

Engineering management case study ford rollovers

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Secondly, the vehicle's instability due to high center of gravity and weak suspension was another cause for the rollover likeliness. Within the first year, on February 12, 1991, the first lawsuit came against the two companies (Ford and Firestone). (Willis Law Firm) Within the first two years, another three lawsuits began to cause a flood of lawsuits aimed at the two companies, ultimately having over 60 lawsuits in a 10-year period (23 of which came in 1999). Because of the amount of publicity and number of injuries involved with the Ford Explorer Rollovers, the National Highway Traffic Safety

Administration (NHTSA) finally began investigating the vehicle ten years after the first rollover occurred. Since the tires appeared to cause most of the rollovers by falling apart, Firestone was initially thought to be at fault. Shortly after Firestone learned of the rollover problem with the Ford Explorer, John Lamp, the CEO of Firestone stated, " Firestone will no longer sell tires to Ford for use on the Explorer. There is something wrong with the Ford Explorer. The testing and accident data we have done proves it, you can take our tires off the Ford Explorer and it would continue to roll over. (Willis Law Firm) This continued to cause friction between the two companies and the eventually ended the 100 year relationship. Firestone was founded by Harvey Firestone in 1900 and produced pneumatic tires for wagons, buggies, and other forms of wheeled transportation at the time of the era. However, prior to 1900, Firestone had been supplying The Ford Motor Company with tires. The Firestone Tire and Rubber Company, a pioneer in mass production, majority of their sales went to Ford. It is stated that roughly

more than 50% of Ford's tires were supplied by The Firestone and Rubbery Company.

Firestone came about because Ford had been producing tires in-house at one point. Therefore, Ford wanted to have a reliable supplier for the vehicles produced. Thus, a relationship was formed between Henry Ford and Harvey Firestone which would last for numerous years. The two entrepreneurs had even entered into a joint venture that experimented in rubber production, sharing knowledge with each other. The Firestone Tire and Rubber Company was originally based in Akron, Ohio where its competitor, Goodyear Tire and Rubber Company, was also stationed. This is important to note because

Goodyear will become a significant factor to the relationship of Ford and Firestone. (Wisped) During the 1 ass's, Firestone had major problems concerning their line of Firestone 500 tires. In 1973, only two years after the debut of the Firestone 500 tire, Firestone experienced a significant problem with tire separation. Thomas Robertson states, " We are making an inferior quality radial tire which will subject us to belt-edge separation at high mileage. " (Wisped) Firestone quickly implemented quality control measures to fix the problems, but they were unsuccessful in totally eliminating all the faulty tires.

In 1977, over 400, 000 tires were recalled in the Decatur, Illinois plant. After the National Highway Traffic and Safety Association's (NATHAN) investigation, Firestone quickly blamed the consumer on understanding the tires and poor maintenance. Also, in 1978, Firestone recalled more than 7 million of its Firestone 500 tires which was the largest recall to date. Due to

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the defective tires, more than 34 deaths were recorded. The NATHAN found out about the continuation of producing bad tires and fined Firestone \$500,000 (Wisped).

One will see later, this issue would have a severe impact on society as well as Ford. In March 1990, Ford released the 1991 Ford Explorer sport utility vehicle as a replacement for the dated Ford Bronco II. This vehicle was aimed at competing against the Chevrolet 5-10 Blazer and Jeeps as a rugged family vehicle. To compete against these other vehicles, the Explorer would need to be large enough for five people, have ample cargo space, and be reasonably priced, without expensive engineering costs. For these reasons, Ford decided to base the Explorer off of the very successful Ford Ranger pickup truck.

The Explorer borrowed the Rangers frame and suspension system, along with much of the body. With the additional row of seats and cargo area, the Ford Explorer weighed 600 pounds more than the Ford Ranger. Weighing 600 pounds more than the Ranger, Ford decided not to modify the suspension or tires of the Ranger that would be used on the Explorer; this ultimately lead to a high center of gravity. (Rowel) Codenamed NOUN by Ford's engineering department, Ford began to test the prototype Ford Explorer in 1987.

In May of that year, testing had shown that stability Of the Ford Explorer prototype is worse than that of the Bronco II. The Bronco II had previously been known for a few rollover incidents that were caused by a worth track width (the width between left- and right-side tires). To alleviate the Ford

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Explorers rollover potential, engineers stated in a memo on May 1, 1987 that the stability " can be improved by widening, lowering and using a smaller POP 5 tire. " Instead of redesigning key aspects of the vehicle, Ford decided to have Firestone redesign the tires: an attempt to keep Ford costs low.

One month later, on June 1 1, 1987, Ford met with the Firestone Tire Company and approved the Firestone ATX tire that would be used on the Ford Explorer. (Willis Law Firm) In the fall of 1988, a Ford report of the Ann.'s rollover testing states that the Ford Explorer demonstrated " performance issues" with the Firestone- recommended 35 SSI tire. (Willis Law Firm) A common practice for all auto manufactures is to reduce the tire pressures of trucks and sport utility vehicles to improve handling and stability, improving under steer and reducing maximum cornering capacity.

Ford proceeded with the tire pressure reduction, reducing it from the Firestone-recommended of 35 SSI to 26 SSI. Even further, Ford engineers noted that the vehicle experienced two wheel lift at 55 miles per hour due high center of gravity, tires and front suspension system. Rowel) Throughout the preliminary testing Ford and Firestone had been in constant communication for building and testing tires that would help reduce rollover rates. Firestone tested the vehicle with tire pressures of 26 SSI for front tires and 35 SSI for rear tires.