

Fuel Vaporization

THE SECRET HISTORY OF FUEL VAPORIZATION

who wrote this article?

In the course of studying fuel vaporizers over my adult life, I found it shocking that three separate people in different parts of the country told me about relatives of theirs who had bought a new car that accidentally had experimental high mileage carburetors on them that were subsequently bought back by the car manufacturer, usually for around \$100,000.00 along with the gift of a new car. I currently have the name and address of one of these people who, along with the rest of his family, can tell you all about it. I do not believe in conspiracy theories, however, in this case there is clearly a cover-up going on. I call it "The Vaporization Cover-up". What happens to these inventors and their inventions?

What happens when inventors of vaporization devices trust the government?

The Webster-Heise Valve is a fuel vaporizer shown to work over twenty years of EPA testing. After jumping through EPA hoops and spending all kinds of money the inventors eventually got the backing of the United Corn Growers because a fuel vaporizer can run a car on a multiple of fuels. In this case the United Corn Growers were promoting alcohol fuel and they joined up with the Webster-Heise vaporizer and got all the way to the White House. We have pictures of George Bush Sr. waving out of the window of the car with the vaporizer under the hood and the United Corn Growers logo on the side of the car. However, George Bush is an oil multi-millionaire and the device did not make it to the market. George Bush's lawyer, Boyden Grey, took the car with the vaporizer on it and parked it in his personal garage; never to be seen again. They lost out because they honestly trusted the big government-big business monopoly system and the inventor allowed the government to string him along for seventeen years until their patent ran out.

What happens when an inventor sells out to the monopolies?

In the 1930's Charles Nelson Pogue achieved 205.5 miles per gallon in an 8 cylinder Ford Coupe as documented by Ford Motor Company of Canada, under normal driving conditions. He was bought out and became very rich and was given a job overseeing a large Fram Oil Filter manufacturing facility. Patent number 2,026,798 shows the technology, although he had two former vaporization patents; 642,434 and 1,997,497.

What happens when an inventor refuses to sell out to the monopolies?

In 1978 Thomas Ogle road with two reporters from El Paso to Deming, New Mexico and demonstrated over 100 miles per gallon with his fuel vaporizer in a Ford Galaxie with a 351 V8. The car weighed 4,600 pounds. He stated 100 miles per gallon in his patent. After being offered 25 million then 49 million, by Shell Oil, Mr. Ogle remained determined to not sell out. It is interesting to note that the buyout offers were made while the device was in patent pending status. Instead he sought out private funding with a determination to get the device on the market. The stress of it drove him to drinking and then gambling. He was shot outside of a bar where he had often been seen throwing large sums of money around.

What happens if the inventor does not have enough units manufactured in advance?

For a while the "Flex" system was sold in the United States for \$559.00 with a double your mileage guarantee. This was in 1978. Gas was a lot cheaper then. Even with lower gas prices he had so many orders (and he was delivering) but he was shut down for failing to deliver his product fast enough. The monopolists used the mercenary courts to stop the inventor from selling his product to the public. This device is detailed in patent number 4,178,897 wherein 110 mpg is claimed with a '72 Datsun and 62 mpg is claimed with a '77 Lincoln. Without sufficient investment to insure the release of a large enough number of devices around the country, the invention does not get into the conscious attention of the public. A device should be released very broadly in a "blitzkrieg" or "shotgun" approach, which would make it impossible to "put the cat back in the bag".

Are there a few other devices that have been proven?

The "Ultra-E" fuel system of Salt Lake City showed a 50% plus improvement on over 200 different cars for over 350,000 miles with pollution factor of less than 1% at a time when EPA was trying to get Detroit down to 5%. EPA has a standard of 1,000 parts of noxious gasses per 1 million. Ultra-E registered between 40 and 60 parts according to an independent testing laboratory.

The Godward Fuel vaporizer was used on 580 Philadelphia buses with the ability to handle heavy or light fuels. It reduced fuel costs about 30%. If that is true, you say, where is it now? Read "The Gentleman Conspiracy". A cute little book that tells how the oil companies and their sub-companies bought out all of the trolley systems across the whole of America and replaced them with more expensive and more polluting diesel and gasoline buses. When found guilty in a court of law of this grave monopolistic crime against all of America they were fined a sum total of \$1.00

There are several fuel vaporizers which have been sold yet not patented:

Arthur C. Sgrignoli of Enola Pa. showed an 86% increase in fuel efficiency.

Roy Nichols, DBA Fuel-Mizer of Richardson, Texas, year 1980, 100 mpg on big cars.

Roy Covey of El Paso, Texas, in 1981 showed 65 mpg in a Chrysler w/400 cid V8, he also claimed 144 mpg at one point.

Ron Beasley of Ottumwa, Indiana in 1982 tripled mileage in a 6 cylinder pickup.

Loren & Kelly Naylor of Liberal Kansas in 1980 doubled mileage in a 1966 Olds V8

Allan Wallace of Raymondville, Texas in 1963 conducted much witnessed testing of his 1956, 5600 pound drag racer with a 317 cid V8 with which he still got approximately 30 mpg. This is awfully good mileage for a drag racer.

Elmer Nay distributed the "Nay Box" which claims over 100 mpg.

Doing patent searches I was very impressed by those vaporization patents which contained actual test information, right there in the legal document. I have mentioned some already but more are listed below:

Patent number 4,522,158 includes test documentation on a 6 cylinder Ford. The test is for 1½ hours before and after. The results showed a 60% reduction in the fuel used with a significant reduction in pollutants.

Patent number 4,395,998 includes test documentation using 7 different kinds of vehicles which showed about a 50% increase in mileage.

Patent number 4,345,568 includes test documentation which showed a 97% increase in "mileage", actually a lab environment at idle with 25 cc of gasoline for 121.5 seconds before and 25 cc for 239 seconds afterward.

Patent number 3,886,920 shows test information with a "72 Oldsmobile with a 455 cubic inch displacement (cid) measuring emissions only. Results cut emissions approximately in half.

Patent number 4,083,340 showed test documentation traveling 39,000 miles in a 1970 Ford Galaxy Sedan, fully equipped and a 1972 Buick La Sabre Sedan. Results showed a 72% increase on the open highway and a 44% increase in the city. On a dynamometer test, using a gallon jug for a tank, test showed a 100% increase in fuel economy and an 87% emissions reduction.

Patent number 2,982,528 was issued May 2, 1961 to Robert Shelton who was able to demonstrate up to eight times the mileage of a standard carburetor.

Surprisingly!

there is a total of 240 patents from different people claiming in excess of 100 miles per gallon.

On the other hand, this obviously has not represented too large a number for the monopolies to buy out or suppress the technology. More samples of these patents are listed below:

Ivor Newberry's high mpg carburetor/exhaust system patent 2,218,922. This is another design of carburetor which produces very high mileage results. There are more than 240 similar carburetor designs from different people, all claiming mpg figures in excess of 100 miles per gallon.

Robert Shelton's high mpg carburetor patent 2,982,528. This is another carburetor design from the 240 claiming 100+ mpg figures.

Harold Schwartz's high mpg carburetor patent 3,294,381. This is another carburetor design from the 240 claiming 100+ mpg figures.

Oliver Turner's high mpg carburetor patent 3,653,643. This is another carburetor design from the 240 claiming 100+ mpg figures.

Allen Caggiano's high mpg carburetor patent 5,782,225. This is another carburetor design from the 240 claiming 100+ mpg figures.

What Does The Future Hold ?

Out of 240 high mpg patents if there were even 100 people that made it all the way to the news that would represent only one person per year over the past 100 years for the monopolies to have to buy out, compromise, or otherwise suppress.

Monopolies have blocked free enterprise from delivering the supply for the great demand for good fuel economy, clean emissions, and an end to oil related political tensions. Go figure; they have been doing it for 100 years.

In this country we are told that air/fuel mixtures of 14:1, 16:1, and at the most 18:1 are automotive realities that can never be varied; and of course we are told that high mileage inventions are a myth.

It remains to be seen as to how long these same monopolies can keep Japan's GDI (gasoline direct injection) out of this country. With GDI, Mitsubishi is currently running air/fuel mixtures of 30:1 and 40:1 and even 50:1; this is vapor folk. It is called "Lean Burn" technology. GDI proves that many suppressed vaporization inventions were real all along. Mitsubishi has built this technology into their engine and you have to buy the whole new car (which has been kept out of this country since its release in 1996).

Wouldn't it be great to support an American Invention that would easily strap onto our existing vehicles so that we are not all forced to buy our vehicles from Japan in the future?

Gee, I wonder who has one of these? Dave Parker

Dave Parker offers Some Background Information Regarding Vapor Carburetors that use Heat as a Method of Operation

We have developed working models in the field of heated vapor and accomplished impressive mileage gains, yet we have resolved that the marketplace will only bear up to cool vapor devices due to real and perceived explosion hazards associated with heating gasoline!

Vapor Carbs that use Heat

Air pollution from internal combustion engines is caused by unburned hydrocarbons found in the exhaust. It is avoidable pollution. It is not "exhausted". It is actually fuel that is being wasted. Only gasoline vapor will explode, liquid or droplets end up as pollution.

Using heat or mechanical agitation to more completely vaporize the gasoline before it enters the intake manifold can result in more efficient operation and a reduction in unburned hydrocarbons.

This paper speaks primarily to the use of heat.

A list of over 500 'hidden' US patents using heat and mechanical action to vaporize gasoline is given; also

instructions to access the US Patent Office over the Internet and download patents.

Following is a history of this technology from the turn of the century to the present. Two modern patents that use a process called thermo-catalytic cracking to vaporize the gasoline are described.

A list of all vapor patents in US class 123, subclass 545 is included. The Manual of Classification of the US Patent offices classes all types of devices in categories by using a number. Class 123 is internal combustion engines. A subclass of this class is defined as: "the various subordinate elements designed for and adapted to be used only with internal combustion engines and therefore included in this class are indicated in the definitions hereinafter appearing of the various subclasses."

1 Class 545 is a type of carburetor for an internal combustion engine that vaporizes the gasoline using a heat exchanger. In the words of the Manual: "Class 545 = Heating medium surrounds combustible mixture-subject matter under subclass 543 in which the heating medium completely surrounds a conduit or passage containing the combustible mixture." The reference 'under subclass 543' further clarifies the definition: "the charge forming device or a part thereof for heating the combustible mixture formed by the charge forming means.

2 Most of these patents use the heat from exhaust gases to do this. There exists a system of International Classes that can be used to cross reference US patents to similar patents in other countries. There also exist special patents called 'International Patents' that use this classification system. The International Classification for these patents in US Patent Class 123 [internal combustion engines](#) 545 [heat exchanger/vaporizer carburetors](#) is: F02M 031/00 [Use this syntax when searching the IBM website, otherwise use: F02M 31/00 in USPTO website](#)

There are three other subclasses that also contain many vaporizer patents. The USPTO site can also be searched using the International Classification. This brings up many vapor patents that for technical reasons are 'hidden' in other subclasses. To conduct a search on the USPTO website, follow this procedure:

1. Go to USPTO web page by entering its address: <http://www.uspto.gov> Click 'Search Patents'.
2. Under the category 'US Patent Bibliographic Database', click "Advanced Search".
3. In " Advanced Search" Page, click 'All' under Select Database subheading.
4. There are four US classes in total that contain vapor patents, and the International Class which acts as a cross reference to 'hidden' patents. These are listed in the following table:

A)Patent Classes

🤖Number USP in Class

C)Definitions

D)Enter under 'Query'

A)123/545

🤖569(1997-1900AD)

C)Heating Medium surrounds combustible mixture

D)CCL/123/545

A)123/546

🤖57(1997-1976AD)

C)Combustible Mixture surrounds heating medium

D)CCL/123/546

A)123/547

🤖111(1997-1976AD)

C)Combustible mixture and heating medium adjoin one another

D)CCL/123/547

A)123/543

🤖44(1997-1976AD)

C)Heating of Combustible Mixture

D)CCL/123/543

A)F02M 31/00

☹️578(1997-1976AD)

C)International Patent Classification for gasoline vapor patents & related devices.

D)ICL/F02M-31/00

5. In the "Advanced Search" Page, enter under 'Query' the appropriate command line to search for patents under the Patent Classes.

For example, enter ICL/F02M-31/00 after the flashing I-beam under 'Query' to access International Patent Classification database listed above under Definitions containing Patent Numbers of US Patents herein. Then Click 'Search' to bring these patents up onscreen on the USPTO Webpages.

There is a website on the Internet maintained by IBM corporation that has a file of US Patents going back over twenty years. The user is able to call up an image-copy of the original patent-text and drawings-on this website ,if they type in the patent number. The internet address of this site is:

<http://patent.womplex.ibm.com/>

The images of the patent page on the computer screen can be captured by a screen saver such as Hypersnap and stored on the 'C' drive of the users computer as readable image files in BMP,GIF or JPEG format. To save the patent images and text in readable format, it is advisable to save them as BMP or Windows Bitmap files.

Hypersnap is shareware, and is fully functional. It is designed to work in the Windows95 and NT environment, and can be downloaded from;

<http://www.hyperionics.com/www.snap32.htm>

For users of Windows 3.1 there is wcaptr31.zip, or capture3.zip available as shareware from;

<http://www.rad.kumc.edu/win31/clipbrd.htm>

A Macintosh version of Hypersnap called Screen Catcher exists; there is a link for this on the Hypersnap WebPages. The full address for this is;

<http://www.stclairsw.com/ScreenCatcher/index.html>

The United States Patent Office maintains links to websites of Patent Offices throughout the world. This can be accessed at address;

<http://www.uspto.gov/web/menu/other.html>

On these other web pages, there are links as to yet other sites not given from the USPTO link. The user can also physically examine copies of the Official Gazette or actual US patents in the Patent Office of their respective country.

By international treaty, the USPTO has a reciprocal agreement to exchange patent information with other countries. In Israel, for example, copies of the weekly Official Gazette (which contains a drawing and abstract of newly issued patents) are available from;

- Israeli Patent Office Library

Lev Hagiva, Building 11,
Beit Hadevus Street, 11
POB 34255
Jerusalem 91341
Israel

The British Library maintains holdings of all US Patents from number one issued over two hundred years ago to the present. They can be accessed at;

Foreign Patents Reading Room
Chancery House
Chancery Lane
London,UK WC2
Telephone: 0171-412-7901 or -7902

There exist patents of recent vintage that deal with using heat to vaporize gasoline and intake air for fuel injection systems in internal combustion engines. The Chandler patent of 1995 is one of them, he even goes as far as to cite the patents and early work of the Canadian inventor CN Pogue on gasoline vaporization in the late 1930's!

3 An index of US Patents in class 123, subclass 545- 'internal combustion engine carburetors that use heat to vaporize gasoline' is given from the years 1997 to 1900;

Classification: 123/545

Total: 569

5606956 O 5598826 X 5555855 X 5396866 X 5353772 O 5335639 O 5327875
5327874 O 5291870 O 5247909 X 5146897 X 5134986 X 5123398 X 5101801
5086748 X 5086747 X 5048501 X 5042447 X 5040518 X 5040517 O 5038742
5027759 X 5019120 X 5012788 O 4984555 O 4979483 X 4971018 X 4955351
4883616 X 4883040 X 4865004 X 4862859 O 4829969 X 4768493 X 4718393
4717808 RX 4708100 X 4671245 O 4667643 O 4651702 X 4637365 O 4611567*
4603672 O 4593670 O 4592329 O 4583511 O 4574764 O 4548183 X 4534333
4524746 X 4513720 X 4513698 X 4503833 O 4491552 X 4478198 X 4469077
4467773 X 4465053 X 4463737 X 4452216 X 4438750 X 4434772 X 4425899
4420439 X 4416242 X 4407254 X 4404948 X 4401090 O 4399797 X 4399796
4399794 X 4388910 X 4379770 X 4377148 X 4372275 X 4366798 X 4357926
4351284 O 4338906 O 4327691 X 4318386 X 4302407 X 4300513 O 4286564
4256066 O 4212274 X 4192270 O 4167165* 4151820 X 4147144 O 4142481
4108953 X 4053013 X 4048969 X 4044741 O 4030457 X 4003357 O 3989014
3977366 X 3961616 O 3944634 X 3930476 O 3918423 X 3916859 X 3911881
3895617 O 3892211 X 3859971 X 3841284 O 3832985 O 3828736 X 3797468
3789817 O 3788292 O 3762385 O 3756022 X 3741180 O 3658042 X 3554174
3543736 X 3509860 O 3496919 X 3494342 X 3444848 X 3380442 O 3273550
3150652 X 3139874 X 3114357 X 3091229 X 3032023 O 3019781 O 2991778
2989956 O 2968297 O 2896658 X 2864355 O 2833262 X 2826183 O 2808041
2807245 X 2796855 X 2793633 O 2767699 O 2733698 O 2720197 X 2715520
2710605 O 2698613 O 2673446 O 2634983 X 2627257 X 2597977 O 2582916
2560197 X 2473808 O 2424723 X 2325850 X 2319752 O 2296790 O 2287593
2273957 X 2269930 O 2269706 O 2261493 O 2257047 X 2254775 O 2254634
2252415 O 2251999 O 2250786 O 2234901 X 2232413 O 2216801 X 2213154
2192067 X 2189022 X 2185573 X 2181058 O 2155162 O 2145029 O 2140254
2133775 O 2125216 O 2119885 O 2119179 X 2112568 X 2110806 O 2108639
2104013 X 2103902 X 2100466 O 2099278 X 2092246 O 2090823 X 2082666

2080662 O 2080420 X 2075330 O 2068952 O 2067292 O 2066922 X 2054997
2049596 X 2030508 O 2016881 O 2016695 O 2016694 X 2004093 O 2001669
2001466 O 2000669 X 1999237 X 1998497 X 1997497 X 1985271 O 1975093
1974722 X 1973889 O 1961249 O 1955242 X 1954586 X 1947048 O 1944396
1941487 X 1931781 X 1918380 O 1916952 O 1913684 O 1913497 O 1903433
1897540 O 1891768 O 1889648 X 1889619 X 1881671 O 1881562 O 1881434
1879551 O 1874327 O 1867457 O 1865515 X 1864608 X 1862723 X 1855129
1849135 O 1846008 O 1844298 O 1844041 O 1841740 O 1834202 O 1833552
1833183 O 1829400 X 1828899 O 1825225 O 1824926 O 1822147 O 1821047
1819284 O 1815432 O 1815178 X 1813406 X 1812950 O 1812939 X 1811540
1806581 X 1806045 X 1803461 X 1800426 O 1795037 O 1795036 X 1792828
1792367 O 1790812 O 1788929 O 1786233 X 1783781 O 1778190 O 1777554
1770689 O 1766794 O 1766781 O 1766709 O 1763948 O 1761960 O 1753788
1751511 O 1749035 O 1749029 O 1747361 X 1736003 O 1728421 O 1727605
1722846 O 1714210 X 1713701 O 1712465 O 1709968 X 1706492 O 1696881
1696761 X 1689942 O 1686609 X 1685564 O 1680373 O 1678045 X 1676955
1675870 O 1670550 O 1667886 O 1660609 O 1651393 O 1646779 O 1641619
1637768 O 1635266 O 1634968 X 1633909 O 1627671 X 1626783 O 1626727
1626561 O 1625135 O 1625134 O 1624249 O 1624229 X 1613029 O 1612377
1611299 X 1610541 O 1610000 O 1598289 X 1591071 X 1583584 O 1576301
1575859 X 1572747 X 1562670 X 1557657 X 1555807 X 1547474 X 1541431
1540144 O 1539963 O 1539126 O 1534290 O 1533855 O 1533432 O 1533196
1525956 X 1524680 O 1519516 X 1514189 X 1511820 X 1507315 O 1503900
1503821 O 1503805 X 1496102 X 1487234 O 1486058 O 1477724 O 1476316
1476281 X 1474359 O 1473999 X 1472899 O 1472326 X 1472264 X 1471600
1470659 O 1467759 X 1467225 X 1466647 O 1464759 O 1464466 O 1456572
1453007 X 1449333 X 1448781 O 1448641 O 1447975 O 1447089 X 1445194
1444852 O 1439146 O 1438877 X 1434353 O 1431327 O 1431326 O 1431281
1420684 X 1420616 X 1416977 X 1416352 X 1415086 O 1409093 X 1406598
1404215 X 1403350 X 1400955 X 1400485 O 1392168 X 1386376 X 1386297
1384281 X 1379437 X 1377990 O 1377369 O 1374927 X 1374280 O 1372194
1366831 X 1366018 X 1365564 X 1361503 X 1360098 X 1359168 O 1358686
1355076 X 1354484 O 1348066 O 1345927 X 1345378 X 1342950 O 1342869
1341141 X 1339870 X 1335990 X 1335665 O 1325998 O 1317709 X 1316346
1314872 X 1313639 X 1311417 O 1306496 O 1304987 X 1304205 X 1303559

1299648 X 1289605 X 1285652 X 1284643 X 1283125 X 1283068 X 1278558
1274707 X 1269252 X 1267924 X 1267139 O 1265735 X 1263259 X 1260388
1256738 O 1256186 X 1253682 O 1253681 O 1253642 X 1252796 X 1248417
1247983 X 1245519 O 1244151 O 1242975 X 1238404 X 1237536 O 1233744
1233287 X 1230116 X 1230092 X 1228415 O 1227649 O 1227551 X 1222860
1222548 X 1220281 X 1218867 O 1217781 X 1217448 X 1213817 X 1213736
1211775 X 1207664 X 1205540 X 1201977 O 1201871 X 1201731 X 1199573
1198013 O 1195764 X 1193004 X 1190252 X 1190129 O 1178972 O 1178276
1176816 X 1171435 O 1170337 X 1165656 X 1160438 X 1158494 X 1155599
1154617 X 1145995 X 1143902 X 1143092 X 1140064 X 1137057 O 1136675
1135113 O 1132420 X 1129794 X 1128133 X 1121868 X 1114200 X 1111140
1108916 X 1106881 O 1105592 X 1102478 X 1099842 O 1099271 X 1098915
1080139 X 1079338 X 1078919 O 1072875 X 1061626 X 1056760 X 1049417
1042004 X 1038300 X 1032937 O 1021326 X 1016741 X 1013759 X 1006088
0994658 O 0983307 O 0976237 X 0970429 X 0946780 X 0906671 X 0906111
0896183 X 0869675 X 0868834 O 0862377 O 0800777 X 0796684 X 0765814
0762271 X 0749864 X 0662169 X 0657738 O 0620586 O 0609831 O 0600107
0571495 X 0541773 X 0535914 X 0433806 X 0385121 X 0287578 X 0276075
X 3640256*

A United States Patent runs for 17 years from the date of its publication in the Official Gazette. After that, it expires. It then falls into the 'public domain', this means that the inventor has lost all legal proprietary rights over the invention and it can now be used by all. There is no longer any legal or practical reason why a US inventor should maintain secrecy or keep proprietary information after the US Patent falls into the 'public domain'. Several vaporizer devices using heat to vaporize fuel have been commercially produced in the first half of the twentieth century. Considering the Otto-cycle or four stroke internal combustion engine is mechanically the same since its invention before the turn of this century, could we not conclude that these vaporizer systems are practical and work?

Material discussed in - the Vapipipe - (US Patent 3,957,024) - leads us to this conclusion. We have not been able to find any such examples commercially produced and marketed after 1940.

There are two types of heat-exchanger vaporizers - those that burn heavy oils and those that vaporize gasoline. Heavy oils and kerosene will run an internal combustion or 'gas' engine, if the heavy ends in the fuel can be put into a vapor state - either by heat or mechanical action.

Before the 'gas crises' of the 1970's, kerosene cost from 1/2 to 1/3 the price of an equivalent quantity of gasoline in the USA. This made such vaporizers economically practical, since a farmer or machinery operator would save a considerable amount in fuel costs.

The 1905 Scientific American has an advertisement on page 433 for 'The Meitz And Weiss Kerosene and Gas Engine'. It was "belted or directly coupled to dynamo for electric lighting, charging storage batteries, pumping, and all power purposes - ADOPTED BY US GOVERNMENT; Highest award, direct coupled generator set Paris Exposition 1900; Gold Metal, Pan American Exposition 1901."

4 Gasoline engines were adopted in Great Britain for burning low grade kerosene and oils in generator and agricultural work as early as 1911.

5 Scientific American published further favorable comments on the development of 'distillate gasifiers' in 1913.

6 The Society Of Automotive Engineers was aware of vapor technology in 1913. N.B. Pope, Member of the Society says of this;

"It is evident that at least that a carburetor designed for heavy fuel may be more satisfactorily operated with gasoline than a gasoline carburetor with heavier fuel. To assist in the vaporization of the lower grade fuels, more heat is necessary than for gasoline."

7 The process of using heat to vaporize fuel was accepted by mainstream engineers from the earliest period.

8 A retired mechanical engineer told us that the US Government Bureau Of Standards certified and tested fuel vapor systems submitted for inspection up to the early 1930's. In view of the claim 'ADOPTED BY THE US GOVERNMENT' made in the early Scientific American advertisement, we wondered if such records of tests conducted might still exist in Government archives.

A Freedom Of Information Act(FOIA) request to the National Bureau Of Standards gave the following reply; "records of the tests you are requesting have been disposed of. In the 1958-1960 period, National Bureau Of Standards made a decision to destroy certain test records after holding them for 20 years. This decision was made after Congressional approval was given.

9 A practical vapor carburetor system for use on the internal combustion engine in the Fordson tractor enabling it to use "the whole range of fuel oils, from benzol and gasoline down through kerosene to the very heavy fuels, such as black oil commonly used in Borneo."

10 The device was made by the Holly Carburetor Company, (which today makes carburetors for 'performance' cars or "hot rods") in the year 1925. The editors of Automotive Industries tested a Fordson tractor running the gasoline engine with waste crankcase lubricant! It was said of this;

"runs under actual field conditions were made with the tank filled with waste crankcase lubricant. Even with this unusual fuel, little or no smoke showed at the exhaust end and the engine had the flexibility of gasoline operation& the element time lag has been reduced to a minimum, so that with the improved economy the demand for flexibility and ease of starting has been satisfied."

11 The Holley Vaporizer installed in the Fordson Tractor was so popular with farmers around the world that Bates and Strettell in the Proceedings Of the Institution Of Mechanical Engineers report on its widespread use in Great Britain in 1962!

12 In the intervening period, we found two other references to a multifuel vaporizer that was marketed to the public in the literature. In 1936, the Italian company Fiat developed a vaporizing system for heavy fuels known as the "Naftoil". It was two carburetors in one, starting on gasoline and switching to heavy oils such as kerosene and gas oil when the motor was warm enough to run the vaporizer carburetor.

13 The Italian engineer A.P. Castellini used fuel oil in a gasoline engine by using a high pressure pump which forced the fuel at a pressure of 3600 pounds through very fine jets into the intake passage. The oil is vaporized by mechanical means instead of heat. The engine was said to be readily started when cold, a problem with these systems.

14 This was in 1936, and we could find no more references to the production of such devices in the literature. SISCO's MegaPressure Pump reaches these pressures and will not only work with gasoline, but believe it or not will run a car on WASTE OIL.

Castellini's system will work on the internal combustion engines of today.

Refer to recently granted US Patent # 5,555,853. The possible practical result of further research into this is that so called 'waste oil' that is normally is discarded (recycled = given back to the oil companies) can be used to power a gas engine. This might be important in the case of political crises. The Abstract of the Patent says; "A lightweight back-pack generator set having a spark-ignited engine operating on middle-distillate fuels (e.g.:JP-5 and F-34) has been provided. The generator set includes a back-pack frame; an alternator, and a spark-ignited combustion engine, adapted to operate on middle-distillate fuel. The engine uses a preheater for heating the intake manifold to facilitate start-up operation of the engine."

A conversation with one of the inventors in Canada by telephone revealed some interesting points. He was

familiar with the 1925 Holley Vaporizer and said that his unit would also run on (filtered and strained) crankcase oil or other wastes of this type.

As described in the Abstract, this would make it practical for an infantry unit in a wartime environment, since the group could use almost any petroleum distillate as fuel. He also said it could be used in larger engines, such as an alternator/generator or stationary engines on a farm.

Pollution levels were at or below United States Environmental Protection Agency requirements for conventional gasoline engines. It was easy to start in cold weather-overcoming a major disadvantage of older units.

Vaporizer carburetors for gasoline using exhaust heat have been commercially produced in the past in the United States and elsewhere. In 1923, the Stewart-Warner Corporation sold an exhaust gas operated heat exchanger carburetor vaporizer system commercially in the United States. The system was favorably reported on in the technical literature of the time.

15 It was said;

"Further claims for the direct fuel system are that it eliminates the formation of carbon, as the fully vaporized fuel will burn more nearly completely; that it permits the use of lower jacket water temperatures; that it reduces the tendency to detonate; that it provides better fuel distribution-ensuring smoother performance and that it reduces crankcase dilution and its related troubles - wear and corrosion."

16 In 1924, a vaporizer was produced and sold by a group of Chicago engineers. It used exhaust gas to vaporize the gasoline, and claimed to be self adjusting inasmuch as it enriched the fuel for high speed and heavy pull and leaned it otherwise. "A decrease in the CO (ie: carbon monoxide) content of the exhaust combined with a greater fuel efficiency was noted in the article.

17 A gasoline vaporizer was developed in 1925 in Canton, Ohio. It was said of this device; "that none of the raw gasoline delivered by the carburetor during starting can get into the engine cylinders. The fuel is vaporized not by contact with the relatively small and excessively hot area, which often results in cracking, but by a differential action which removes the lightest constituents first and brings the remainder in contact with surfaces of increased temperature until they are vaporized also."

18 This principle is the same as that given in the writings of inventor R. Covey in his patent 4,611,567 and in literature privately printed and circulated by him.

19 Covey referred to the Voight patent 2,733,698 column 3, lines 40-45. He also referred to the Spindler patent 2,185,573 page1,column 2,lines 20-30 on 'dry' gas. He said that an understanding of these patents is essential to successfully designing an efficient vapor system.

Charles Nelson Pogue of Winnipeg, Canada produced a highly efficient vaporizer carburetor using exhaust gas as a source of heat for tractor and vehicle usage in the late 1930's. CN Pogue was issued US patents 1,750,354 1,997,497 and 2,026,798.

The final design based on his last patent would cut the gasoline consumption of a tractor under conditions of maximum load down to between one half and one third of what it was equipped with a 'stock' carburetor. It obtained 130 miles per Imperial gallon on a subcompact car with an 80 cubic inch engine cruising at 65 mph under ideal climatic conditions-early September-in Winnipeg and surrounding areas. This claim was made by the head of an auto firm in Winnipeg, Canada who has physical possession of part of a Pogue carburetor system.

20 In this article, the reader must be mindful that an Imperial gallon used in Canada in the 1930's equals five US quarts of gasoline. This becomes one hundred miles per US four quart gallon using a little arithmetic. The carburetor was sold to farmers until the beginning of WWII, and then its production and distribution stopped for undetermined reasons.

21 It has been said that the Pogue carburetor was used under conditions of strict military secrecy in the North African desert inside of the Bren Gun Carrier against General Irwin Rommel's Afrika Korps and may have been a reason for his defeat. It was also said to have doubled the effective range of these vehicles under conditions of desert warfare-making them superior to Rommel's technically better equipment.

22 Former US President Ronald Reagen issued an Executive Order declassifying all activities and information recorded or experienced before the end of World War II in 1945; so these adventures are no longer under a

security classification.

Since CN Pogue in the late 1930's, a heat exchanger type vapor system has been commercially produced in the United States or Canada. The large energy and automobile companies have constructed working prototypes and done research on heat exchanger vaporizer carburetors since the oil crises of the 1970's, although these have not been brought to public attention in the mass media.

Douglas R. Hamburg of Ford Motor Company was awarded a patent for an 'Electric Fuel Vaporizer' in 1977.

23 He published SAE paper 760288 on his work with this patent.

24 He claims - as a significant innovation - an electric vaporizer in series with the exhaust operated system for an easy start from vapor. A gasoline vaporizer system described in the August, 1923 SAE Journal makes a similar claim: "special efforts have been made in the design of the carburetor to facilitate starting in cold weather; to this end, for starting, the gasoline is vaporized and superheated electrically."

25 The inventor Ray Covey solved the problem by leaving the conventional carburetor attached to the engine and placing the vaporizer in series with it connected by a heat insulated tube. The engine could be started from the regular carburetor and then switched over to vapor mode once the heat exchanger had reached the proper temperature by use of a two way electric solenoid switch in series with the carburetor fuel line.

This had the added advantage of being able to switch back to the 'stock' carburetor if there was a malfunction in the vapor system. Less complexity means fewer mechanical problems. Engineer Hamburg says; "The basic vaporized gasoline metering system utilizes engine exhaust heat to fully vaporize liquid gasoline entering an exhaust gas heat exchanger."

26 Such technology has been well known to those skilled in the Art for over half a century. The SAE Journal for August, 1923 has an extensive discussion of this concept by one of its members in the article "Exhaust Heated Vaporizer."

27 One of the favorable results from this was; "The use of extended lean limit operation is an intriguing approach to the control of exhaust emissions, and is based on the relation of such emissions to air fuel ratio shown qualitatively in Figure 13.

28 Figure 13 of SAE paper 760288 shows an inverse relationship between the percentage of NO, HC and Carbon Monoxide emissions from the exhaust and an increase in the Air-Fuel Ratio between 12:1 and 22:1.

The heat exchanger 26 in Figure One of Hamburgs' 'Electric Fuel Vaporizer' patent was granted a separate patent #4,161,931 in 1979.

29 Hamburg and Giardini conclude;

"Experimental results have indicated that to the extent to which the air-fuel ratio may be controlled more accurately, the ability to implement techniques for the reduction of atmospheric pollutants generated by a combustion engine may also be increased.

30 If the more complete combustion of gasoline made possible by heat exchanger technology makes workable lower polluting emissions because these elements in gasoline are now vaporized and used to power the engine, why hasn't the public learned of this new technology?

31 Would its use make a catalytic converter last the life of the engine? There are many other patents issued to energy and automotive companies.

32 A minor but very important point-the intake manifold must also be heated to prevent the gasoline vapor from condensing. See General Motors Patent 3,892,214. Also see 'Manifold Vaporization And Exhaust Gas Temperatures' in the SAE Journal.

33 Both the United States and British governments hold gasoline vapor patents. US Patent 3,640,256 'System For Preconditioning A Combustible Vapor' was invented by George M. Low in 1970 and is held by the National Aeronautics And Space Administration.

Using a FOIA petition, we found that the project was shelved by a memorandum written by a John Brogan of the

EPA office in Ann Arbor, Michigan citing SAE paper 670485. It is interesting to note in spite of results indicating a drop in pollutants consistent with all the literature cited previously, paper 670485 comes to an ambivalent conclusion.

Could it be poor design of the apparatus - the vapor storage tank is the size of a home hot water heater(9 cubic feet in size) when the one in Covey's successful system was only a fraction of its size?

Why did not the bureaucrat Brogan cite other SAE papers giving successful results that coincided with the lab tests on the NASA device? The British Government holds United States Patent 4,167,165.

34 A look at the illustrations of the device-this patent bears an uncanny physical resemblance to the Bursley-Trask Fuel Adjuster in the March 1926(p.185) Scientific American Digest article 'Doubling The Automotive Mileage Per Gallon' If this older system can double the mileage of an automotive engine, then what can Ian C. Findlay's British patent do? We have found another vaporizer patent granted to Ian C. Findlay assigned to the Shell Oil Corporation!

35 Mr. Findlay is a British subject and so are the other two inventors Rodger Lindsay and John Wilson of the patent assigned to the Shell Oil Corporation. Findlay holds the British Government patent with a George Gallacher, who is also a British subject.

High efficiency may have been achieved by some vapor systems using thermo catalytic cracking, the breakdown of large multiple chain molecules down into singular carbon molecules such as vaporous natural gas and methanol.

These molecules have similar and lower vaporization temperatures than the 'heavy ends' in gasoline. They will burn instantaneously and completely on ignition. The heat exchanger will have to reach a high temperature (400-430F in manifold vacuum) for this reaction to occur. 36 Many exhaust systems on an internal combustion engine may not be able to provide the exhaust heat to do this, since metals like steel have a low thermal conductivity. There is a solution.

Weld a catalytic converter in series between the exhaust manifold of the gasoline engine and the exhaust input to the heat exchanger/vaporizer that is described in the patents cited. The catalytic converter acts as a heat amplifier and its output is at a much higher temperature than its input.

The thermal conductivity of steel is lower than that of copper or brass, but this will compensate. Ray Covey (USP #4611567) used this with his system, as building a heat exchanger of 1/8 or 1/4 inch dia. brass plate is very expensive.

37 To control the exhaust heat temperature to the exhaust input of the vaporizer heat exchanger, put two y-couplings and a pipe in parallel with the catalytic converter. A flapper valve in series with the parallel exhaust gas diverter pipe can be used to precisely control the temperature at the output of the catalytic converter/input to the heat exchanger/vaporizer.

Opening the flapper valve allows the exhaust gas to flow around the catalytic converter, closing the flapper valve forces the exhaust gas to flow through the catalytic converter.

Partial adjustments can also be made. Covey recommended a catalytic converter from a Triumph sports car or VW Rabbit. "Junk" catalytic converters can be used, provided they are not fouled.

Thermo catalytic cracking may be achieved by having nickel present in the steel walls of the heat exchanger vaporizing chamber, either as plating or as an alloy of the steel in a substantial percentage.[preferred](#)

The nickel is a catalyst - it promotes the breakdown reaction but does not change chemically itself. Hastelloy C2-76 Stainless Steel(UNS #N01276) is approximately 60-65 per cent nickel.

Inconel 625 is half nickel(UNS#N06625) and could also be used to build a heat exchanger vaporizer chamber that could exhibit the thermo catalytic effect on gasoline.

38 This concept is completely described in US Patent 5,156,114 issued October 20,1992 to Rudolph W. Gunnerman.

39 Having the thermo catalytic cracking metal element/vaporizer separate and external from the engine/cylinder head itself is to be preferred as a design consideration. An inventor, [Paul Pantone](#) has developed a device that performs similarly to Gunnerman's, but achieves the thermo catalytic cracking effect on an attachment mounted

externally to the engine.

He has had his US patent application recently approved, but a patent number and publication in the Gazette has not been granted yet. (as of 5/29/98) Several US newspapers have described his device.

His invention, which he calls the GEET device, has not been tested by any official or corporate labs, as the Gunnerman device has, although it apparently runs on similar principles.

40 Other patents cited here may or may not run on the principle of thermo catalytic cracking of gasoline, (pyrolysis) or the inventors might have hidden this information in the patent application for legal reasons. The late Ray Covey (US Patent 4611567) observed this process in his device but was unaware of exactly what was happening - more than just vaporization of the fractions of gasoline was occurring.

41 This vaporization using heat is as described in the drawings of most of the patents cited.

In conclusion we have found information that might also be of interest to farmers. In the USA, a farmer can obtain a permit to convert waste vegetable material to alcohol for fuel.

The Mobil Oil Corp. published a paper describing work on the conversion of ethyl alcohol to gasoline.

42 This was followed by George Tsao of Purdue University. We contacted Mr. Tsao as we experimented with this process in 1994-96 in a company which converted farm byproducts to alcohol.

43 Could the farmer use this to co operatively make his/her own gasoline for farm equipment from wastes normally discarded? Has further work been done on this?

The Ray Covey Patent 4611567* has been highlighted and underlined, and marked with an asterisk to bring it to the reader's attention. So have US (3,640,256*) & British Government (4,157,165*) held patents.

Footnotes:

[1] US Patent Office Internet version of Manuel Of Classification:

<http://app1.uspto.gov/cgi-bin/ifttech4?index+CLASS+1+17392+257+0+> 19+OF+39+78+1+123%2f545

[2] Ibid.

[3] US Patent 5,394,838 'Vaporized Fuel Injection System'. Also see: US Patent 5,056,495 (Texas Instruments)

[4] Scientific American Volume XCII, Number 21 May 27,1905 pp.433

[5] Engineering (Great Britain),February 17,1911. 'The Davis Paraffin Carburettor', page 216

[6] Scientific American August 2,1913 Article: 'Distillate Gasifiers For Motor Vehicles' page 95.

[7] SAE Transactions,1913 Part I, Volume VIII, pages 118-119. Article: "Low Grade Motor Fuel For Trucks"

[8] SAE Transactions, 1911 'Carburetor Division Report',1911 page 648. [Here the SAE sets construction standards for vaporizer carburetors!](#) Article:'Kerosene Carburetors', AC Bennett. [discussion and extensive bibliography. An early system, the 'Wilcox Bennet Vaporizer' illustrated. Source: University of Rochester Libraries. Dewey Decimal Classification: TL2 S678t v.6 Also, see Scientific American June 3,1916 page 584 Article: 'Plain Facts About Kerosene Carburetors', Victor W Page M.S.A.E.

[9] Karl E. Bell, Deputy Director Of Administration, F.O.I.A. Officer, FOIA request, 9/15/83

[10] Automotive Industries.,April 16,1925. page 698-699. Article: 'New Holly Vaporizer Permits Use of Any Grade Of Fuel'

[11] Automotive Industries Ibid., page 698

[12] Proc.Instn. Mech. Engrs.(A.D.) (Great Britain) No.4,1961-62 pages 146-157.cite: pp 147 'The Influence Of Tractor Service Conditions On The Quality Of Fuels, Lubricants, and Protective Materials', E.S.Bates; R.P. Strettell

[13] Automotive Industries. January 17,1924, pp.141. "Vaporizing System For Heavy Fuels Designed By Fiat"

[14] Motor., January 1936, page 62 Article: 'High -Pressure carburetor Uses Fuel Oil'

[15] Automotive Industries, June 30,1923 pp. 1004-1006 'Atomization Takes Place In Tank In New Fuel System', A.F. Denham.

[16] Automotive Industries., June 30,1923 pp.1006

[17] Automotive Industries, December 18,1924. pp. 1049-1050 'New Device Enriches Charge For High Speed and Heavy Pull And Leans It Otherwise'. By W.L. Carver.

[18] Automotive Industries., September 24, 1925 pp.516 'Designs New Fuel Vaporizer'

[19] R.Covey, personal communication

[20] Winnipeg Free Press., August 18, 1973 page 6 Article: 'Auto Firm Head Recalls That F "Legendary" Carburetor By Greg Shilliday.

[21] Winnipeg Free Press.,April 30,1942 page8. 'Hints Pogue Carburetor Sabotaged'

[22] personal communication-war veteran

[23] US Patent 4,047,512 Electric Fuel Vaporizer Douglas R. Hamburg and Jerome F. Hough Assignee: Ford Motor Company International Claims: F02M 031/00 US Classification: 123/122

[24] SAE Paper #760288 A Vaporized Gasoline Metering System For Internal Combustion Engines D.R. Hamburg and J.E. Hyland Engineering and Research Staff, Ford Motor Company.

[25] Journal Of The Society Of Automotive Engineers., August,1923. Vol.XIII.,Number 2. Page 131.

[26] SAE Paper#760288., pp.3

[27] The Journal Of The Society Of Automotive Engineers August,1923. pages 130-132. Article: 'Exhaust Heated Vaporizer'

[28] SAE Paper #760288 page 7.

[29] US Patent 4,161,931 Douglas R. Hamburg, Dante S. Giardini, 'Vapor Temperature Controlled Gas Heat Exchanger' Assignee: Ford Motor Corporation

[30] US Patent 4,161,931, column 2,line 20

[31] SAE Paper 720462 'Ethics Of The Professional Automotive Engineer'.

[32] Examples given are US Patents, assignee in parenthesis: 4,085,721 (Exxon), 3,996,906 (GM), 3,763,839 (Phillips Petroleum), 3,957,024 (Shell Oil), 3,927,651 (Shell Oil), 4,087,512 (Ford), 4,022,172 (American Motors), 3,851,633 (General Motors)

[33] SAE Journal., March,1922, Volume X, Number 3.,pages 171-176 "Manifold Vaporization And Exhaust Gas Temperatures", O.C.Berry and C.S. Kegerreis (Purdue University)

[34] US Patent 4,167,165 Fuel Vaporizer For Internal Combustion Engines. Ian C. Findlay and George C. Gallagher, both of Glasgow, Scotland., assignors to The Secretary Of State For Industry In Her Britannic Majesty's Government Of The United Kingdom Of Great Britain And Northern Ireland.

[35] US Patent 3,763,838. Ian C. Findlay, Rodger Lindsay, John Wilson 'Carburetor Having A Heat Pipe For Vaporizing Fuel' Assignee: Shell Oil Company, New York, New York. Oct 9,1973

[36] McGraw-Hill Encyclopaedia Of Science And Technology, 8th Edition, 1997 McGraw-Hill Pub.Corp. N.Y.. N.Y.. Volume 13, page 327
Aviation Gasoline=33 degrees to 170 degrees Centigrade,
100 degrees to 392 degrees Fahrenheit.
Automobile Gasoline=-1 degree to 200 degrees Centigrade, or 30 degrees to 390 degrees Fahrenheit. [page 325](#)
Kirk-Othmer Encyclopaedia Of Chemical Technology
J.Wiley & Sons. Corp,N.Y.,N.Y.. Vol..11,pp.661
Light Gas Oil=200-300 degrees Centigrade=[324-572 degrees Fahrenheit](#)
Heavy Gas Oil=300-400 degrees Centigrade=(572-752 degrees Fahrenheit.)

[37] 7030 Brass.CDA260 Cartridge Brass
Used in rifle ammo = Copper 68%, .07% Lead,.05% Iron, rest is zinc
Cost: Metal plate, 1 square foot,1/8 inch-\$89.95(US)
Takes nickel plating well, will not decompose at 400F

[38] Inconel 625 = 61% Nickel,21% Chrome,9.5% Molybdenum, 3.6% Niobium, plus tantalum.
Cost,one square foot 3/16 inch is: \$11.00/100 pound lot. One square foot is 8 1/2 lbs.
Hastelloy G30 = 65% Nickel, 35% chromium, molybdenum, silicon, carbon (trace), copper (trace)
310 Stainless Steel = 20% Nickel, 25% Chrome, 1% Manganese, 1/2% Silicon, Iron One square foot 3/16 inch plate is @ \$9.00

[39]Business Week, August 8,1994 "Engines That Run On Water?"
Author: Otis Port of New York. Science and Technology Section.
To search and retrieve on the Internet: <http://bwarchive/businessweek.com/>
Business Week says that Gunnerman's company "A-55LP" has formed a joint venture with Caterpillar, Incorporated-the tractor company. In tests, Reno, Nevada powered a city bus with Gunnermans' system for five months.
The United States Air Force tested it at the Elmendorf Base in Alaska. The Minnesota Transportation Department

sponsored a five vehicle journey from Reno to Minnesota using vehicles equipped with his system. We quote Business Week:

"Gunnerman claims to have a technology that enables engines to burn a mixture of half fuel, half water. Yes, water. What's more, he says, the mixture gets 40% better mileage from the gasoline it contains and emits significantly less pollution because engines run cooler.

In particular, tailpipes emit virtually no nitrogen oxides — the principal source of smog. Why does the fuel result in better mileage? Gunnerman believes the water gets broken down into hydrogen and oxygen, and the hydrogen contributes energy to the combustion process.

That's because there is one additional trick in his patented process: A small piece of nickel must be attached to the crown of each piston or the top of the cylinder heads. The nickel seems to act as a catalyst in 'dissociating' the water, says Gunnerman." We use this same technology by employing a nickel flame arrestor, and in our Petrocharger we are actually able to add water. Unbelievable but real.

<http://www.uspto.gov>

See Also

Declaration of Independence from Fossil Fuels