



The facts of this case come from the appellate opinion in *Grimshaw vs. Ford Motor Company*, 119 Cal.App.3d 757, 174 Cal.Rptr. 348 (1981).

“On May 28, 1972, Mrs. Gray, accompanied by 13-year-old Richard Grimshaw, set out in the Pinto from Anaheim for Barstow...The Pinto was then six months old...the Pinto suddenly stalled and coasted to a halt in the middle lane...but the driver of a 1962 Ford Galaxie was unable to avoid colliding with the Pinto....before the impact had been braked to a speed of from 28 to 37 miles per hour.”

“At the moment of impact, the Pinto caught fire and its interior was engulfed in flames....the impact of the Galaxie had driven the Pinto’s gas tank forward and caused it to be punctured by the flange or one of the bolts on the differential housing so that fuel sprayed from the punctured tank and entered the passenger compartment through gaps resulting from the separation of the rear wheel well sections from the floor pan. By the time the Pinto came to rest after the collision, both occupants had sustained serious burns....Mrs. Gray died a few days later...Grimshaw managed to survive but only through heroic medical measures. He has undergone numerous and extensive surgeries and skin grafts and must undergo additional surgeries over the next 10 years...”

“Design of the Pinto Fuel System:

In 1968, Ford began designing a new subcompact automobile...Mr. Iacocca, then a Ford Vice President, conceived the project and was its moving force. Ford's objective was to build a car at or below 2,000 pounds to sell for no more than \$2,000.

Ordinarily, marketing surveys and preliminary engineering studies precede the styling of a new automobile line. Pinto, however, was a rush project...Among the engineering decisions dictated by styling was the placement of the fuel tank...placed behind the rear axle leaving only 9 or 10 inches of 'crush space' far less than in any other American automobile or Ford overseas subcompact. In addition, the Pinto was designed so that its bumper was little more than a chrome strip...The absence of the reinforcing members rendered the Pinto less crush resistant than other vehicles. Finally, the differential housing selected for the Pinto had an exposed flange and a line of exposed bolt heads. These protrusions were sufficient to puncture a gas tank driven forward against the differential upon rear impact."

"Crash Tests:

During the development of the Pinto, prototypes were built and tested....prototypes as well as two production Pintos were crash tested by Ford to determine, among other things, the integrity of the fuel system in rear-end accidents....The crash tests revealed that the Pinto's fuel system as designed could not meet the 20-mile-per-hour proposed standard..."

"The Cost To Remedy Design Deficiencies:

When a prototype failed the fuel system integrity test, the standard of care for engineers in the industry was to redesign and retest it. The vulnerability of the production Pinto's fuel tank at speeds of 20 and 30-miles-per-hour fixed barrier tests could have been remedied by inexpensive 'fixes,' but Ford produced and sold the Pinto to the public without doing anything to remedy the defects..."

"Management's Decision To Go Forward With Knowledge Of Defects: ...

[T]he engineers responsible for the components of the project 'signed off' to their immediate supervisors who in turn 'signed off' to their superiors and so on up the chain of command until the entire project was approved for public release by Vice Presidents Alexander and MacDonald and ultimately by Mr. Iacocca. The Pinto crash tests results had been forwarded up the chain of command to the ultimate decision-makers and were known to the Ford officials who decided to go forward with production."

From the text, *Engineering Ethics: Concepts and Cases*, Harris, Pritchard, and Rabins, "[F]ord contended that the Pinto met all applicable federal safety standards at the time. J. C. Echold, director of automotive safety for Ford, issued a study entitled 'Fatalities Associated with Crash Induced Fuel Leakage and Fires.' This study claimed that the costs of improving the design (\$11 per vehicle) outweighed its social benefits. A memorandum attached to the report described the costs and benefits in this way:

Benefits

Savings	180 burn deaths, 180 serious burn injuries, 2100 burned vehicles
Unit cost	\$200,000 per death, \$67,000 per injury, \$700 per Vehicle
Total benefits	180 x \$200,000 180 x \$67,000 2100 x \$700 = \$49.5 million

Costs

Sales	11 million cars, 1.5 million light trucks
Unit cost	\$11 per car, \$11 per truck
Total costs	11,000,000 x \$11 plus 1,500,000 x \$11 = \$137 million

The estimate of the number of deaths, injuries, and damage to vehicles was based on statistical studies. The \$200,000 for the loss of a human life was based on a National Highway Traffic Safety Administration study, which estimated social costs of a death in this way:

Component

1971 Costs

Future productivity losses

Direct	\$132,000
Indirect	41,300
Medical costs	
Hospital	700
Other	425
Property damage	1,500
Insurance administration	4,700
Legal and court	3,000
Employer losses	1,000
Victim's pain and suffering	10,000
Funeral	900
Assets (lost consumption)	5,000
Miscellaneous accident cost	200
Total per fatality	\$200,725"

"On January 15, 1980, the Ford Motor Company went on trial on charges of reckless homicide in the 1978 death of three Indiana teenagers who burned to death after their 1973 Ford Pinto was hit from behind by a van. Indiana state prosecutors alleged that Ford knew Pinto gasoline tanks were prone to catch fire during rear-end collisions but failed to warn the public or fix the problem out of concern for profits. The trial marked the first time that an American corporation was prosecuted on criminal charges." (www.historychannel.com/speeches/archive/speech_465.html)