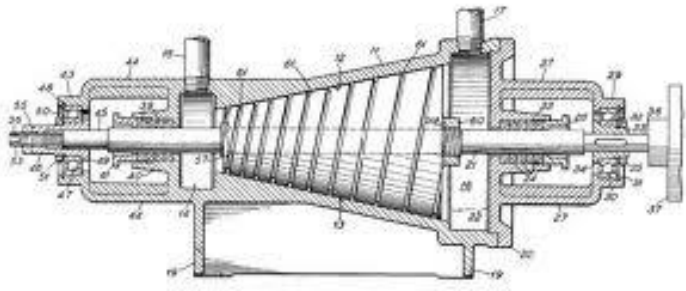
Three Unique Engines

In this chapter there are three unique "engines" discussed that were both revolutionary in their day and actually constructed into prototypes that were operated in vehicles and observed by other people. The first is the Clem Engine with information taken from **keeleynet.com**

The Clem Engine

> "Back in the mid-1970s', gifted inventor Richard Clem was working for the city of Dallas operating heavy equipment when he noticed that a heated asphalt sprayer for paving streets would continue running for many minutes after the gas engine was turned off. Exploring the design as a possible engine prototype led to the design of a closed system engine. From this design he built an engine that was purported to generate 350 HP. The engine weighed about 200 pounds and ran on cooking oil at temperatures of 300 F. It put out more power than it consumed from the vegetable oil it consumed.

Richard installed the engine in a modified automobile chassis and drove the car up and down Central Expressway in Dallas, around the area and even took a trip to El Paso and back. This sensational discovery was in the news at the time and even on local Dallas television.



- Truncated Conical Drag Pump -

The engine consisted of a cone mounted on a horizontal axis (we later were told it was vertical). The shaft which supported the cone was hollow and the cone had spiraling channels cut into it. These spiraling pathways wound around the cone terminating at the cone base in the form of nozzles (rim jets). Construction of the engine was from off the shelf components except for the hollow shaft and the custom cone with the enclosed spiral channels.

When fluid was pumped into the hollow shaft at pressures ranging from 300-500 PSI (pounds per square inch), it moved into the closed spiraling channels of the cone and exited from the nozzles. This action added to the spin of the cone. As the velocity of the fluid increased, so did the rotational speed of the cone.

As the speed continued to increase, the fluid heated up, requiring a heat exchange and filtering process. At a certain velocity, the rotating cone became independent of the drive system and began to operate of itself. The engine ran at speeds of 1800 to 2300 RPM and was described as literally capturing a 'tornado in a box'.

Shortly thereafter Richard Clem died from a heart attack and his papers and models were removed. The son of the inventor is said

to have taken the only working model of the machine to a farm near Dallas. There it was buried under 10 feet of concrete and has supposedly been running at that depth for several years.

The engine had been tested by Bendix Corporation. The test involved attaching the engine to a dynamometer to measure the amount of horsepower generated by the engine in its self-running mode. It generated a consistent 325 HP for 9 consecutive days which astounded the engineers at Bendix. They concluded the only source of energy which could generate this much power in a CLOSED SYSTEM over an extended period must be of an atomic nature.

As the years have passed, we have accumulated slightly more information, such as the fact that he first tried engine oil but found it would break down too soon due to the high heat produced by the engine, so Clem used Mazola cooking oil which would operate over many months at the requisite +300 degrees F..

From the Social Security Death Index;

Richard Clem
Born Oct. 30th, 1928
Died May 1978
Last known address Lewisville, Denton, Texas End"

Today there is an attempt by a designer named Jim Ray and his company (Micro-Combustion, Inc.) with what he knew of the Clem engine and how he had taken it much further, building several working models, which were tested and validated by NASA and by the Oak Ridge National Laboratory.

Jim is President of Micro-Combustion, Inc. He has gotten all of the documents posted and is now in the processing of tweaking it for a bit of additional information and cosmetic improvements. If you want to learn more about this rebirth of the Clem motor, please visit Micro-Combustion.com and read the various documents.

The Rory Johnson Cold Fusion Motor

"Rory Johnson's Magnetron Motor, as he named it, was a revolutionary new source of power derived from the chemical reaction / Fusion of Deuterium and Gallium.

Johnson in the early '50s worked for the Department of Defense. He said he spent most of that time flying to different Defense installations around the country, but would NOT say what his work entailed. He later worked in research and development at several companies, including Motorola, which brought him to Elgin, Illinois.

The Magnatron Motor discovery occurred by accident about 40 years ago, Johnson said. He was developing a new type of electronic circuit using Deuterium Oxide and Gallium when he noticed the two materials were producing energy on their own. He said he could not figure out what was triggering the energy production for quite a while. He finally discovered it was being caused by the overhead lights. This "Controlled Reaction" had resulted in the fusion of two atoms forming a new atom, he said. In the process electricity was released. This is what powered the engine.

In his Magnatron motor the two elements were fused together by using a diffraction prism ("Not a laser"), Johnson said. The Magnatron was sealed, however, so 'light' is provided from photon energy produced from coils tied directly to the motor, Johnson said. "It's more or less a pulse-generated system", he added.

Johnson would not say how the energy is converted to electricity to

power the motor. He said that was his secret discovery and he feared that if he lets the knowledge out it could be used for a weapon. "The Defense Department is working on producing a missile that generates and emits its own electrical power. I don't want to produce another weapon", he said. End of article. Here's another article:

Rory Johnson Gallium-Deuterium Fusion Magnetic Motor
Gerald Orlowski Posted on Saturday, July 01, 2006

"I believe Rory Johnson was one of the greatest visionaries of this century, and his operating Magnatron Fuel Cell motor was showing us the principle of attract-attract in motion - the nature of all physical substance. This subject is covered in greater depth later, but for now let us review my involvement with Rory Johnson and his 525 HP from Laser (Defraction Prism) Activated Motor that had a range of 100,000 miles and operated on 2 lbs of deuterium and gallium.

While on a business trip in Arizona I saw this motor running in the showroom at the Magnetron Co. Located in Elgin. IL. After I saw the Magnatron motor running, my life changed. I was no longer a happy camper working by myself in a wonderful fully equipped research machine shop for the Greyhound/Armour Corp. During my 15 years of electric motor repair, among the hundreds of motors I repaired, I rewound a 500 HP electric motor. That motor had wires exiting it that were the size of a garden hose. The Johnson motor being shown had NO wires. Surely this motor was unreal, a con-job to get money for dealerships. Yet there was Rory Johnson standing next to his sealed self-contained Electric motor.

Upon returning to the Greyhound Towers and telling them what I had seen, they instructed me to call Mr. Johnson. Greyhound wanted Johnson to put forth a plan to install a motor in one of their buses for testing purposes. I called Johnson. He was delighted that a Greyhound employee had seen the motor running and replied that the testing idea was acceptable. He would set a time frame for just when a bus should be delivered to him.

Two years went by, with no business proposal from Johnson. Then, his former business partner, Mike Marzicola, called to say Johnson had passed away. He wanted me to work with him to get one of the motors running. I flew to Orange Co., CA, saw the motor, took pictures, and put forth a plan to Greyhound. Subject to a contract with Marzicola, one of the old worn motors would be brought to the research shop. I would then very carefully reconnect the generator wires that Johnson had cut off prior to moving from Elgin, IL to CA.

Discussions with Marzicola brought out that the US government (given the authority by the Congress of `52) had issued a GRAB order to take Johnson's motors. Because of this grab order Johnson had cut the generator wires then put his `total shop', with motors and all, on several U-Haul trucks and left Illinois in the middle of the night and went to Calif. to re-establish his business. Before he could get a motor running, he passed away.

Surely, Greyhound would agree to let me re-start one of Johnson's motors, but the wonderful proposal put forth to Greyhound was rejected by mail. Very agitated, I went to the top office at Greyhound demanding an explanation but I was met at the door with the comment, "We know why you are here." Knowing the potential savings to the bus company, surely they could have only one reason for rejecting the proposal. They must have believed I was not qualified to start up the motor.

The top legal advisor stated he was present when the Greyhound board met and discussed my written proposal. He stated the following, "At NO time was the thought put forth that you would not succeed. In fact, we discussed all of the hardware designed and constructed by you, and started the conversation from what happens when Greyhound has a running motor". We contacted a State Rep.

and he felt this motor should not be allowed to be used in 4,000 + buses, and that the loss in tax dollars for fuel alone would be a very huge sum. He then asked me to leave, stating he was sorry that he had to tell me the reason the plan was rejected."

The Edwin Gray Pulse Engine

This book couldn't be complete without mention of Edwin Gray and his brilliant invention of the magnetron pulse engine. What it got him was similar to what it got for cancer-curing discoverer Royal Raymond Rife back in the 1930's. When Rife took his Atomic Microscope to the AMA, thinking they would be happy to applaud his discovery and thus share it with the medical world, they destroyed him instead.

During the developmental period of this revolutionary magnet motor from 1961 to 1971, Edwin Gray was to find himself up against the same bullies, but in this case they were trained to squash ideas thus to maintain our dependence on oil, whereas in Rife's case, it was to maintain our dependence on pharmaceutical drugs. Unfortunately for Gray, the bullies played their game to an extreme beyond any he imagined. I'll leave this part of the story for now and turn you over to a reprinted summary via Keely net.

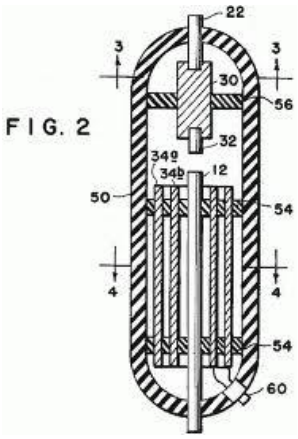


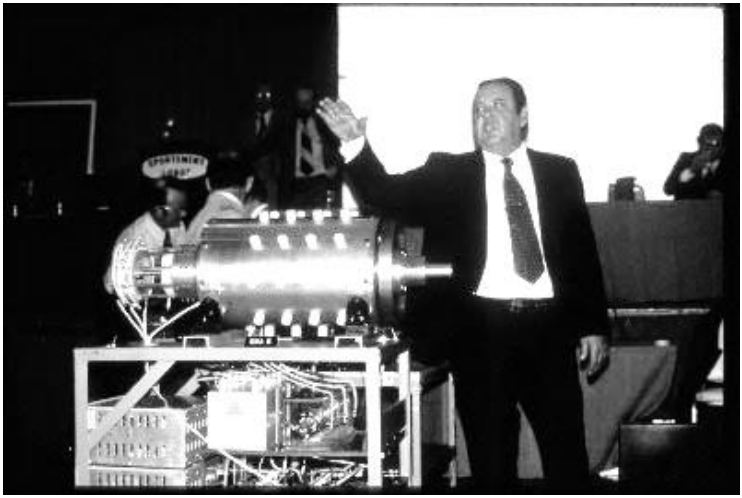
FIG. 2

> "Perhaps the reason Edwin Gray was able to create such an unconventional engine was because of his unconventional education. One of 14 children, he began tinkering with magnets and electricity as a boy. He left home when he was 15 and served a year in the U.S. Army before it was discovered he was under age and he was given an honorable discharge. During that year, he attended an Army school for advanced engineering. After the attack on Pearl Harbor, he reenlisted, this time entering the Navy.

After serving three years of combat duty in the Pacific zone, he returned to civilian life and found work in the field of mechanics. Resuming his experiments with electro-magnetic power, he seriously examined the theory of *energy used is energy spent.*

After years of research and experimentation, Gray conducted his first test of the EMA motor in 1961. The engine ran briefly and then broke down. Discouraged but not defeated, he constructed a second electro-magnetic motor, which ran for an hour and a half before failing.

A third prototype ran for 32 days attached to various automotive transmissions and test equipment. It was then dismantled for analysis, and detailed reports were prepared. After rejection by large corporations and money promoters, Gray formed a limited partnership in 1971 and constructed the fourth EMA prototype.



With assistance from nearly 200 private citizens, EvGray Enterprises spent $1.1-million in the attempt to recycle present lost energy and redirect magnetic forces with the EMA motor. It's called the EMA (electro-magnetic association) motor and, in technical jargon, is described as;

"digital-pulsed," "time-phased" and "servo-controlled."

Developed by EvGray Enterprises, the unique engine ran on the principle of electro-magnetic transformation. In terms more

meaningful to the layman, the EMA motor required no fuel, recycled its own energy, created no waste and was extremely quiet. Its size, weight and horsepower ratios were comparable to motors and turbines then in use.

The EMA's only external power source consisted of four 6-volt batteries which never needed recharging. EvGray claimed the motor duplicated the power and torque characteristics of internal combustion engines of similar size and weight. The Federal and State Air Resources Board granted the inventor a permit to further prove this claim by installing the EMA in test vehicles.

Edwin Gray, Sr., president of EvGray, predicted that production costs of the EMA would be comparable to present motors and maintenance costs would be far less. "The EMA motor promises to make the world a cleaner place in which to live," said Gray, who spent 12 years developing the engine. "Perfection of the EMA motor as a generating source could mean the availability of inexpensive power to underdeveloped nations."

Lightening and Energy Strikes

Gray describes the operation of his EMA motor as "similar to re-creating lightning." He says the engineering and scientific world has known this re-creation is possible but hasn't known how to do it. "When lightning hits the ground, causing a 10-million- volt buildup, where does energy come from to make it from a static charge to a lethal charge? Nobody really knows."

Richard B. Hackenberger, Sr., vice-president in engineering for EvGray, explained how the EMA motor system operated this way. "Power from the high-voltage section is put through a system of electrical circuitry to produce a series of high-voltage `energy spikes.' The spikes are transferred to a small control unit, which in turn operates the major motor unit."

The control unit, acting in a manner similar to that of a distributor in an internal combustion engine, regulated the spikes, determined their polarity (whether north or south) and directed their power to selected electro-magnets in the main unit.

While this occurred the recycle/regeneration system recharged the batteries with 60 to 120-amp pulses. The electro-magnets were located on both the rotor and stator of the large motor. Attraction and repulsion between the two sets of magnets caused the motor to operate and generate horsepower.

In short, the principle of the engine was to create electricity and recycle energy by the fact that every time magnets are energized off the peak of transients, a charge goes back into the battery. It's not a constant charge, but a pulse charge of 60 amps or better; thus, the battery must be of high quality. The batteries for the EMA motor were furnished by McCulloch Electronic Corporation of Los Angeles.

Long Range and Powerful

Electric-powered vehicles have a poor energy-storage factor and their heavy, large batteries have thus far made them impractical for use in vehicles requiring a long-range capacity. The maximum range of these vehicles when driven at 40 miles per hour has been approximately 150 miles. Range is affected by the number of stops and starts, grades traversed, and acceleration demands. The EMA motor needs only to run at 500 rpm for the normal recharging system to work.

"The idea of a self-sustaining electric motor," said Gray, "at first appears to go against much of the theory of electricity and conservation of energy. The EMA motor does not, however, violate the basic laws of physics, but rather utilizes them in a unique integration in a system in order to maximize upon the characteristics and interrelationships between electrical, magnetic, and physical components. The EMA prototype motor has had considerable operating test time and has been adapted to standard and automatic automobile transmissions."

Dynamometer tests recorded the rpm's of EvGray's motor at 2550 constant, the torque at 66 pounds constant yielding brake horsepower of 32.5. After a test run of 21 minutes, the battery voltage reading was 25.7Volts.

> The electro-magnetic motor attracted attention from important government agencies, including the Environmental Protection Agency, the Air Resources Board, and the Department of Transportation. Governor Ronald Reagan of California presented Gray and his wife, Evelyn, with a certificate of merit. Others indicating interest in the project were congressmen Barry Goldwater, Jr., Edward R. Roybal, Del Clawson and James C. Corman, U.S. Senator Alan Cranston, and state senators Alfred E. Alquist and Nicholas C. Petris.
>
> According to Edwin Gray, "Only those in the scientific world who understand the theories of physics are able to comprehend how our motor works. There's only a handful of such persons. The programmer directs which magnets are to be energized for what length of time and in what polarity. There are several attractions and repulsions taking place at the same time."

After 12 years of research and development Gray believed he had found the answer after spending a meager $1.1 million in research but at the age of 48 and while in good health he was found dead. His girlfriend testified there was a bloodstain underneath where his body had lain after he supposedly had suffered a heart attack.

You have seen several examples of better transportation devices that have been built and tested to serve as prototypes. They featured unique forms of propulsion energy so efficient and powerful they would revolutionize the world's transportation vehicles into ones that would require only a fraction of the energy consumed today. One thing in common: all of them demonstrate a form of energy that is far superior to petroleum energy.

CHAPTER 20

The Atomic Car And Our Atomic Future

THIS CHAPTER CONTAINS information on the Atomic Car that was researched by Ford during the 1950's. Since that time the concept of any and all nuclear powered devices has become synonymous with harmful radiation that persists for hundreds of thousands of years. Unfortunately this attitude does not fit with current quantum leap discoveries in energy production through the use different types of atomic elements, such as thorium and nickel. The fact is a nuclear reaction does not have to produce harmful radiation as a byproduct.

Combustion and oxidation is the combination of atoms exchanging electrons. This is mild compared to the amounts of energy released during the breaking of an atom's nucleus. Mankind's current skill and knowledge have brought us to the harnessing of nuclear reactions.

The energy potential locked within the nucleus of metals like nickel and thorium exceeds our current chemical reactions, like the oxidation of hydrogen with oxygen,

beyond the potential of what most people can begin to fathom. On top of this is the fact that nickel and thorium are so much more abundant than uranium.

All that comes to most people's minds now, however, is radiation and the reason this comes to mind is because the nuclear industry as a whole took the worst possible path when they entered the nuclear reaction era. They chose uranium as the fuel source. If they had just chosen a different element, like thorium, which is right next to uranium on the atomic chart, we would not be facing a nuclear waste nightmare like the one we are facing today.

Thorium is an element that can be used in a controlled atomic reaction just like uranium to power electric steam driven turbines just like uranium does but is a much better choice for electric generation because it does not produce harmful radioactive waste.

Shortly after the Fukushima disaster began to unfold the Chinese announced they were building all of their future reactors with thorium as the fuel source. So this is not some dream.

As of 2023 China still claims to have the world's largest national effort on thorium fueled MSR reactor designs and still plans to assert global intellectual property rights on the technology. If the TMSR-LF1 proves successful, China plans to build a reactor with a capacity of 373 MegWatt by 2030. (Reference: Molten Salt Reactors – WNA)

Ford's Atomic Car

As opposed to the chemical reactions we have been discussing so far with the combusting of hydrogen fuels and such, the next quantum jump in energy liberation is the initiation and control of small nuclear reactions that are safe and can be adapted to small sizes for vehicles. Example: the electrified bombardment of a metal with hydrogen in concert with a catalyst such as boron can be utilized to get the host material, nickel, to undergo a nuclear reaction in which it loses a proton in the process and turns into copper. In the process an amount of energy is released in the form of heat that

is thousands of times more powerful than anything we have looked at so far.

Such a powerful reaction requires that we remove a proton or neutron and thus create another element. But that doesn't mean that we have to create harmful isotopes in the process as they are produced when uranium is used.

At first the idea of an atomic car may look like the craziest idea for a car that you have ever heard of, then again perhaps this is the direction we should have proceeded in since the discovery of the atom. This is why I like the concept these engineers were investigating. They dared to dream that perhaps someday in the future, after all of our inventing and toiling with ways to get ourselves from point A to point B, we would finally be able to go farther than 300 miles without stopping for fuel. Let's consider the Ford concept car:

> Posted by Alan Bellows on 27 August 2006
> The Ford Nucleon concept car
>
> "During the 1950s, much of the world was quivering with anticipation over the exciting prospects of nuclear power. Atomic energy promised to churn out clean, safe electricity that would be "too cheap to meter." It seemed that there was no energy problem too large or too small for the mighty atom to tackle during the glorious and modern Atomic Age.
>
> It was during this honeymoon with nuclear energy– in 1957– that the Ford Motor Company unveiled the most ambitious project in their history: a concept vehicle which had a sleek futuristic look, emitted no harmful vapors, and offered incredible fuel mileage far beyond that of the most efficient cars ever built. This automobile-of-the-future was called the *Ford Nucleon*, named for its highly unique design feature… a pint-size atomic fission reactor-in-the-trunk.
>
> Ford's engineers imagined a world in which full-service recharging stations would one day supplant petroleum fuel stations, where depleted reactors could be swapped out for fresh

ones lickety-split. The car's reactor setup was essentially the same as a nuclear submarine's, but miniaturized for automobile use. It was designed to use uranium fission to heat a steam generator, rapidly converting stored water into high-pressure steam which could then be used to drive a set of turbines.

One steam turbine would provide the torque to propel the car while another would drive an electrical generator. Steam would then be condensed back into water in a cooling loop, and sent back to the steam generator to be reused. Such a closed system would allow the reactor to produce power as long as fissile material remained.

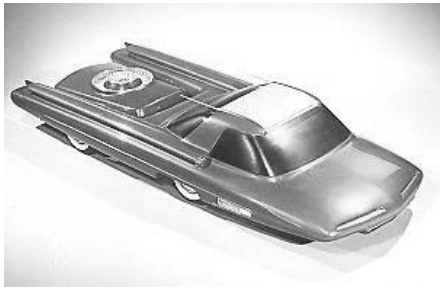
At right: William Ford alongside a 3/8 scale Nucleon model and without the noisy internal combustion and exhaust of conventional cars, the Nucleon would be relatively quiet, emitting little more than a turbine whine.

Using this system, designers anticipated that a typical Nucleon would travel about 5,000 miles per charge. Because the power-plant was an interchangeable component, owners would have the freedom to select a reactor configuration based on their personal needs, ranging anywhere from a souped-up uranium guzzler to a low-torque, high-mileage version.

The vehicle's aerodynamic styling, one-piece windshield, and dual tail fins (which are absent in some photographs) are reminiscent of spacecraft from 1950s-era science fiction but some aspects of the Nucleon's unique design were more utilitarian. For instance its passenger area was situated quite close to the front of the chassis, extending beyond the front axle. This arrangement was meant to distance the passengers from the atomic plant in the rear and to provide maximum axle support to the heavy equipment and shielding.

Sources claim that the US government sponsored Ford's atomic car research program but the Nucleon's design hinged on the assumption that smaller nuclear reactors would soon be developed, as well as lighter shielding materials. When those innovations failed to appear the project was scrapped.

As the general public became increasingly aware of the dangers of atomic energy and the problem of nuclear waste, the thought of radioactive "atomobiles" zipping around town lost its appeal. Scientists and engineers soon revealed the dangers of uranium fueled reactors. Later, the fact that the NRC, through mismanagement and faulty regulations had let nuclear accidents occur all too often, took center stage. The promise of a clean nuclear energy was broken at that point."



The Nucleon remains an icon of the Atomic Age. In spite of the Nucleon's flaws, its designers deserve a nod for their slapdash ingenuity. Their reckless optimism demonstrates that one shouldn't consider a task impossible just because nobody has tried it yet– some ideas need to be debunked on their own merit.

Ford's nuclear automobile could have embodied much more than the naive optimism of the era. Thorium reactors had already been built and tested at this time, so uranium technology was forced upon us, not selected by us. Most people were ignorant of the dangers of the atomic contraption, then again they could have been built safely using different elements to bombard and react together. A safe nuclear powered vehicle is actually within our reach.

We will now look at a new atomic-powered heater/electrical generator known as the E-Cat Converter. This revolutionary "cold fusion" device utilizes nickel in a temporary nucleic switch with copper which produces heat 100's of thousands of times beyond

petroleum on a lb. for lb. basis. Since it uses nickel instead of uranium the reaction produces no radio-active byproducts.

Nuclear Reactions Vs. Chemical Reactions

In a class by itself, the E-Cat Converter

The E-Cat Converter has nothing to do with uranium and produces no atomic radiation. Never-the-less, it is a true nuclear powered device. By converting nickel into copper the reaction taps the energy of an atom's nucleus, therefore producing a nuclear reaction. It produces an atomic reaction, not a chemical one like all of these other fuel and energy sources described. For this reason it puts out approximately one million times the amount of energy on a per pound basis than conventional chemical reactions like gasoline combustion.

This E-Cat converter device has been built and tested in Italy at a plant founded by an Italian inventor who has received a patent from the Italian government for his invention. There are several prototypes being built at the time this book is being written but they have yet to make it to market. As of 2023 it looks like this invention is not going to see the light of day.

How The E-Cat Converter Works

By using certain catalysts of boron and nickel to enable the transformation of nickel into copper, there is a subsequent release of energy in the form of heat. How much heat? **One ounce of nickel will produce as much thermal heat as 300 tons of coal.**

The technology is capable of producing over 4 kilowatts of thermal power from a reactor vessel only fifty cubic centimeters in volume (about the size of your fist).

Cold fusion research has been ongoing for two decades, and there have been thousands of successful experiments. However,

Andrea Rossi's technology is the most promising cold fusion technology yet to emerge. His company, Leonardo Corporation, has licensed the technology to the Greek company Defkalion Green Technologies Inc., with sole purpose to sell, license, and manufacture industrialized commercially applicable products using the Andrea Rossi Energy Catalyzer with global exclusivity rights; except the Americas.

The E-cat converter makes an atomic reaction possible at temperatures in the range of temperatures man can control and with materials man can produce and construct. It would revolutionize energy mechanisms as we currently know them. It is totally clean and green. The energy can easily be harnessed by using conventional, readily available third-party equipment such as steam power plants to produce electricity.

One country that could benefit in particular is Greece which possesses 83% of Europe's nickel deposits. This should be key strategic consideration since at this time much of the world is experiencing a global financial crisis. Greece now has a golden opportunity to become energy self-sufficient as well as a technological leader in this new scientific field.

As of November 2023 attempts to get the units produced in Italy have been delayed. The governments of the world are stonewalling the invention. The current plan is for Rossi's group to sell heat, not units. What a mess!

Thorium And The Nuclear Industry

Much needs to be done to remedy the current nuclear crisis caused by a slew of nuclear operational mistakes. By getting a handle on its potential, you can get a proper handle on the world's energy situation today. To name a few: Fukushima, the New Mexico nuclear repository, the San Onofre power plant, the Hanford waste dump, the Indian Point nuclear plant and a host of other locations located around the globe. They must be dealt with immediately.

The only way to begin dealing with the crisis is to make people aware of the crisis itself. If you want to be a valuable part of the world's energy picture for the future then you need to read up on Thorium. US physicists in the late 1940s explored thorium fuel for power. It has a higher neutron yield than uranium, a better fission rating, longer fuel cycles, and does not require the extra cost of isotope separation.

Thorium could be utilized in nuclear reactors. Thorium's advantages start from the moment it is mined and purified. All but a trace of naturally occurring thorium is Th232, and this is the isotope that is useful in nuclear reactors. That's a heck of a lot better than the 3-5% uranium ratio typically achieved from every ton of the mineral mined.

Then there's the safety side of thorium reactions. Unlike U235, thorium is not fissile. That means no matter how many thorium nuclei you pack together they will not on their own start splitting apart and exploding. If you want to make thorium nuclei split apart you simply start throwing neutrons at them. When you need the reaction to stop simply turn off the source of neutrons and the whole process shuts down. Simple as pie.

Here's how the Thorium reaction works: Thorium is bombarded with neutrons. When Th232 absorbs a neutron it becomes Th233. Th233 is unstable and decays into protactinium-233 and then into U233, the same uranium isotope we use in reactors now as fuel. This one will fissile on its own but thankfully it is relatively long lived. So at this point in the cycle the irradiated fuel can be unloaded from the reactor and the U233 separated from the remaining thorium. This recovered uranium is then fed into another reactor, all on its own, to generate energy.

The U233 does its thing, splitting apart and releasing high-energy neutrons. But there isn't a pile of U238 sitting by. With uranium reactors it's the U238 turned into U239 by absorbing some of those high-flying neutrons that produces all the highly radioactive waste products. With thorium, the U233 is isolated and the result is far fewer highly radioactive, long-lived byproducts are left behind.

Thorium reactors produce only a fraction of the nuclear

waste from uranium reactors, and this byproduct only stays radioactive for 500 years instead of 10,000 years for uranium. There is 1,000 to 10,000 times more thorium on the planet than uranium.

We should have started with Thorium in the first place.

The Thorium Leaders Today

Although researchers have studied thorium-based fuel cycles for 50 years, India leads the pack when it comes to commercialization. As a home to a quarter of the world's known thorium reserves, and, notably lacking in uranium resources, their country's long range planners envision India meeting 30% of its electricity demand through thorium-based reactors by 2050. Yes, I know that is a long way off, but read on.

Originally planned to be commissioned in 2010, the construction of the reactor suffered from multiple delays. As of December 2022, the Prototype Fast Breeder Reactor was expected for completion in 2024.

In 2002, India's nuclear regulatory agency issued approval to start construction of a 500-megawatt electric prototype fast breeder reactor, which was to be completed in 2014. India officials now say they are aiming to have the plant operational by 2024.

China is the other nation with a firm commitment to develop thorium power. In early 2011, China's Academy of Sciences launched a major research and development program on Liquid Fluoride Thorium Reactor (LFTR) technology, which utilizes U233 that has been bred in a liquid thorium salt blanket. This molten salt blanket becomes less dense as temperatures rise, slowing the reaction down in a with a built-in safety catch. It is thus this kind of thorium reactor that is getting the most attention in the thorium world.

If the world ever develops thorium power we will know that we never should have used uranium power in the first place. Proven designs for thorium-based reactors exist but need college and industry support. One of the biggest challenges in developing a thorium reactor is finding a way to fabricate the fuel economically.

Making thorium dioxide is expensive, in part because its melting point is the highest of all oxides, at 3,300° C.

The options for generating a barrage of neutrons needed to kick-start the reaction regularly come down to uranium or plutonium. This brings part of the problem full circle.

China's research program is in a race with similar though smaller programs in Japan, Russia, France, and the US. And while India is certainly working on thorium, not all of its eggs are in that basket. India currently has 22 uranium-based nuclear reactors producing 4,385 MW of electricity already in operation and has another six under construction, 17 planned, and 40 proposed.

So the majority of India's nuclear money is still going toward traditional uranium. China is in the same situation and currently has 51 nuclear plants in operation

The Bottom Line

Thorium is three times more abundant in nature than uranium, but the heavy players in the world's energy picture are all heavily invested in uranium. We can expect this current investment group to dog and hinder the development of thorium reactors for many years to come.

All but a trace of the world's thorium exists as the useful isotope, which means it does not require enrichment. Thorium-based reactors are safer because the reaction can easily be stopped. In addition the operation does not have to take place under extreme pressures. Compared to uranium reactors, thorium reactors produce far less waste and the waste that is generated is much less radioactive and much shorter-lived. So the world should already be running on thorium.

The use of thorium would be the ideal solution for allowing countries like Iran or North Korea to have nuclear power without worrying whether their nuclear programs are a cover for developing weapons. Isn't this the main worry in the world right now? So why don't we begin disbanding uranium reactors? Haven't these reactors only resulted in the production of plutonium in virtually every

country?

The earth's crust holds 80 years of uranium at expected usage rates, whereas thorium is as common as lead. Almost all the mineral is usable as fuel, compared to 0.7pc of uranium. There is enough to power civilization for thousands of years.

America has buried massive tons of thorium as a by-product of rare earth metals mining. Norway has so much thorium that Oslo is planning a post-oil era where thorium will drive the country's next great phase of wealth. Even Britain has seams in Wales and in the granite cliffs of Cornwall.

The International Atomic Energy Agency states that the world currently has 440 nuclear reactors, generating 394 gigawatts of power that provide 10% of the electricity generated on the planet.

We can see today from Fukushima that these plants need to be shut down, not increased! We can see that all of the uranium fuel rods they have stacked up along coastlines and pristine lakes all over the world must now be collected up and bombarded down to lead. The last thing the world should do is EXPAND the use of uranium!

CHAPTER 21

Suppression Of Energy Technologies

There have been many inventions that would have dramatically increased the range and safety of the automobiles we currently drive. Many of these are simple devices that are easy to fabricate and install, but over time they have been bought out, had their original design corrupted, shut down, bankrupted, sent to jail for falsified claims, and the reasons go on and on. The complete list of them would number in the thousands.

Even before we designed and tested petroleum piston engines we explored better types of fuels. We have learned how to emulsify gasoline with water and how the water-vapor-steam pressure developed helps to reduce fuel consumption and carbon monoxide.

We have seen how oxygenation would greatly enhance the efficiency of engines. We have learned that one of the ways to put this oxygen into gasoline is to oxygenate it into alcohol.

We have shown how to use water as an oxidation provider, in which case we crack the water into oxygen and hydrogen during the combustion process, such that the gasoline can be converted into methane as it is being combusted. In these cases nickel and platinum catalysts have shown themselves to be effective in processing the

expansion of water into super-heated steam one step farther. This is what we referred to earlier as the catalytic cracking of hydrocarbons into methane and methanol. This would be some wonderful technology for mankind if we could just have access to it.

Another device that we have developed but they won't let us have is the hydrogen fuel cell which converts hydrogen and oxygen into electricity and heat directly. A good source of fuel for the hydrogen fuel cell is either methyl alcohol or ammonia. It is thus another example of a proven idea that should be a part of mainstream technology today.

Perhaps you still believe the idea is years away from bringing to the public. Consider that as early as 1867 the invention of the hydrogen fuel cell gave the world the knowledge that when hydrogen and oxygen are combined into water in the presence of catalyst electricity is produced.

A hydrogen fuel cell was once used in the public arena. In 1969 NASA sent fuel-cell batteries to the moon to supply the electrical demands of the Apollo orbiter. They were brash in telling us they had developed a revolutionary electric storage cell, but then afterwards nothing came of it. I ask you, where is that invention today after nearly fifty years have gone by?

Hydrogen and hydrogen energy is the people's choice for a bright future. Why we never got the hydrogen fuel cell is just a continuation of why we never got to use hydrogen gas as a lifting mechanism ever since the fire-bombing of the Hindenburg. It's all about covering up hydrogen by making it look risky, difficult to use, etc. The oil industry knows that hydrogen can be made from water. That's why it scares them to the core.

By now you know that the easiest way to run your car on hydrogen is by using ammonia from a tank just like propane. If you decide to operate a hydrogen fuel cell on a car equipped with a piston engine you are going to need a continuous supply of hydrogen and oxygen to supply that engine, are you not? So think about this, if you are going to have an onboard supply of hydrogen and oxygen, rather than feed it into an engine, it would be much better to feed it into a fuel cell and run wires to electric motors at the wheels. This is what

we need to be working on in our garages. In this way, we can dump the large engines, which no matter what we do, are going to require a lot of hydrogen to operate.

The easiest way to make a dent in your petroleum requirements is to buy a cheap diesel car and begin making bio diesel from used vegetable oil. You can even equip it to run on heated waste vegetable oil. The point is this gets you off the petroleum grid completely, and that is very difficult to do with anything but a diesel. And in a way, you are still running off of hydrogen, but in this case the hydrogen was provided by a plant process of photosynthesis of carbon dioxide and water and is thus toxic free.

Hydrogen Technology Summary

The standard method of electrolysis for water into hydrogen and oxygen is typically provided by an electrical reaction that requires a lot of electricity.

Under-Unity Electrolysis Of Water To Produce Hydrogen And Oxygen:

This process of using electrical current to excite electrodes in water to generate hydrogen gas has been known since the times of the ancient Egyptians. You can make a simple hydrogen generator at home with 12 volts of DC current. This process will give you free hydrogen and oxygen to burn. But, **you will not get more energy from the hydrogen and oxygen you produced when you turn around and combust it to produce electrical or mechanical power._** Standard electrolysis of water is an under-unity reaction, meaning you won't get back what you put in. It is thus not a way to create nor multiply energy.

Standard electrolysis is a worthwhile endeavor however, in cases where there is a free supply of electricity, such as a hydro-

generator, wind-turbine, etc. In these situations, the process can be utilized as a storage medium. For example, currently all of the wind turbines that normally operate in the northwest are shut down because right now there is an abundance of hydroelectric power from the dams. This is due to the heavy rains and winds the region has been experiencing for several months which led to an over-supply of electricity. For this reason the wind turbines are often shut down and just sitting there.

Let's say we kept these wind turbines running and diverted the electrical power to an electrolysis machine that produced hydrogen and oxygen gasses for us. These two gasses could be collected and stored then re-combined into a fuel cell for electrical power generation when needed. The gasses could also be turned into liquefied products like ammonia, NH_3, hydrogen peroxide, H_2O_2, etc. This would represent energy that was technically produced free of charge. Out in the desert, sunlight energy is available from every square inch of ground surface. This could be used to hydrolyze water, taken from the atmosphere or from ground water. This stored hydrogen and oxygen could be hooked up to a fuel cell and then plugged into the grid.

This is not free energy, but energy free of charge. We should definitely be using this "free of charge energy" whenever we can. And, next comes a slightly different term called "free energy" which takes this discussion one step further.

Over-Unity Electrolysis Of Water To Produce Hydrogen And Oxygen

Using the proper filter and concentrating ultra violet light from the sun, you can produce hydrogen peroxide H_2O_2 directly from water.

As previously discussed, this is great fuel because it has so much oxidizer as well as hydrogen. Now, we're getting into the realm of a reaction that taps a free energy, in this case sunlight, and in the process "grows" a liquid that is now extremely volatile.

You can see, how in this case, we tapped into an energy that was free. This energy is sunlight and it is provided free of charge. In this case, our free-energy device is a specially-coated panel that helps water combine with an extra oxygen atom. Now, instead of having common water we have a powerful fuel, which can be used in a power plant to produce electricity. And it all came from the sun.

Sunlight energy can be seen and felt. **And there are other free energies that exist on earth that we cannot see or feel.** Nevertheless, just like sunlight, gravity and magnetism, they exist. And just like sunlight, gravity and magnetism, once we construct a proper mechanism and/or achieve a balanced reaction, we can generate all the electricity we need without being limited by fuel costs or availability.

Since we have discovered them, we ought to at least have the use of them. And yet still today scientists and teachers at universities will emphatically state that it takes more energy to separate the hydrogen-oxygen molecule than you get in re-using them for combustion energy. This is absolutely correct in 99% of the methods currently employed in manufacturing processes that produce hydrogen. But there are ways to stimulate the reaction, such that you get more out than you put in, by using energies that are free, be they visible or invisible.

In other cases, the presence of certain elements acting as catalysts, also allow over-unity reactions to occur. Most of these formulas and catalysts end up classified as "international proprietary substances" under the United States Secrecy Act of 1951, which is still in effect. But what it means is these reactions aren't coming to light soon.

Remember, the oil industry and the military are inseparable. Big Oily feeds the military and the military advances and conquers for Big Oily. Therefore, chances are you are not going to find one source of such material via a publication or statement to the fact that they have a catalytic substance that will promote the over-unity of a chemical reaction. Such a reaction would change the world.

Metal catalysts that have been patented in the past include Iron, Copper, Boron, Nickel, Silver, Platinum, Gallium and others.

One promising reaction combines silver with hydrogen peroxide. This reaction will ignite and produce super-heated steam if it is poured through a silver screen.

The consideration and **use of hydrogen peroxide gives the public a way to proceed with the breaking of the water molecules** from information that we already have. Further attempts at harnessing the energy of pure water could thus be achieved simply by attaching an extra oxygen atom into the water molecule, then combust it as above to power a steam generator, etc. Instead most people are focused on splitting a water molecule first in order to get combustion with oxygen later. But we could simplify a difficult process just by figuring out a way to make Hydrogen peroxide, H_2O_2, cheaply. After all, the only ingredients are water and air.

Another way to achieve over unity is with electrolysis performed using electric pulses from a pulse-width modulator that is set at the frequency that water molecules vibrate at. For example, the natural resonance of crystal stones is 28 mega Hz. This frequency has been tried, and I am not saying that this is necessarily a solution to the low-energy-splitting of water. I am saying that this is the concept we should embrace if we want to use electricity to split water molecules most efficiently. What is the "frequency" of water? This is a question we should be able to answer.

The late Stanley Meyer successfully used pulse frequency combined with a square wave of just the right length and discovered hydrogen atoms would come lose from oxygen molecules readily, with little power necessary. How? What is the frequency of water? I believe Meyer's process capitalized on this frequency, or, possibly another type of "frequency", that itself taps into energy of the kind that Nicola Tesla had proposed at Wardenclyffe, where his tower was half constructed. Think of it as the potential energy that exists between the earth's negative charge and the atmosphere's positive charge.

Without-a-doubt, the most famous inventor to harness this free form of otherwise-unknown-energy was Nicola Tesla between 1910 and 1924. Since Tesla's times there have been many rediscoveries of this energy potential, such as the three engineers who

were discussed in chapter 23. Their inventions were able to tap into and harness this energy as well.

Once we know the method to unlock the hydrogen-oxygen molecule, such that we get more energy back than it took to break it apart, we have in-fact tapped into this energy that Tesla understood and proposed that mankind adopt in 1910.

As previously discussed, the most efficient way to use hydrogen and oxygen products as fuel is to combine it back together in a fuel-cell process. This would be the ultimate way to construct a car to run on water. The electricity produced is sent to a storage battery to both stabilize and multiply the current, then is supplied to a motor in the vehicle's wheels. This is the most efficient way to use hydrogen and oxygen to power a vehicle.

There have been many discoveries made that utilized a process that cracked water molecules with little or no input energy. An engineer I got to know in Fiji told me of an invention that he had personally seen demonstrated at the company where he worked in aerospace. It consisted of a tube made of iron about two feet in length, which was impregnated with Boron on the inside surface. As water vapor was fed in one end it reacted with the iron and boron such that what came out the other end was a combustible vapor that would burn if ignited with a match.

Imagine producing heat from water vapor just because you have the right catalyst. Such a catalyst would change the world. Unfortunately, the person who invented this device has not been heard from for 30 years.

In 2007 a Florida a man found that salt water produced hydrogen and oxygen while he was experimenting with radio waves. His discovery was in several small newspapers but was mysteriously never followed up. He claimed that certain radio frequencies act as a catalyst, and that with the added conductance of salt, hydrogen was readily released from salt water.

Why wouldn't such an exciting discover be announced on every single television station worldwide to herald in a new era of cheap energy that is pollution free? You already know the answer.

Another procedure to produce hydrogen is aluminum in

contact with caustic water. There are plenty of aluminum cans around which could be shredded up and tossed into a vat of caustic water (which could be produced by burning up plastic garbage and mixing with water). It just takes the right catalyst to keep the aluminum from forming an oxide coating which stops the electrolysis reaction. Gallium is an element that does this. Check it out on the internet.

Another process to produce hydrogen chemically is to combine Hydrochloric acid with Zinc oxide. This produces Hydrogen and Oxygen. Hydrochloric acid is relatively cheap to produce. So you can begin to see that there are innumerable methods that have been invented that produced hydrogen with little or no electrical input. More importantly, there are ways to store hydrogen cheaply, in the liquid phase. These liquids include alcohol, hydrochloric acid, hydrogen peroxide, ammonia and many others.

Now at this point, if you're a proud scientist, you are probably falling back on what you've been taught and perhaps you believe there is no way to separate water into hydrogen and oxygen without using more energy than the combustion reaction will produce. And I'll I can say is that I'm sorry that I haven't been able to reach that level of credibility necessary to convince you with just one reading of this document. But do consider this: there is absolutely no scientific, mathematic, nor philosophical reasoning that predicts that combining two combustible gasses (hydrogen and oxygen) will produce a liquid. Nor is there any scientific reasoning that explains why a liquid made from two combustible gasses will smother the fire rather than ignite the fire further.

Since neither science nor mathematics can explain these extraordinary properties of water in the first place, it's high time that we drop the attitude of being any kind of authority regarding the ultimate potentials of water and/or hydrogen-oxygen chemistry.

Types Of Alternate Energies

Here are types of alternate energies in addition to the ones noted beforehand. Each of these at one time or another has been a tangible invention built by man. Each was capable of successfully

harnessing energies that are in a form you probably have never heard of. Here is a very brief list of all of the various forms of energies that have been discovered.

Zero Point (Tesla) Energy
Magnet Energy
Tidal energy
Water Energy
Implosion (instead of explosion)
Orgone Energy

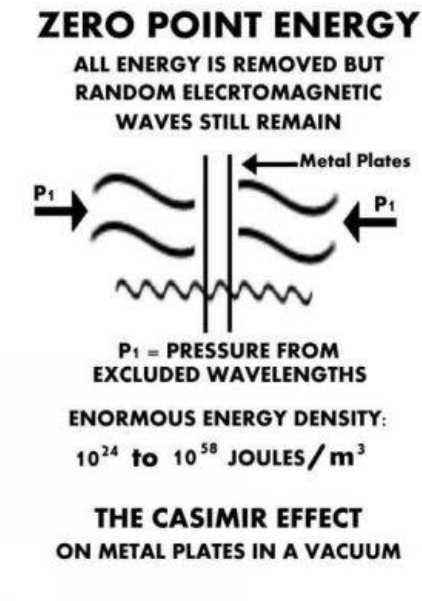
Regarding zero point energy: Are you ready to dispel the notion that energy in space does not exist? Can you see a magnetic field? How could you know everything about space, matter and energy when you know our eyes are blind to only that which falls into the range of the human spectrum, which is narrow? How could you know there is no energy in space even though you can measure the electric potential between the ground and the air?

Scientists throughout the world have shown that space energy or aether does exist, and that traditional laws of physics are not correct. You have already seen several examples that demonstrate the fact that free energy technology is here and available now.

Key Inventors Of Free Energy Machines:

Nikola Tesla:

1856 – 1943. Originally from Serbia, Tesla came to the United States with a letter of recommendation and applied for a job with Thomas Edison. He went on to become one of the most famous electrical engineer/physicist/scientist in history. Tesla was a world-renowned inventor in groundbreaking technology and understood the concepts of vibration, frequency, magnetism, gravity, and radiant energy.



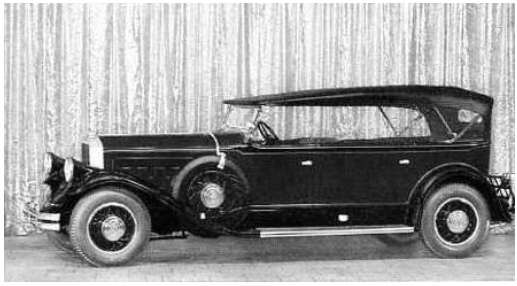
It was Nikola Tesla who invented AC power and saved us from the DC electrical system Edison had planned for New York and the rest of the United States. Tesla designed the world's first hydro generating power plant in Niagara Falls. By the time of his death he was the holder of 1200 patents.

In addition, Tesla invented the first radiant energy receiver that stored static electricity obtained from the air and converted to a usable form. He began construction of a working system that included the Wardenclyffe Tower near Long Island Sound to capture the free energy from the air. In addition he designed a machine to convert the free energy into usable electricity. The tower was meant to be the start of a national, and later global, system of towers broadcasting power to users in a form similar to radio waves. With Tesla's system, instead of supplying electricity through wires connected to a grid, users would "receive" electrical power through antennas on their roofs.

Tesla's tower was shut down by the bankster, J. P. Morgan, destroying Tesla's commercial reputation and interests in the process. The tower was later dismantled, but before it was, it

demonstrated its ability to store and conduct energy, even though it was only half completed. Today there is a similar tower being constructed in Europe that will use his same principles.

Tesla provided numerous public exhibits and demonstrations to validate that vacuum energy could be harnessed to do work. A classic example of this was Tesla's second electronic car in 1931 that ran on electricity provided by a "black box." In place of the internal combustion engine in the **1930 Pierce Arrow touring car** was an AC motor. The motor measured 3 feet long and was a little more than 2 feet in diameter. The motor was rated at 80 horsepower. Maximum rotor speed was stated to be 30 turns per second. A 6-foot antenna rod was fitted into the rear section of the car. Two very thick cables connected it with the dashboard. In addition, there was an ordinary 12-volt storage battery.



Tesla and his nephew, Savo, drove a distance of 50 miles through the city of Buffalo and out to the surrounding countryside. The car was tested to speeds of 90 mph. The black box appears to have been the unlimited source of "free electricity" that was the power for the AC motor. Tesla never disclosed the magic of his black box.

Patrick Keely

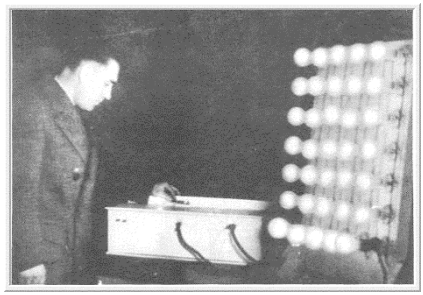
1872 – 1892. Patrick Keely was probably the earliest scientist to explore basic principles of resonance or Sympathetic Vibratory Physics, SVP, between objects and earth. He was a student of music and vibration phenomena and believed that everything on earth is in resonant harmony. He lived in Philadelphia from 1872 until his death in 1898.

During that time, he was written up in the local newspapers and in various national magazines as well as funded by many wealthy philanthropists. Keely was often targeted by Scientific American and others who could never disprove or duplicate any of his demonstrations or experiments during his lifetime. Upon his death, they pounced on his lab, claiming to find massive evidence of fraud in the form of hidden tubes and such in the walls and floor of his lab.

Keely basically took advantage of the natural properties of waves which, when rectified or conjugated take the form of push, balance and pull. Using resonance and phase conjugation Keely demonstrated a wealth of phenomena which included a compound motor that ran from many frequencies (later stolen by Tesla as his 'polyphase motor'),

HenryMoray,

1892-1974 Along with Tesla Henry Moray was an early pioneer in attempting to harness radiant/aether energy from the air. Over a 30 year period, he invented several prototypes of radiant energy machines. The photo is an example of his energy machine lighting up light bulbs.



In the early 1900's, T. Henry Moray of Salt Lake City produced his first device to tap energy from empty space itself. Later he designed and built a free energy device weighing sixty pounds that produced 50,000 watts of electricity for several hours. He demonstrated his device repeatedly to scientists and engineers but was never granted a patent for his radiant energy, R.E., invention.

Moray later, in 1934, re-designed his earlier energy device, called Radiant Energy. This R.E. machine weighed less than fifty pounds

and generated the same amount of power as his earlier model. It was enough to light a dozen homes at one time.

Gabriel Kron 1932:

Gabriel Kron's Network Analyzer was completely self-powered by negative resistors. The U.S. Navy, General Electric and Stanford University used this free energy system in the 1930s.

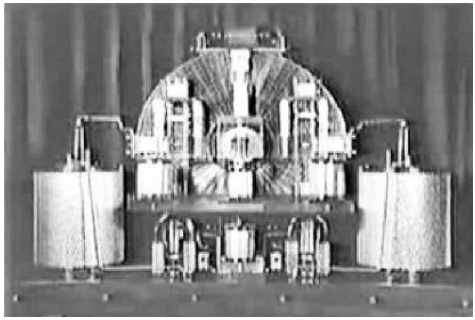
Kron's machine provides hard evidence that President Roosevelt and the United States government knew about free energy, and, had financed it in the early stages. Somehow the harnessing of free energy was voted out by those with power greater than the president of United States.

In the 1930s Russian scientists at the University of Moscow and supporting agencies developed and tested parametric oscillator generators exhibiting COP > 1.0. The theory, results, pictures, etc. are in both the Russian and French literature, with many references cited in this particular translation. Apparently the work was never resurrected after WW II.

Methernitha Testatika, Switzerland 1960's:

The running "free energy" machine, referred to as Testatika comes from Switzerland. It was developed over a period of 20 years of research by a religious group living in the Methernitha community of Linden, Switzerland. The inventor of this superb machine, Paul Baumann, claimed that its running principle was found by studying

natural lightning. This unique machine generates 3 KWatts of free power.



Gritskevitch Oleg Russia-Armenia Dynamo 1992:

The first time Oleg made the public aware of his work was in 1991 on a symposium in Volgodonsk city. The report received the positive replies and reviews of the experts of a nuclear industry in USSR. The same year he was accepted in international Nuclear Society and later offered development of this technology to different state bodies and private enterprises. But there was only one answer: 'It is very interesting and perspective project, but there is no money for it'.

A commercial prototype hydro-magnetic dynamo had been working in Armenia from 1992 to 1997. It was working and was producing energy until January 1997 when it was destroyed during the war. At the end of 8 years he tried to transfer this technology in US through the embassy in Moscow but was blocked, including all of his 70 patents.

The dynamo's production cost was estimated at $500 per kilowatt compared to nuclear power's capital cost of $5000/KW and a windmill's capital costs of $4000/KW. A well-run plant can generate power for 1.8 cents using coal, 3.4 cents using natural gas, 4.1 cents using oil and using the dynamo would be approximately 0.1 cent/KW-hour with no external fuel needed and without creating pollution.

Thomas Bearden 2002:

Researcher Bearden stated that there is no doubt over-unity engines exist. Bearden's MEG, Motionless Electromagnetic Generator, with no moving parts, is claimed to provide a steady flow of 2.5 Kilowatts forever without the input of any fuel whatsoever.

Jean-Louis Naudin 2003:

Jean-Louis, a French scientist, successfully replicated Bearden's Motionless Electromagnetic Generator (MEG) in France in 2003. Check out the Naudin: MEG engine France

Nakamats Yoshiro 2005:

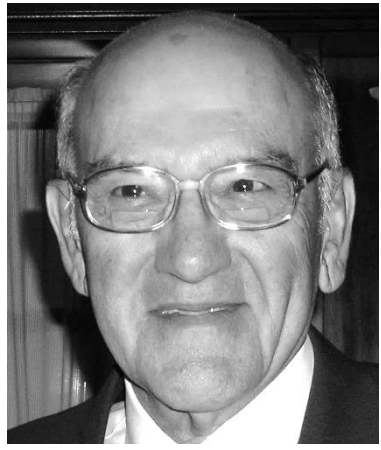
Nakamats Yoshiro is a Japanese inventor who claims to have harnessed cosmic energy to power his home in 2005. With its distinctive floppy-disk-shaped front door, his four-story concrete building is powered by 'cosmic energy whose source is charged particles arriving from outer space in rays at roughly the speed of light.

A black 'antenna' that covers most of one exterior wall collects this energy and distributes it to a converter that then produces enough electricity to power the entire facility with 30 guest rooms. Nakamats says the rooms are used by scientific luminaries from around the world who congregate to share new ideas.

Chinese Scientists In 2007:

Calling their breakthrough **Cosmic Energy Machines**, this innovation uses the corrected theory of the pendulum to extract energy from gravitational fields. Energy can be changed into electrical energy and, in turn, used to drive electrical and electromagnetic engines, including anti-gravity space flight systems. The Cosmic Energy Machine has been used by inventor Dr. Liang to create a 188 horsepower auto in 2003 that did not require a fuel source and is non-polluting. The details can be seen in the video AVSEQ01.DAT. "Chinese no fuel car"

Joe Bedini, 2010:



Joe Bedini debuted his new 14 foot high modified Bedini Cole Monopole motor at the 2010 Renaissance Charge Conference in Coeur d'Alene.

Some of his words, "We are actually immersed in gravitational energy. If we know how to use it, we would not violate the Law of Conservation of Energy. The Lee-Tseung patent states that we can "lead out" such energy via oscillation, vibration or rotation with Pulse Force at the suitable time (at resonance).

The same theory can be extended to electron motion energy. Electron motion energy covers magnetic, electric and electromagnetic. It is present so long as there are electrons rotating around nuclei. The field can be many times the gravitational field. The field can be attraction or repulsion. It can also be turned on and off. Many Over Unity Inventors use this particular energy without realizing it."

Is it not amazing that as early as 1867 science had found that it was not necessary to combust gasses to produce steam for a steam turbine or combustion pressure for a gas turbine? Now they knew that such a process could be so simplified by bringing two elements together in the presence of the right catalytic metal and you get a continuous output of electricity. No boiler, no turbine, no condenser; nothing mechanical required to produce rotational power (like an electric motor) thus to produce electricity. Can you imagine the efficiency! **This is the direction that energy research should have gone.**

The Geet Reactor

This book would not be complete without a discussion of this amazing fuel vaporizing device by the inventor Paul Pantone. There are two things about this energy device that make it unique above virtually every other innovative fuel device and these are:

One: the GEET reactor can be built by a reasonable mechanic using parts from the hardware store.

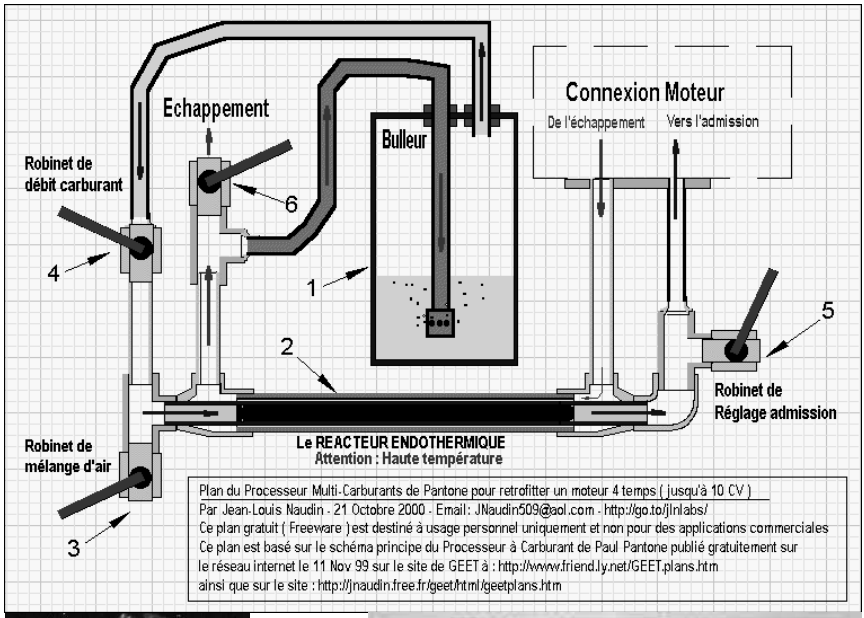
Two: it is adaptable to combustion engines in gasoline powered equipment and automobiles.

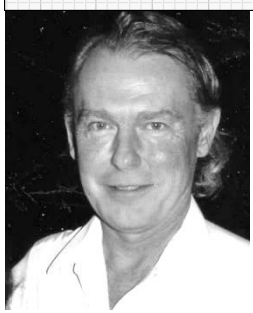
The GEET Reactor is a simple device for any internal combustion engine and it packs the potential to dramatically increase fuel efficiency, but its main advantage is its ability to run an existing engine on junk fuels. Try to find a more simple design for running existing engines without gasoline!

You can obtain detailed drawings and instructions from Paul Pantone for a small fee, with the understanding that you will only build a unit for yourself, and to not copy and give away these drawings. Since I am not planning publication of this book for profit of any kind, I am including them as a way to help preserve Pantone's brilliant fuel vaporizer design.

The Geet Reactor has been developed for an 85 Kw generator package. I am currently experimenting with the device. The inventor, Paul Pantone, stated to me during a telephone call that the reactor magnetic-rod taps into Tesla energy via a simple, but crucial, knowledge of magnetism and how it can interact with earth's own magnetic field. He stated that it amplifies the chemical processes of water and hydrocarbon dissolution.

I advise you to check this device out if you are looking for a buildable free-energy device that can power a generator.





Inventor Paul Pantone, survived 18 months in a mental hospital because he could get his engines to run on just about any liquid. Note the three different lengthed rods that go inside the tube inside the outer exhaust tube. They are rounded at one end and dimpled in on the other. You have to make sure that you get the rod's natural magnetic pole N at the rounded end or it won't work.

CHAPTER 22

Transportation Mechanisms Of The Modern World

WHAT KIND OF transportation system would we have today if our engineers and designers had proceeded ahead with the best ideas and inventions? Remember, the United States and the rest of the industrialized world took a quantum leap in mechanized power systems over 120 years ago with the harnessing of the Niagara Falls in 1896. This was the beginning of reliable electric power. But even as early as 1834 Thomas Davenport had invented a battery-powered electric car. And by 1879 Werner von Siemens of Germany had designed and put into service the first electric powered train in Berlin.

What kind of innovation have we had since 1821 when Michael Faraday first demonstrated electricity while today Big Oily still promotes the same high-friction piston engine designed in 1886? What kind of innovation have we had since the discovery of medicinal alcohol in 100 AD while our choice of fuel for our vehicles is poisonous to all plants and animals?

The Von Siemens' train of 1887 was powered by a 2.2 Kw series-wound motor that drew 500 Volts of direct current. Its electricity was provided from a power plant that utilized a steam turbine which ran off of coal and powered a generator. Take a moment to ponder the significance of this invention.

The Von Siemens' train ran off of cheap coal, that was burned out of town and away from the people downtown. The engine received all of its energy from the electrical plant by the use of overhead wires. And since the wires provided power at any point along their path, the train itself did not have to carry its own fuel.

Unfortunately this groundbreaking human invention was dropped from the developing transportation entrepreneurs and replaced with separately powered mechanisms that had to all carry their own fuel.

Of course, a public transportation system is much safer if it does not have to carry fuel onboard with the passengers. Unfortunately, the public were placated with high-horsepower vehicles, cheap gasoline and plenty of open roads. Meanwhile Big Oily was designing a system for us that would best suit their marketing desires.

With Americans Hardly Noticing

With Americans hardly noticing, electric powered trains developed in the 20's and 30's were bought out by the Big Oily/Big Auto companies who shut them down during the 40's, 50's and 60's. This was a tragedy for both the public and the nation, since we had endeavored to build an efficient and lasting transportation system, and yet it was dismantled way ahead of its time. This resulted in valuable assets being wasted for the sake of converting trains to cars, busses and trucks; all of which were fueled by petroleum, of course. And it was done to establish petroleum-dependent designs that would consume mega volumes of fuel later.

Today these facts reveal the extent to which the public was denied access to superior engineering, metallurgy, chemistry and bio-physic discoveries made during 15 decades of research. The fact is, if we had been allowed to build upon the systems we had rather than tear them all down and replace them with petroleum driven mechanisms, we would have a transportation system today that is safer, friendlier and a lot less costly to use.

Combustion piston engines possess one mechanical idiosyncrasy that is reason enough to have abandoned this reciprocating mechanism. That idiosyncrasy is the fact a combustion piston engine must be kept running even when at a stop. Correction! Since 2018 most vehicles are being equipped with a stop start mechanism. So we can finally get exited about the auto industry! Or can we?

The stop start is at best a paradoxical device as it is electric powered requiring a larger alternator and battery. It is this electrical addition to the hybrid which makes the piston engine design more efficient, right? Perhaps they should just go all electric then, right?

It is time to wake up! We have both government and industry getting in line to go green and this mean go electric. Right? No! They're not going to give the public an electrified system that doesn't require carrying fuel and having a separate engine. They're all going to the battery concept. Has everyone forgot that we had electric transportation beforehand and that it did not require batteries?

While we're on the subject of forgetting, let's take a look at some of the propulsion designs that have been forgotten. Here's an interesting list take from the Museum of Retro Technology, http://www.douglas-self.com/MUSEUM/museum.htm.

Oh, you've never heard of them? I went to engineering school at a Big Oily funded college. I never heard of them either!

A. Unusual Working Fluid Engines

Aero-Steam Engines
Caustic Soda Power
Ammonia Motors
Boiling Petrol Power
Alcohol Motors
Carbonic Acid Engines
Carbon Disulphide Engines
Ether & Chloroform Engines
Boiling Mercury Power
Boiling Potassium Power
Liquid Air Power

Helium Engines

B. Unusual Internal Combustion Engines

Compound IC Engines
Toroidal Internal Combustion Engines
Pursuing-piston IC engines
Rotary Piston IC Engines
Axial IC Engines
Scotch Crank Engines
Cam-based IC Engines
Rotating-block IC Engines
Rotary Valve IC Engines
Hydrogen Fueled IC Engines
Solid Fuel IC Engines
The Korwin & Rebikoff Three-Cycle Engine

Do you think it's just possible that we should be considering some of these other forms of propulsion rather than have the entire industry go "whole hog" on the same darned design?

What Have We Gained From Added Technology?

In the meantime here we are, every vehicle manufactured has been revolutionized by electric-driven digital control mechanisms and now every vehicle manufacturer is stuck on reciprocating engines or batteries. This is as if we have never seen lightening, nor an induction coil, nor a toy train with two electrified rails, nor overhead electric cables, nor cable cars, etc. etc.

We think we're smart because we have college degrees from accredited colleges and universities, never mind the fact that they are funded by Big Oily. And now we've allowed ourselves to be lured by the purr of multipiston engines. Our televised media has helped program us into believing we'll even find love and happiness in the purchase of flashy vehicles.

What we've gotten are larger and larger piston engines that serenade us in sound then rob us blind in fuel costs. They provide power we don't need, then succumb to extreme poor mileage when we hit traffic and half to inch along. .

And I'm sorry to mention that this is not only a monetary loss but a physical one as well during those times we sit in traffic breathing air from a thousand toxic tailpipes. That's because gasoline is one of the most toxic things we burn. You can't throw it away in a landfill, for example. Yet, few seem to wonder if we might be getting dumbed down by toxic car exhaust and carbon monoxide.

The Latest Techno Revolution

In order to fight the system some have gone out and invested in the Tesla battery-power concept. Unfortunately the system forgets to factor in the cost when a battery fails at around 100,000 miles or 10 years. Then, the cost to replace it will be $30,000.00.

Now if you drove a regular combustion car that got 20 mpg and you drove it 100,000 miles paying $4.00/gal for gasoline it would only cost you $20,000.00 in fuel.

So as usual the industry is not really coming up with a better or more efficient system, and unfortunately it gets worse. There is currently no technology that yet exists to recycle these giant lithium ion batteries. The presence of hundreds of thousands of them in the next decade is projected to create a landfill crisis in every country on the planet.

Today we have to look at the facts, and these facts show that overall fuel mileage in our cars and trucks has remained virtually the same for the past 120 years. Meanwhile the media carries on as though high technology is here by taunting us with 800 horsepower light-duty pickup trucks, and nobody has time to notice the new designs are even more expensive and don't have as good of a range!

In 2023 the glaring truth is, and still is, we have but one choice for power; toxic petroleum. This is an outrage. Here we are in the "modern" age burning a fuel in the downtown that produces the

lethal gas carbon monoxide in addition to more than 34 toxic compounds. Gasoline is unsuitable as a fuel, especially in confined areas like cities. The only reason we're using it is because Big Oily wants us to.

The Supply-Demand Secret

Our own lack of attention to the machinations of the oil industry allows consumer fraud making the situation even worse. For example, lets just take the cost of the product itself. Big Oily doesn't want you to know about their actual production costs because they typically operate on long term contracts. Thus there should be no market fluctuations. There's no reason gasoline prices should have gone from $2.00/gal to $4.00/gal in just six months after the Biden administration took over.

Here's the deal. Big Oily's typical 25 year contract for crude oil with Saudi Arabia, for example, pays $2.00 per barrel supplied. That's less than .05 per gallon! So why is it sold at $4.00/gal?

This is actually higher than a gallon of milk, and to produce it requires land, cows, grass, feed, machinery and workers. But somehow by the time .05/gal oil is refined and piped to tank farms and gasoline stations it is priced at $4.00/gal. This represents a 7900% increase. Can't Big Oily be more efficient than 79 times original cost?

Such price vs cost disparages are obviously not caused simply by "supply-demand" fluctuations. They are caused by greed which demonstrates that in the 21st Century the petroleum industry is heartless.

But it gets worse. Not only do our cars consume toxic petroleum but our land must consume toxic petroleum as well. This comes in the form of exhaust, tire wear, brake pad wear and asphalt evaporation.

Consider that the amount of asphalt laid down on our land since 1952 now totals 1,320 million tons on 2.7 million miles of paved

highways. And this was all accomplished using toxic petroleum byproducts such as heavy residual tar and other chemicals like PCBs. The asphalt industry was in actuality a petroleum windfall program set up during the 1950's.

It was at this time that our transportation "gurus" got the notion to switch much of our nation's freight from coal powered trains to diesel powered trucks. It came about around the same time that Big Oily in the United States was prohibited from dumping unused asphalt tar into the ocean. Unable to dispose of it anywhere other than a toxic waste landfill, they unloaded it onto our roadways.

The "great highway project", along with the transfer of freight from trains to trucks, was in reality a great gain for Big Oily. The problem was, however, it put our heavy freight vehicles in the midst and alongside John Q. Public. This puts professional truck drivers into the same system as the amateur public. So we have professional Class 3 drivers alongside anyone above the age of 16 who got a driver's license.

But you can't expect to run a system to professional standards when you incorporate non-professionals into it! And the fact is the system we have today is not the one that either set of drivers would have designed.

And now the destiny of our country's future lies in our ability to clean up our polluted environment and this means figuring out what to do with our blacktop highway investment. We can either watch it all decompose into toxic chunks of gravel or watch our nation become bankrupt paying Big Oily for endless blacktop recoats. This is a serious costly mess.

What Has Come To Pass?

How did it come to pass that our supposed technically-advanced transportation system would require all the juice Big Oily could deliver, now totaling 119 million barrels per day, or 5,000,000,000 gallons per day? Yes, you read that correctly. The

world consumes 5 billion gallons a day. What if there's a better form of energy? Hint: earth is a giant battery.

How did it come to pass that our government would harbor bought-off senators and congressmen who would allow a corporatized auto/oil conglomerate to operate a monopoly in disguise? How did it come to pass that we ended up with such an accident-prone system? And why are these same companies still allowed to reap enormous profits, even though they always come at the expense of our water, air and lands?

Today is the day to get real and realize we've been sold on petroleum and petroleum companies, which have to this day monopolized the world's energy sources. Today is the day you know petroleum gasoline was the worst possible choice of a fuel from the beginning. Now you're thinking of ways to stop using it.

It's come to pass that the highway system we have constructed has a built-in renewal clause for the oil companies. The current plan is for us to bare repeated expenditures for the money-gobbling resurface projects we've unwittingly signed on with.

In order to support this, Big Oily subcontractors are fracking our lands and ruining the groundwater with the toxic chemicals. It's a losing system. All of our petroleum highways are breaking down under the sun and will thus require infinite re-paving.

How did it come to pass that we as a petroleum-rich nation still import petroleum and as a result operate at a deficit! How did it come to pass that the public would be shackled to a transportation system that holds them hostage to the whims of shortages dreamed up by Big Oily.

And we're still only getting around 20 miles per gallon and only going 300 miles or so between fill-ups.

CHAPTER 23

Epilogue

THE WRITING OF this book began more than ten years ago when my disgust for our existing transportation mechanisms finally got the best of my engineering skills. I started thinking about the feasibility of some kind of "new principle" people could get behind in the way of a grass roots movement that would demand a positive change. And I came to the conclusion that we could make significant progress in this regard by simply refusing to purchase new cars unless they are electrically powered or better.

It's pretty hard to bring about any kind of change when we can't even get people to protest the fact that the entire Pacific Ocean has been under a nuclear attack for over 12 years from the American built and designed Fukushima Nuclear Plant. Today, the Japanese company is requesting to dump hundreds of millions of gallons of radiated water into the ocean, as they have no way to reclaim it or store it long term. But even this isn't garnishing much public outcry. The replacement of a monopolized petroleum powered system is not even ready to get off the ground.

Just what does it take to get people's attention today? A large flat screen TV, that's what. Thus, in order for anything to begin to happen in regard to dumping our existing gasoline-engine-powered smog and transportation system, people will need a darn good reason. Few people can get motivated to fight smog, for example, when they are already worrying about dying from a plague disease,

bombings, shootings, flooding, wars, immigration, tax laws, health care expenses and bankruptcy, can they?

Now that you know what has actually happened to our transportation system overall, and the environmental degradation we must endure in the future, are you really ready to do something about it? Then how could we get some kind of movement started to get rid of these smog producing money robbing piston-powered vehicles? How about a public referendum? Here's it is. It just needs the proper timing or event to set it in motion.

Public Referendum For The Repeal Of The Petroleum Piston Engine

WE THE SPIRITUALLY UNITED PEOPLE OF EARTH, in order to avert and arrest the continued destruction of the planet, its peoples and animals, call for a referendum on the continued use of petroleum powered engines.

Because of the environmental disasters we have created it has become obvious that a change from the world-wide use of toxic petroleum to an environmentally harmonious fuel, like methanol alcohol, is needed. Furthermore, its use has led to the corruption of our national defense system, being vitally dependent on petroleum products in order to function, and thus placing the security of our nation at the mercy of an industry which is not controlled by the national defense system itself.

In that this relationship compromises normal human defense instincts, which would be to insure every key ingredient of our national defense is in the hands of our national defense itself, and it being recognized that every time our country engages in any peacekeeping or defense military operation, virtually every piece of military equipment employed will require petroleum in order to operate we call for an immediate end to the existence of corporations that produce and sell petroleum.

In that the United States Military is primarily made up of ships, jet fighters, jet bombers, helicopters, fuelers, tanks and trucks that all use petroleum it is a fact that the oil industry benefits in terms of increased sales every time our

military is called into action. This is anything but an incentive for the oil industry to stay out of international politics thus to not foment wars for profit. It is made worse by the fact they are able to supply both sides of the enemy.

The use of war for profit cannot be tolerated. In that the oil industry influences our politicians, and that many of them own stock in oil companies themselves, and that many have been elected with the contributions provided by oil companies, it is imperative that the oil industry be dissolved and shut down. Whereas, if the oil industry cannot be shut down, then the only possible solution is a total dissolution of the existing Congressional members, as they have demonstrated that they are beholden only to oil industry practices and standards.

We call for an end to the use of petroleum accept in instances where it has been produced by the United States Military and the price controlled by the Department of Health, Education and Welfare. We call for an immediate end to the existence of corporations that control transportation commodities such as fuel that dramatically impact our country's economy and the people's welfare. In so structuring our transportation in this manner, we seek to end the practice of wars being fought in the name of profit for oil sales.

In addition, the following points about our existing transportation system and vehicles need to be addressed:

1). After over 100 years of manufacture, the current standard transportation vehicle should be less complicated not more complicated.

2). Every car design should be standardized such that every mechanic and car owner can and will have the best repair and maintenance knowledge for virtually every mechanical problem.

3). All spare parts should be universally available thus eliminating ordering and freight charges.

4). Vehicle mechanics should be equipped with knowledge for diagnosing, repairing and extending the life of all transportation vehicles.

5). There should only be one set of standardized tools required to conduct repairs.

6). Electrical parts such as light bulbs, sensors, fuses, gauges, spark plugs, etc. should be universal and made to the highest quality standards.

7). Car bodies should last for a minimum of five decades of use. Quality new and rebuilt motors, and major parts, should be available at a reasonable price.

8). The purchase of a new car every five to ten years should not be necessary.

Furthermore, we call for an end to these environmentally irresponsible methods of transporting the citizens of the United States and call for the implementation of the actions necessary to accomplish the following goals in the least amount of time:

1). The provision and maintenance of a healthier environment for our children that is free of highway-related toxins which are known to degrade and reduce our lifespans.

2). A reduction of media, government and corporate influencing of citizens through the vigorous promotion of petroleum products, when numerous and superior forms of energy, fuel sources and engine designs are available,

3). The promotion of a safer and up-to-date method of transportation for our citizens (such as electro-motive non-polluting power sources which do not waste fuel while at a stop),

4). The acquisition of freedom from health risks due to lengthy commutes to and from work during which time we breathe harmful exhaust vapors,

5). A reduction of the necessary family wage earnings going toward the purchase and maintenance of costly vehicles that are nearly impossible to repair or when involved in a collision, and, are so cheaply made fail to provide protection for the human body at any speed over 40 mph,

6). Relief from routine exorbitant fuel costs to motor fuel suppliers who have done nothing to extend vehicle range on one full tank of fuel for the past 50 years, and

7). Reduction of all transportation-related costs, such as high rates of depreciation, costly insurance, excessive taxes and short vehicle lifespan (requiring vehicle replacement after just a few years of operation).

Citizens for the Repeal of the Petroleum Piston Engine are peacemakers, not advocates for rapid or traumatic change. We do not wish to put any working person out of a job nor bring economic hardship to any family. We are spiritual thinking citizens who want our sons and daughters to be born into a less hectic and financially draining system of getting from home to school and work.

It has become painfully obvious that a change from toxic petroleum is not only needed but way over-do. And this is not just because of the environmental disaster we have created.

As of today we steadfastly refuse to buy into the petroleum powered system any longer. We call for a ten year elimination of petroleum piston powered automobiles and trucks. Furthermore, we are in support of the methods and proposals outlined in this paper to get this accomplished as quickly as possible and with as few economic hurdles as possible.

Certified as having been created in good faith and for the positive future of planet Earth,

Kenneth M. Price, Jr.

The Establishment Of A Planetary Gardner

Something else is missing on this beautiful planet earth. Recall that every city has a manager, every state has a department of agriculture, every nation has departments of agriculture, human welfare, etc. It should be obvious that our planet has an agriculture manager as well. Doesn't it make sense that every planet needs somebody who will skillfully watch over the crucial agricultural processes such to aid and manage proper soil irrigation and maintenance, air composition (CO2, CO, O2,

Nitrogen, etc.), salinity of the oceans, amount of open space for forests, amount of space for animal habitats, etc.

After a few hundred years it can safely be said that corporations are not doing this. They should be stepped down as stewards over something so vital as our earth's eco systems as they have only demonstrated the inability to act in a manner which befits the beauty and natural wonders of the planet.

What To Begin Doing Now

In the meantime, there are actions that we can take that will have a positive effect on our planet's future and our personal, and we offer the following recommendations: **Consider not buying that new car you might have had your sights on. Buy a used car.**

Eventually, we might start to run short of used cars for everybody to buy one, but that could take years and the panic will be worse on the auto makers than the auto buyers. Meantime, you will save on taxes, insurance, depreciation and exorbitant car payments, so it's not costing you, but in fact saving you a ton of money.

Keep on the lookout for a friend or neighbor who likes to trade up to a new one often so as to get one with fewer miles. Don't be picky, just be wise and enjoy the huge savings.

Consider not buying a hybrid car. They are a poor example of what is possible with today's technology, being overpriced and still sporting a full size engine. They are a little better than standard cars, but if we buy them we endorse them.

Electric cars were being used successfully as early as 1896. Today's hybrid design is overly complex and costly, while fuel economy is not that much better. This is outrageous!

By not purchasing a new or hybrid car we will gradually

be sending a message to the automakers that their products are massively overpriced and there is no reasonable alternative to current piston-powered vehicles.

Consider reducing your commute. I know this is a tough one for many people who live many miles from their jobs because the only way to find affordable housing is to locate into the suburbs. You have two choices, move closer to your job or quit your job and find one closer to your home. I recommend trying to find a new job closer to your home. If you subtract out the cost of gasoline, insurance, depreciation and maintenance for a new vehicle you might find that a lower paying job will easily fulfill your monetary needs. I found this to be the case myself. The added benefit is the amount of extra time you can spend at home with your family.

Consider not buying newspapers or magazines. These supposedly informative publications have done little to nothing to expose the truths behind the money-gobbling oil/auto industry. It's time we dumped them. The amount of time you will save in reading the plethora of worthless trivia and commentary will only result in an enriched life. The amount of advertising contained within these related to the oil/auto industry is staggering. None of them have the courage nor motivation to expose the very hand that feeds them.

Consider not subscribing to television cable services. These stations give us little informative news. They do provide programs that degrade our culture, commercials that encourage petroleum use and movies that glorify the auto and oil industries. Flipping channels only exposes us to more commercials and raunchy programing.

Use the internet for information. Consider a small handheld radio tuned to the local radio station for sports or a marine channel radio if the weather is your most important

concern.

Consider not supporting Hollywood movies. Occasionally we get a movie that exposes some needed truths, but for the most part we get non-realistic, overly violent, horribly immoral, nightmarish grossness, and further glorification of fast cars with disregard for the law and disrespect of elderly citizens. Hollywood has done nothing to help expose the hypocrisy of our energy dilemma and seems bent on destroying years of proper parental guidance of millions of our nation's children. Let Hollywood flounder in its own arrogance and disregard for our precious kids.

Consider not purchasing furniture, building materials, clothing, food containers and miscellaneous things made of plastic unless absolutely necessary.

Consider selling whatever stock you may currently own in oil and auto industries.

Consider building an electric (or other) car on your own.

Reject Self-drive cars! This will only give them a reason to continue the existing unsafe transportation system as if it has been made safe. In addition, it will give them a reason to continue the use of petroleum powered piston engines beneath the guise of self-drive technology.

Eventually the petroleum energy scam will be exposed and our transportation system will be completely redesigned. Don't be tempted to covet it, lest you be tempted by a new flashy car. Hesitate on your new purchase. Stay free of the illusion. Think about saving oodles on basic transportation. Think about how good it feels better to have some money available verses having to be working to pay off debt.

This seems like a reasonable place to end this book, so I thank you for reading it. Many things I have stated may be too much to comprehend right now, but don't despair. Give it some time while you further observe the current situation that we face. In the meantime you can begin exploring all of the different ways to increase fuel mileage or simplify your commute/travel situation. There is no hurry to act in a major way, as time is on our side.

A first step begins as easily as airing your tires up to maximum pressure. The second is to begin putting 3 oz. per 10 gallons of pure acetone in your gas tank with each fillup. Just go to the next page and jump onboard!

Thank you for reading this book. I hope you will read the next one: Titanic and Hindenburg; Two Tragedies, One Plan.

I wish you a long life and much success.

Petty Deception: Acetone As A Fuel Additive

I'm inserting this information as it is the simplest and most effective way to begin putting a dent in your gasoline purchases. It stems from another oil-industry secret that you can use to improve their gas mileage. Simply add **pure acetone** to your car's gas tank in the amount of 3 oz. for every 10 gallons of fuel and you will get up to 20% better fuel mileage!

The amount of research that has been done by the oil industry, the military and the auto-racers associations on fuel blends during the past 100 years for the purpose of getting more horsepower out of piston engines is near-endless. Adding acetone to gasoline was found to enhance fuel vaporization as far back as the 1950's and is just one of thousands of ways to improve fuel and fuel mileage. Acetone is just one example, but best of all, it is one that we can get our hands on.

This is not some joke. I have been methodically adding 4.5 ounces to 15 gallons of regular gasoline in the same Ford Explorer vehicle for over six years with every tank of gasoline I have purchased.

The addition of pure acetone has a dramatic effect on the fuel-vaporization of gasoline molecules. It has the effect of breaking them into a much finer mist approaching vapor. Just by adding .2-.3% pure acetone into your gasoline you can travel 75 extra miles on each tank of gasoline and it is simple technology that every human can do. I have driven over 80,000 miles using pure acetone and saved an estimated $4,000 dollars in fuel costs.

The only thing holding us back from gaining this improvement is the fact that it's been kept a secret. Why would the oil/auto conglomerate keep it a secret when our nation is going broke from buying oil overseas? Because the engines on the road today

have been designed for a specific purpose, thus they don't want them performing any better than what they were designed for. Remember, it's a giant petroleum drain-field composed of 100 million vehicles getting 15 miles per gallon, and it has to be kept flowing in order to maintain the continuous process of crude extraction.

If we all began mixing our fuel with acetone causing gasoline fuel consumption to drop 20% in the United States, the oil industry would be bulging at the seams within months. They definitely don't want us to use acetone.

The public's use of acetone is made complicated by a tricky industrial maneuver: all industrial acetone sold in stores contains additives that have been put there purposefully to negate the vaporization enhancements of pure acetone when added to gasoline. You are reading this correctly; just like lead in gasoline, the public has already been headed off at the pass.

But Hark! If you use **"pure" acetone** the mixture will work. Pure acetone is available through a beauty supply store or the internet. **Sally's Beauty Supply** has nail polish remover in one gallon containers for $24.00. This is pure acetone and is the acetone you want to use. One gallon will treat 384 gallons at a 20% savings would be 77 gallons or $300.00.

Is it worth it to you to see an increase in gasoline mileage as much as 25%? If you answered no then you have become programmed by the oil industry to accept their system. Consider that if you're not willing to acquire some acetone and add it to your tank, there's hardly an ounce of resistance to the oil industry in you. Wake up! Act!

How To Begin Using Acetone In Your Gasoline

First, test your car's gasoline mileage by topping it off before you drive 100 miles or more for a test. Top it off again, divide the miles traveled by the amount of fuel consumed and make an accurate calculation of your current miles-per-gallon. If you don't do this first, no matter what you tell people afterwards, you won't have a leg to stand on. The only way to get an accurate starting gas mileage base line is by filling up 1st and topping off again 2nd.

Then get some pure acetone from a beauty supply store. Add 3 ounces per 10 gallons of gasoline. Estimate as good as you can how many gallons it will take to fill your tank, then add the necessary acetone into the tank and put your fuel in on top.

You will not see much of a difference until the second tank of acetone/gasoline. It also helps to pre-mix the acetone in a one liter container of gasoline shaken up with the acetone in it before pouring into your car's tank. This is the way I do it.

Then try to tell me it doesn't work. I find it more than amusing when know-it-alls tell me it won't work: they're programmed to defend the oil industry and don't know it.

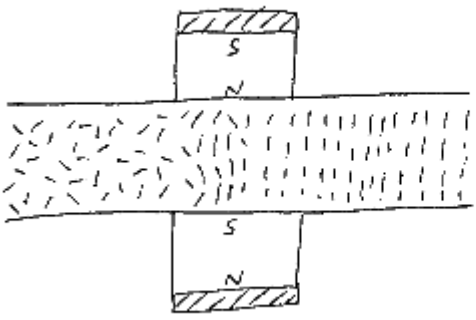
A Word About Fuel Magnets

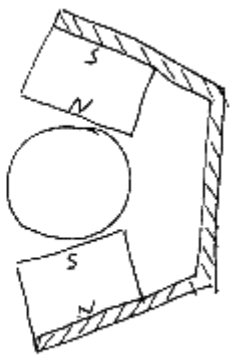
A fuel magnet is a device that is strapped to the fuel line in your vehicle (or each injector line on a diesel engine) and makes the fuel more receptive to oxygen, thus producing a leaner more efficient combustion with less exhaust waste. This is another simple thing you can do to help your gasoline or diesel powered car get 5 to 15% better fuel mileage.

The magnetic forces applied by a strong magnetic field re-orientates the fuel molecules into a polarized state. This tiny molecular charge makes the molecules rotate into alignment with the applied field, and they then hold that position for a short time due to the matching alignment of their neighboring molecules. This alignment is disrupted by turbulence in the liquid causing the molecules to return to their formerly dis-organized state. Therefore you need to place the magnets as close to the fuel injectors, or carburetor, as possible.

In the case of water, the alignment traps minerals and contaminants thus helping to prevent furring and scaling of water pipes. For fuel it helps hydrocarbon molecules combust more completely. Research reveals that a strong magnetic field causes a lowering of fuel viscosity, resulting in finer droplet size in the combustion chamber.

You can purchase fuel magnet kits or purchase super magnets and attach them with cable ties on either side of your fuel line. They all perform in fundamentally the same way.





Above Drawing: This is the most common arrangement for applying a strong field in commercial fuel magnets. Each magnet can

either have its own steel plate at the back, or a common piece of folded steel can be used to create a closed magnetic loop. The right hand image shows a steel field concentrator that has been angled to allow a bit of tolerance for placing the assembly as close to the pipe as possible whilst allowing slight variation in pipe diameter.

Magnetic power can be increased even further by stacking magnets or seeking out the more powerful types. Be careful with very powerful magnets, since they can attract together with such force that the ceramic magnets can shatter or they can trap your fingers and nip the skin. Large Neodymium magnets can break fingers.

The combination of fuel magnets and the addition of acetone in the fuel will improve the fuel efficiency of virtually every gasoline-powered car or truck by 25%. It's an easy place to start.

A Word About "Routine" Oil Changes

Will it come as any surprise that the recommendations given us by our friendly oil/car companies regarding oil change frequencies are as bogus as is the gasoline engine itself? The fact is, unless you are operating in a dusty environment, you can easily run your engine oil three times as long as specified by the manufacturers. This is another blatant example of an industry that wants us to waste oil rather than conserve it.

If you are operating in a dusty environment, get a serious industrial air filter and plan on replacing it every couple of months. Instead of changing your oil out at the scheduled drain, take a 4 ounce sample of it and send it to Analysts, Inc. in your area. For about $15 dollars they will run a spectrographic analysis that will tell you if you have a lot of dirt or excessive iron wear. Then you can decide if you need to change oil or not. Chances are you will not.

Cheap laboratory services for petroleum testing are readily available. It is indeed strange that such a concept is never recommended by the auto industry. We could all just take a sample instead of dumping six quarts of good oil. Truckers do it for 40 quarts of oil, why can't we do it for 6 quarts of oil? It seems like this would be a great way to help put those wicked Arabs in their place. Just joking of course; the Arabs have nothing to do with it.

The facts are coming in. The oil industry, just like the filter industry, just like the battery industry, just like the vinyl interior industry, just like the epoxy paint industry, just like the rubber tire industry and just like the asphalt industry have all done one thing; increase the use of petroleum. We could and should dump them all.

NEXT:

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Read Book II! Prepare to be shocked and amazed!

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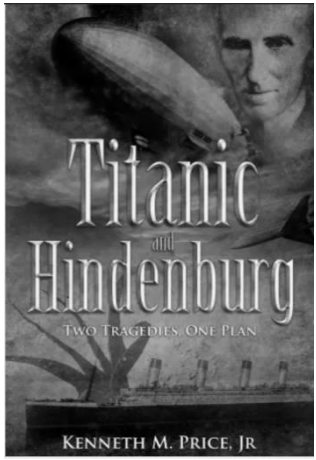
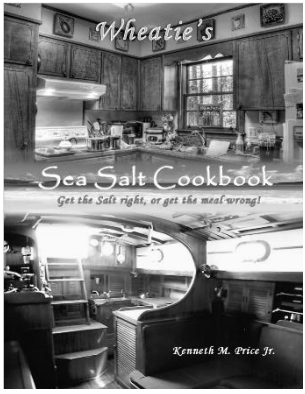


BOOK II by Kenneth M. Price, Jr



Wheatie's Sea Salt Cookbook
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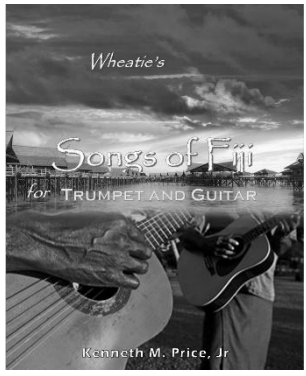
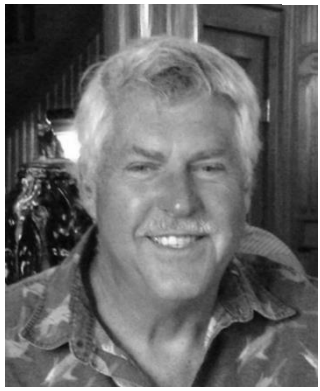


Wheatie's Songs of Fiji
For Trumpet and Guitar



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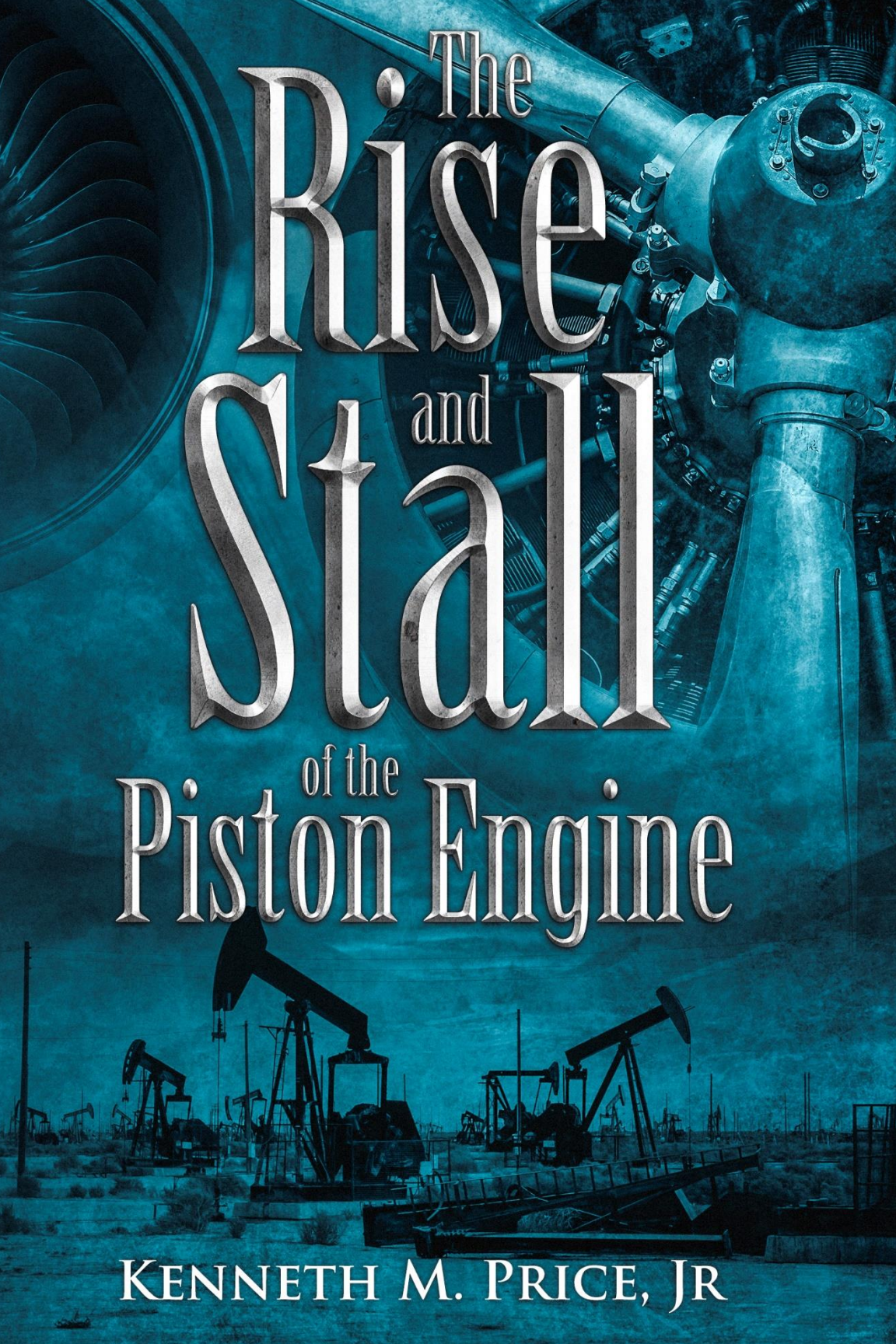
The Rise and Stall of the Piston Engine
Kenneth M. Price, Jr