

Science & Technology

The environmentalists foiled again: Leaded gasoline scare is a fraud!

by William Engdahl

Environmental Protection Administrator (EPA) William D. Ruckelshaus announced at a press conference on July 30 that "leaded gasoline is responsible for about 80% of the lead in air, and we know the direct relation between lead in gasoline and the amount of lead in human blood." He pointed to the "capacity of lead to impair the physical and mental health of our children, particularly those who live in the inner city." This became the motivation for proposed drastic changes in the amount of lead permissible in gasoline in the United States, possibly including a total ban.

The controversial EPA action came a scant month after hearings in the Senate Environment and Public Works Committee on S. 2609, the bill by Sen. David Durenberger (IR-Minn.) which would ban lead in gasoline by 1988, on the grounds that it is "contributing to the poisoning of children." The image of lead-damaged babies is powerful motivation to act for most decent citizens. But is leaded gasoline the cause of the cited problem?

Currently some 43% of all gasoline consumed in the United States is leaded. The issue has enormous economic as well as social implications. Not the least is the fact that the same environmentalists who have almost destroyed the American automobile industry in the past 15 years are now attempting to introduce the same arguments to force a change throughout the European Community to unleaded gasoline.

To assess the issue, I spoke with Dr. Robert Moon, professor emeritus of physics at the University of Chicago, who has made a detailed study of the question. Dr. Moon was a scientist with the Manhattan Project.

Why was leaded gasoline developed in the first place? It was discovered in about 1927. In the combustion process of an internal combustion engine, the molecules have nine degrees of freedom. Three degrees of freedom, the so-called translational degrees, relate to the three perpendicular axes of the motion of the piston in the cylinder. Three others relate to the vibration along the three axes and three to rotation along the same. The idea is to prevent the rotation and vibration and get all that energy channeled into the energy of translation. This is what lead does.

"There is a fantastic difference between leaded gasoline and non-leaded gas, especially for high compression en-

gines," Dr. Moon stressed. "There is a direct relation between higher compression ratio and higher engine energy efficiency. The introduction of lead to gas in the late 1920s took the compression ratios up from 7:1 up to 10:1. Diesel engines have about 20:1. Before the 1920s, there were chronic valve problems with low compression engines using unleaded gas. With the introduction of lead and higher compression ratios, the lead lubricates around the valves reducing



The EPA's William Ruckelshaus is spreading scare stories about leaded gasoline, but it's not the first time he had his facts wrong.

burn problems and excessive wear. This was the situation from the 1930s up into the late 1960s and until the environmentalists came in with the demand to reduce the leaded exhaust emissions in order, as they claimed, to reduce the problem of smog in Los Angeles.”

The Los Angeles smog, however, is not due to exhaust emissions but to a geophysical temperature inversion caused by the mountainous natural terrain surrounding the city. That fact made little difference to the anti-lead crusaders. The press printed sensational pictures of a smog-filled city, and the public accepted the argument that the leaded gasoline was to blame. Then came the 1970s, with the extraordinary rise in the price of crude oil raising the demand for energy conservation.

What makes a good car?

Our early automobiles satisfied two criteria of good performance:

- 1) ton-miles per gallon—measured as total weight including six adults with luggage and the resultant ratio mileage for this weight;
- 2) safety.

But, Dr. Moon emphasized, with the energy crisis and the demand for conservation, new criteria replaced these:

- 1) miles-per-gallon—the ratio to the loaded weight was dropped entirely as a consideration;
- 2) the number of traffic *deaths* per 100,000 miles, rather than the number of injuries—which soared, as cars became lightweight rolling death traps.

Today, we only talk about the miles-per-gallon, and don't worry about the deaths.

Enter the pollution experts. Nitrous and nitric oxides are produced from combustion emission of leaded gas. These form a meta-stable water vapor, which was considered to be the cause of the smog in southern California. Thus the demand went up for introduction of what is called a catalytic converter in California cars. It was found that a platinum catalyst dissociates NO (nitrous oxide) and NO₂ (nitric oxide) into nitrogen and oxygen. But it also produces water, which unites with the sulfur dioxide to produce sulfuric acid as a byproduct. Now sulfuric acid is emitted by automobiles. These catalytic converters create acid lakes and rivers via the emissions carried up through the atmosphere and precipitated into lakes. To get rid of this sulfuric acid, barium would have to be used, which would be cost prohibitive. So, if leaded gas is used with the platinum catalytic converter, the lead “poisons” the platinum. Therefore, the turn to *unleaded gas* in the 1970s.

A new law, the Energy Conservation and Policy Act of 1975, passed amid manipulated hysteria over Arab oil embargoes and gas lines, mandated national standards of far higher gasoline efficiency, as measured only by miles-per-gallon. This was the origin of the notorious EPA mileage figures.

As a result of removing the lead from our gasoline, we

were forced to return to the lower compression ratios of the pre-1927 era. “By this time,” Dr. Moon stated, “we were really in trouble, with reintroduction of lower compression ratios and therefore lower engine efficiencies.” In order to keep to the higher miles-per-gallon targets mandated, we had to strip down our cars, turn to more and more lightweight plastic, lighter grade steel, spare tires which don't work, and such. So what was next? Smaller, lighter cars. Safety considerations go. We no longer build the family car.

“Now, if we eliminate all leaded gasoline, there will not be enough gasoline to go around,” Moon added. “Already we no longer make premium leaded, only regular, so larger high-compression engines do not perform optimally. Furthermore, platinum is a very rare element and we are throwing it away in these catalytic converters.”

The source of lead poisoning

The EPA proposes a 91% reduction in the lead content of leaded gasoline from 1.1 grams/gallon down to 0.1 gram by the end of next year. According to EPA spokesmen, this would have little effect on the performance of the vast number of trucks and cars which still use lead. It would certainly have a questionable impact on the health condition of children, according to a variety of recent scientific studies.

One study, carried out under the direction of the Lead Laboratory of the Wharfedale General Hospital in Leeds, England, puts Ruckelshaus's major premise in question. The Leeds results, in fact, indicate that it is not at all a significant proportion of lead that comes from gas emissions. Rather, the lead getting into the human body's blood stream is overwhelmingly found to come from water, not from the air. The results of the study, published in the July 12, 1984 *Nature* magazine, point to the conclusion that there is no correlation between the gasoline emission and children's lead readings, but that the principal source of lead is drinking water.

“Should children stop drinking the water which their parents drink?”, Moon asks. “Then look at other sources of lead in our society—leaded glasses, wine bottles, pottery glazes, polyvinyl lead stabilizers. Or what about eating wild duck—the lead in the shotgun shell? Many heavy metals besides lead—mercury, tin—damage the central nervous system of people, yet are common.”

Moon is angry over the fraudulent scientific claims used by Ruckelshaus and the EPA to justify a move of such great social and political consequences. “If a person has a disease, you must treat him for that disease,” Moon stresses. “There are very effective ways of removing lead from the system via a chelating system. One chelating agent is common in some brands of margarine. EDTA is a good chelating agent for lead and heavy metals.

“It seems to me that there are so few doctors who know how to use the chelating process for removal of lead—only 7 doctors in the entire state of Illinois know how to chelate for example—that some emphasis should be put on training more.”