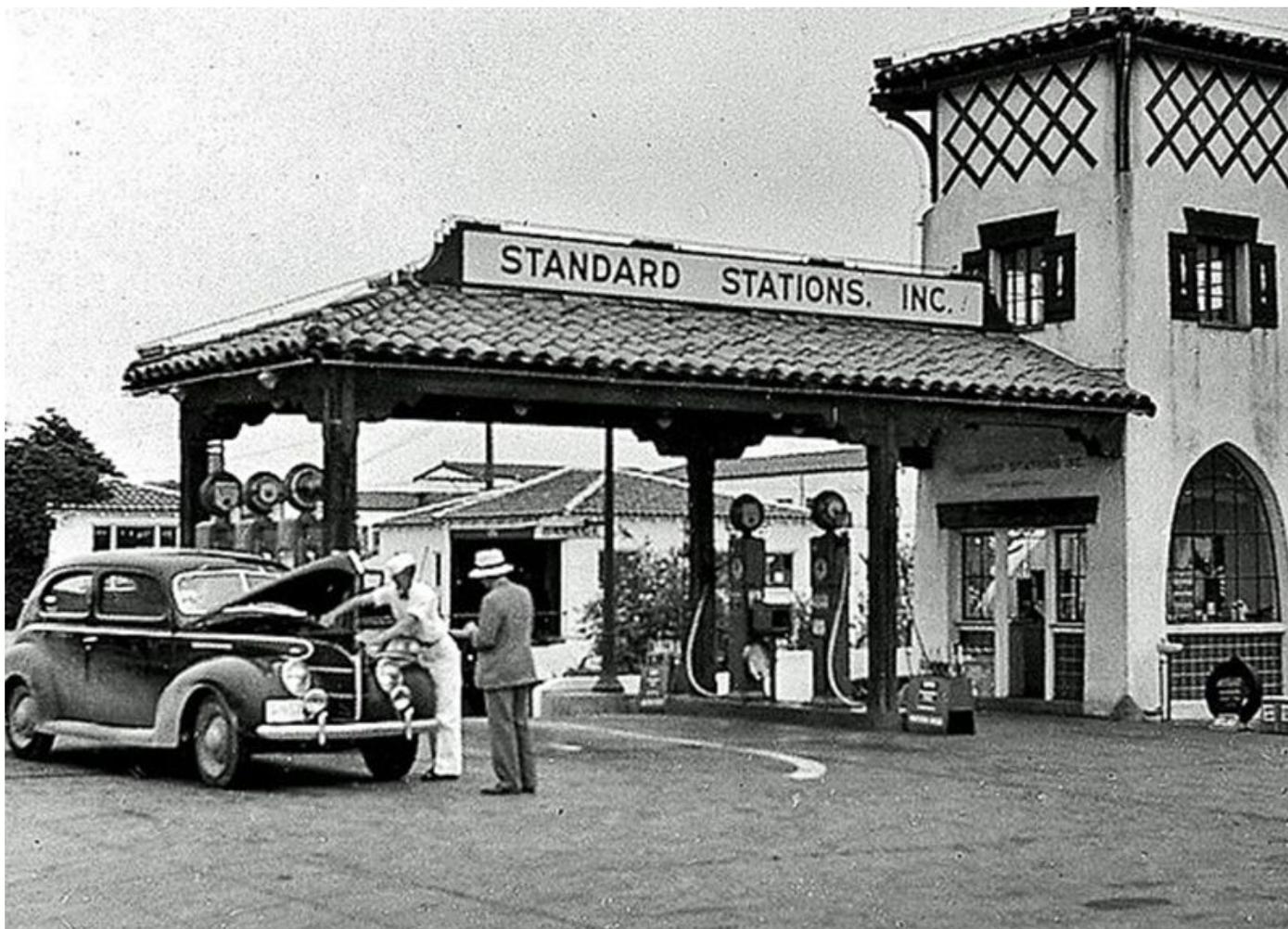


Leaded Gas Was a Known Poison the Day It Was Invented

For most of the mid-twentieth century, lead gasoline was considered normal. But lead is a poison, and burning it has had dire consequences



A Standard Stations filling station in California, circa 1939. (Wikimedia Commons)

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smithsonianmag.com
December 9, 2016

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For most of the mid-twentieth century, lead gasoline was considered normal. It wasn't: lead is a poison, and burning it had dire consequences. But how did it get into gasoline in the first place?

The answer goes back to this day in 1921, when General Motors engineer named Thomas Midgley Jr. told his boss Charles Kettering that he'd discovered a new additive which worked to reduce the "knocking" in car engines. That additive: tetraethyl lead, also called TEL or lead tetraethyl, a highly toxic compound that was discovered in 1854. His discovery continues to have impact that reaches far beyond car owners.

Kettering himself had designed the self-starter a decade before, [wrote](#) James Lincoln Kitman for *The Nation* in 2000, and the knocking was a problem he couldn't wait to solve. It made cars less efficient and more intimidating to consumers because of the loud noise. But there were other effective anti-knock agents. Kitman writes that Midgley himself said he tried any substance he

could find in the search for an antiknock, “from melted butter and camphor to ethyl acetate and aluminum chloride.” The most compelling option was actually ethanol.

But from the perspective of GM, Kitman wrote, ethanol wasn’t an option. It couldn’t be patented and GM couldn’t control its production. And oil companies like Du Pont “hated it,” he wrote, perceiving it to be a threat to their control of the internal combustion engine.

TEL filled the same technical function as ethanol, he wrote: it reduced knock by raising the fuel’s combustability, what would come to be known as “octane.” Unlike ethanol, though, it couldn’t be potentially used as a replacement for gasoline, as it had been in some early cars. The drawback: it was a known poison, described in 1922 by a Du Pont executive as “a colorless liquid of sweetish odor, very poisonous if absorbed through the skin, resulting in lead poisoning almost immediately.” That statement is important, Kitman wrote: later, major players would deny they knew TEL to be so poisonous.

So in February 1923, a filling station sold the first tank of leaded gasoline. Midgley wasn’t there: he was in bed with severe lead poisoning, [writes](#) History.com. The next year, there was serious backlash against leaded gasoline after five workers died from TEL exposure at the Standard Oil Refinery in New Jersey, [writes](#) Deborah Blum for *Wired*, but still, the gasoline went into general sale later that decade. In 1926, she writes, a public health service report concluded there was “no reason to prohibit the sale of leaded gasoline” so long as workers were protected when they made it. Blum continues:

The task force did look briefly at risks associated with every day exposure by drivers, automobile attendants, gas station operators, and found that it was minimal. The researchers had indeed found lead residues in dusty corners of garages. In addition, all the drivers tested showed trace amounts of lead in their blood. But a low level of lead could be tolerated, the scientists announced.

That report acknowledged that exposure levels might rise over time. “But, of course, that would be another generation’s problem,” she writes. Those early actions set a precedent that was hard to undo: it wouldn’t be until the mid-1970s that a growing body of evidence about the dangers of leaded gasoline lead the EPA to enter into a years-long legal struggle with gasoline-makers over phasing out leaded gasoline.

The effects of so much lead being burned and forced into the air are still being felt in the United States and other countries where leaded gasoline was—or [still](#) is—used.

“Children are the first and worst victims of leaded gas; because of their immaturity, they are most susceptible to systemic and neurological injury,” wrote Kitman. Research has shown that lead exposure in children is linked to “a whole raft of complications later in life,” [writes](#) Kevin Drum for *Mother Jones*, among them lower IQ, hyperactivity, behavioral problems and learning disabilities. A significant body of research links lead exposure in children to violent crime, he writes. Much of that lead is still around in environments that were contaminated by gasoline fumes during the era of unleaded. It’s a problem that can’t be left for another generation, Drum writes.

About Kat Eschner

Kat Eschner is a freelance science and culture journalist based in Toronto.