

# Stu's Notes #15

*Stu's Notes* provide selected passages from books that are of interest to Stu. They are primarily direct quotes, though some longer passages are summarized. They do not generally provide a thorough synopsis of the book. Rather, they capture individual facts or opinions of interest, which may or may not be reflective of the overall text.

**Title:** **Lives Per Gallon: The True Cost of Our Oil Addiction**

Author: Terry Tamminen

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*Summary: Documents the negative impacts of oil on society: tax subsidies, externalities, war, global warming, political and social damage, health (primarily cancer and lung damage). Also underhanded attempts by the oil and automotive industries to avoid greater regulation and thwart competition: destruction of rail-based transit in the early 20<sup>th</sup> century, killing the electric car, etc. Includes easy steps (primarily driver behaviours) to reduce auto fuel consumption by 20% or more. Promotes hydrogen as an attainable goal. Favours litigation against oil and auto industries.*

Highlights: Oil and auto subsidies [p.61]

The National City Lines conspiracy against transit [p.110-111]

Corporate efforts to subvert environmental legislation [p.120-152]

Reducing transportation fuel consumption by 20% [p.162-163]

How would we design a city on Mars? [p.165-166]

Addresses objections to hydrogen economy [p.169-186]

1875 Congressional Record on the perils of gasoline [p.205]

Summary of oil impacts [p.206-207]

## *1: The Breath of Our Fathers*

## *2: A Losing Proposition*

## *3: Desperate Enterprise*

**Table 3.1: Annual U.S. Federal Tax Breaks and Other Direct Subsidies for Oil**

<u>Credit or Subsidy</u>	<u>Estimated Annual Value (\$B)</u>	
	<u>Low</u>	<u>High</u>
2005 Energy Policy Act	6	6
Depletion Allowance	0.784	1
Fuel production tax credit	0.769	0.900
Enhanced oil recover tax credit	0.026	0.100
Foreign tax credit	1	3
Foreign income "deferral"	0.183	0.318
Accelerated depletion allowance	1	4.5
U.S. Department of the Interior oil resources management programs and federal oil research programs	0.153	0.938
U.S. Department of Defense programs to protect oil supply (not including wars, such as the Gulf War of 1991 or the Iraq war of 2003 to the present, which costs more than \$100 billion per year by itself)	55	96
State tax subsidies (related to federal tax breaks)	0.125	0.323
<b>Total annual U.S. subsidies</b>	<b>\$65B</b>	<b>\$113B</b>

"Moreover, what price do we put on taxpayer losses associated with global warming, water pollution, and the pollution that literally dissolves our national treasures like the Statue of Liberty. ... Although some of the costs are both variable and subject to debate, the sum total of the costs presented in this chapter so far looks something like those presented in table 3.2." [p.61]

**Table 3.2: Annual Costs to U.S. Consumers of Oil and Auto Industry Subsidies and Externalities (in Billions of U.S. Dollars)**

<u>Item</u>	<u>Estimated Annual Cost (\$B)</u>	
	<u>Low</u>	<u>High</u>
Federal tax breaks and subsidies (see table 3.1)	65	113
Health-care costs	54.7	672.3
Crop losses	3	6
Damage to materials and buildings	1	8
Damage to forests	0.2	2
Water pollution	0.4	1.5
Total of all states' direct subsidies	4.1	4.1
<b>Total</b>	<b>\$128.4B</b>	<b>\$806.9B</b>

Excludes other indirect subsidies (e.g., costs of roads, harbors, etc. that do not just benefit the oil and auto industries).

“So there it is, the final Devils’ invoice, the amount we pay to keep the needle from hitting ‘empty’: well over \$100 billion each year and perhaps closer to \$1 trillion. That comes to as much as \$2,700 for every man, woman, and child in the United States every single year. That works out to \$1 per gallon and possibly as much as \$6 per gallon added to the actual price of every gallon of petroleum fuel used in the United States for these subsidies, costs, and other externalities. For that kind of money, we could provide health insurance for the forty-five million Americans who have none *and* build fifteen hundred new schools in every state in the union.” [p.61]

“In September 2003, the White House Office of Management and Budget released a report showing that the benefits from USEPA rules, in all areas of pollution regulation, outweigh the costs imposed on industry and local governments by more than a ten-to-one margin. In short, clean air is a valuable financial investment. Given such positive cost-benefit analyses, what is preventing us from further reducing or even eliminating petroleum air pollution from its biggest source, the vehicle tailpipe?” [p.62-63]

#### ***4: All That Glitters***

A history of oil-related warfare, starting in 1899 when the British converted the Royal Navy to oil, of which they had none on in Britain. In 1909, Winston Churchill helped form the Anglo-Persian Oil Company, later British Petroleum.

Discussion of global warming.

Political and social damage to oil-producing countries. Examples of Nigeria, Columbia, Ecuador, Kazakhstan.

## 5: *Wealth Seems Rather to Possess Them*

The twin deceptions of tobacco and oil.

“It was that same year, 1922, when GM’s Alfred P. Sloan Jr. secretly hatched a plan to replace the nation’s clean, electric mass-transit railcars with dirty diesel buses and petroleum-powered automobiles. Faced with record red ink the year before, Sloan knew he would need to expand the market for his company’s products. Nine of ten vehicular trips in the United States were made on mass transit at the time, and nine of ten Americans did not even own a car. Sloan connected the dots and aimed his sights at a large, but obvious target: kill the urban rail systems and essentially force people to buy cars and force cities to buy buses.” [p.110]

“Like a good military general, Sloan knew that he needed allies. GM, Standard Oil, Phillips Petroleum, Firestone Tire & Rubber, and Mack Truck all made a profit from selling buses, trucks, and cars, not from selling electric-rail mass-transit trains. Sloan and his allies created a shell company, National City Lines, to quietly buy up the nation’s mass-transit agencies and scrap the electric trains they operated. National City Lines could then replace the trains with buses made and fuelled by the conspirators. In the process, it could reduce overall mass-transit service and promote automobile sales as a more convenient option to millions of consumers.” [p.110]

“Nor were the conspirators content with expanding market share for their products; rather, they were determined to permanently crush their competition. In Los Angeles, for example, they doused the famous Red Cars with kerosene as they were retired and set them ablaze. (The 1988 movie *Who Framed Roger Rabbit* was loosely based on the scandal and depicts that fateful scene.)” [p.111]

“In 1947, the administration of Harry Truman filed antitrust lawsuits against the companies; in 1949, those companies were found guilty in federal court of violating federal antitrust laws and conspiring to monopolize the sale of buses and force their sale to the public transit agencies. The companies were, in effect, eliminating clean, electric-rail mass-transit and replacing it with their products. Unfortunately for the United States, government regulators acted too late. Although the conspiracy was proven in court and later upheld by appellate courts, the corporations involved were fined only \$5,000 and the executives were fined just \$1 apiece because the judge determined that there wasn’t much anyone could do about the lost mass transit and the now-ubiquitous diesel buses and gasoline cars on dozens of American Main Streets.” [p.111]

Marketing of high-octane fuels which, for most cars, are useless or detrimental.

Harmful additives in gasoline.

Resistance to pollution controls (and related misleading advertising).

“‘If GM is forced to introduce catalytic converter systems across the board on 1975 models, the prospect of an unreasonable risk of business catastrophe and massive difficulties with these vehicles in the hands of the public must be faced,’ declared Ernest Starkman, GM vice president for environmental affairs.” [p.120]

Caterpillar, Cummins, Detroit Diesel, Mack Trucks / Renault, Navistar / International, and Volvo installed on / off switches on pollution control devices on more than a million engines, so that the device could be deactivated in normal usage (i.e., when not being tested). [p.123-124]

The elimination of lead from gasoline began in the USA in 1973, but lead remains in the gasoline of dozens of countries (mostly poor third world nations). [p.125]

## ***6: Worse Poison to Men's Souls***

Government legislation: being seen to be busy. [p.132-136]

History of the Corporate Average Fuel Economy (CAFE) standards. Big auto makers said it would wreck their business and lead to massive job losses. But Chrysler (while hanging on the edge of bankruptcy) made the investments that allowed them to meet the requirements. But, under pressure, the Reagan administration rolled back the CAFE standards. [p.136-145]

“I’m a little more than unhappy about it,” snapped Chrysler chairman Lee Iacocca, upon learning of the 1986 rollback. “We spent millions to meet the law when we were hanging on by our fingers. It’s damn stupid to be penalized for obeying the law. It’s a shot in the head. ... GM and Ford said if they couldn’t sell big cars in order to meet CAFÉ they would have to shut their plants and lay off people. Would GM shut a plant because instead of making \$5,000 profit on a car they had to pay a CAFE fine and only make \$4,500? That’s mad; that’s crazy.” [p.140]

The fight to kill the zero-emission vehicle (ZEV). Pressure on electric utilities to oppose ZEVs. [p.146-153]

“In 1995, the [American Automobile Manufacturers Association] sent out a request for proposals from public relations firms seeing ‘a qualified contractor to manage a statewide grassroots ... campaign in California to create a climate in which the state’s [ZEV] mandate can be repealed.’” [p.150]

“Still, after several more years of foot dragging and intense lobbying, the auto companies took off the gloves and simply sued the California Air Resources Board in 2001 to derail the ZEV mandate completely.” [p.151]

GM produced 1,100 of their EV1 model. They ordered all these leased vehicles returned to GM for destruction. “To show their displeasure, EV1 owners held a mock funeral in July of 2003 before their beloved ZEVs could be laid to rest by GM and its [U.S. Advanced Battery Consortium] collaborators. ‘The detractors of electric vehicles are right,’ proclaimed actor Ed Begley Jr. in his eulogy at the Hollywood Forever Cemetery where the event was staged, wreath-draped EV1s in the background. ‘Given their limited range, they can only meet the needs of 90 percent of the population,’ he added sarcastically.” [p.152]

## *7: Postcards from the Year 2025*

Energy Independence Step One: Conserve [p.159-163]

Tips to reduce your fuel consumption by 20 percent or more [p.162-163]:

- Drive at posted speed limit. Travelling at 75mph uses 15% more fuel than at 60mph.
- Save 2% to 3% with proper tire inflation.
- Save 2% to 3% by opening the windows to let the hot air out of the car, before turning on the air conditioner.
- Save a few percent by avoiding jackrabbit starts.
- Save 1% to 2% by using motor oils with the “Energy Conserving II” label.
- Leave some air space in the top of the gasoline tank, to allow fuel to expand during the day.
- Save 5% by reducing drag (no roof-top rack) and 1% to 2% by reducing weight load by 100 pounds.
- Shut off the engine when idling curb-side.
- Save 5% by telecommuting or taking transit, one day per month.
- Don’t waste money on high-octane fuels.

Energy Independence Step Two: Fuel Efficiency. Smaller cars, hybrids. [p.164-165]

Energy Independence Step Three: Evolve to Hydrogen Fuel. [p.165-186]

“If given such a blank canvas [NASA Mars colony] to develop for human use, how would you begin? Would you build residences in the middle of the most fragile natural resources and then build the workplaces 50 kilometers away? Would you connect the two with costly ribbons of steel and concrete, scars across the virgin territory you just adopted? To get from one point to another, would you put people in 3-ton steel and plastic containers, propelled by a highly flammable substance that could only be found in sufficient quantity on the opposite side of the globe, a substance that could only be made useful by drilling thousands of meters into the planet and then filtering the stuff in factories built on vast, industrial wastelands.

“Imagine what you have wrought for energy production on your newly found paradise. Your raw material would be transported thousand of kilometres back to the other side of the planet in vessels the size of the Empire State Building, occasionally spilling large volumes along the way like a drunken waiter in a cocktail lounge. Back at the colony, an industrial landscape of pumps, pipes, towers, compressors, valves, furnaces, heat exchangers, and other components produces your fuel by running the raw materials you just sucked from the planet’s bowels through a distillation tower and a monstrous pressure cooker that uses heat to separate liquid and vapour. Another leviathan mixes a powdery catalyst with the heavier liquids at 1,300 degrees Fahrenheit to ‘crack’ larger molecules apart and create the fuel and a host of toxic by-products.

“Would you then encourage your colonists to waste as much of this hard-won energy resource as possible, fouling what atmosphere and water supplies you’ve been able to generate for yourselves? Would their vehicles be so impractical that only 5 percent of the energy in this newly made fuel was used to move the colonists or other cargo, while the remainder was wasted as heat energy and toxic emissions?” [p.165-166]

Addresses concerns about hydrogen [p.169-186]

- Danger from hydrogen is probably similar to or less than existing dangers from petroleum or natural gas.
- Price of fuel cells will come down as quantities increase. Even if not, can get most of the gains by burning hydrogen in a hybrid (i.e., battery-assisted) Internal Combustion Engine.
- Does it really matter if you can only go 200 miles on a tank, instead of 300?
- Research is underway to get fuel cells to work in extremely cold weather.

“In fact, the only real impediment to full commercialization of hydrogen-powered vehicles is mass production of both the fuel and the vehicles. That’s what brings down the price of anything, making it available to the widest spectrum of consumers, but that’s where someone needs to break the chicken-or-egg cycle.” [p.174]

Can make hydrogen from:

- waste (sewer) water and stranded (night-time) electricity production
- methane, from organic waste
- wind or solar power (it would take 200,000 square kilometres of solar thermal or photovoltaics to generate 100 percent of the energy needs of the United States)
- coal gasification, if carbon sequestration can be implemented at a suitable scale [p.179-182]

“Are there strategies that can force oil companies and automakers to evolve so that we might survive to do likewise? Has society ever confronted such an entrenched, well-funded opposition – where the stakes were so high, both in terms of our public and economic health – and come out victorious?” [p.186]

## ***8: The Quality of Mercy***

Outlines a series of possible litigation measures that could be applied in the U.S.: public nuisance, fraud and misrepresentation, product liability (strict liability and negligence), antitrust conspiracy, public trust doctrine, compensation of victims. [p.187-202]

Also considers possible regulatory measures. “Given the history of oil and auto companies, however, it is likely that any attempt to hold them financially accountable would also end up in court, to, in essence, even these efforts become legal strategies.” [p.202]

## ***9: The Seventh Generation***

“A new source of power, called gasoline ... is exploded inside the cylinder of the ... so-called ‘internal combustion engine.’ The dangers are obvious. Stores of gasoline in the hands of the people interested primarily in profit would constitute a ... hazard of the first rank. Horseless carriages propelled by gasoline engines might attain speeds of 14 or even 20 miles per hour ... hurtling through our streets and poisoning our atmosphere.’ Summary of the report of the Congressional Horseless Carriage Committee of 1875” [p.205]

The sacrifices we will *not* make for locally produced biofuels and hydrogen [p.206-207]:

- tens of thousands of premature deaths each year (in the U.S.)
- tens of thousands of hospitalizations
- millions of asthma attacks
- tens of thousands of new cancer cases each year, from diesel exhaust
- five times more asthma and lung cancer cases among poor people, because they live near railways, railroads, and refineries
- despoiling of natural resources for a few more days worth of oil
- little or no petroleum-related lead, benzene, toluene, xylene, MTBE, and other toxins in our food and drinking water
- tens of millions of gallons of water-borne oil spills per year
- send \$612,500 every minute to largely anti-American countries to buy crude oil
- billions of lost tax revenues, by ending tax exemptions and subsidies for some of the richest corporations in the world
- up to one third of crops lost to petroleum-related air and water pollution
- millions of dollars not wasted by consumers on fraudulent grades of fuels
- reduced damage from global warming (if help other nations to move in the same direction)
- “The ways of life of villagers from the Colombian countryside to the Niger River delta will no longer be distorted by oil pipelines and drilling rigs that transect their landscapes.”
- “Our sons and daughters will not die in foreign wars to protect our access to oil.”

Declare our energy independence and break our addiction to oil by making three simple changes in the way we think and act [p.211]:

- Accept personal responsibility for the good of the community
- Make energy policy a critical test when you step in the voting booth
- “Thirdly, send every message you can to the corporations that have encouraged our addiction in the first place to say that you want them to change.”

“If today is the day we take these steps, and many more like them to gain true energy independence, history will not need to remember us. Our descendants will still be here, healthy and prosperous, to give testimony for us about the foresight and strength of character their ancestors displayed at the dawn of the twenty-first century, seven generations ago.”