

Conceal knowledge of recalls at Mitsubishi Motors

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(Summary)

The cover up of recalls by Mitsubishi Motors Corp. started from the failure accident involving a trailer truck's tire-hub. On January 10th, 2002, a tire of a heavy-duty truck came off the truck and hit a pedestrian housewife. She was killed, and her two sons were slightly injured.

The cause of the accident was the failure of the tire-hub. There were 57 cases of tire-hub failures of heavy vehicles manufactured by Mitsubishi Motors Corp. since 1992, and a tire actually came off in 51 of the cases. Mitsubishi Motors Corp. claimed that these accidents happened because of poor maintenance by the owners of the vehicles. However, Mitsubishi Fuso Truck & Bus Corp., who took over the commercial truck and bus branch, accepted its responsibility for the failures as manufacturer and reported a recall of all of its heavy-duty vehicles to the Ministry of Infrastructure and Transport in March 2004. In May 2004, five former executives of Mitsubishi Fuso Truck & Bus Corp. were arrested on suspicion of violating the Road Trucking Vehicle Law (false report), and two former executives of Mitsubishi Motors Corp. were arrested on suspicion of causing deaths and bodily injury through professional negligence. The company itself was also prosecuted criminally for suspicion of violating the Road Trucking Vehicle Law (false report). The responsibility of the company was directly called into question.

1. Component

Tire-hub of heavy-duty truck. Fig. 1 shows a typical super-great tractor.

2. Event

A tire came off of a heavy-duty truck and hit a housewife, Shihoko Okamoto (Kamawada Yamato-city, Kanagawa prefecture). She died soon after, and her four-year-old and one-year-old sons were slightly injured.

Police in the Seya Station said the tire that had come off was the front left tire of the 26 tires on the truck. The tire came off with its wheel and fell down a slope for 50 m before it hit Ms. Okamoto on her back. She was walking on the left side of the street. The tire was 1m in diameter, 28 cm wide, and the total weight with its wheel was 140 kg. The hub is a component located between the tire and the axle that turns around the axle. The Kanagawa Prefectural Police found that the hub was broken and that the tire had come off with the brake drum.

This trailer truck was purchased in 1994, and it mostly carried heavy machinery like power shovels. The trailer truck passed an automobile inspection in January 2001. However, because the hubs lie inside the tire, it is difficult to see them from the outside. An inspector said that he checks hubs by tapping around them with a hammer. Mitsubishi Motors Corp. said that they had started to sell this type of trailer truck in 1986

and that there are about 750 trailer trucks in use now. Mitsubishi Motors Corp. also said that none of the tires had come off yet and that it has never recalled a trailer truck due to defects related to tires.

Figure 2 shows the positions of the hub and the tire, and Fig.3 shows the cross-sectional configuration of a hub. A hub is a cylinder with a disc-shaped head (flange). A flange is attached to the wheels with bolts. An axle is placed inside of the cylindrical part of the hub. A hub acts as a joint between an axle and a wheel. The Kanagawa Prefectural Police investigated the tire that came off of the truck and found that the hub (22 kg, made by special cast iron) was torn between the cylinder part and the disk part. Inside and outside of the hub's disk part, there were corners to fit the wheel and the brake drum to the hub. This is the critical point where trailer truck's weight and applied load while the vehicle is moving reach their maximum. The crack propagated in a straight line connecting the inside and outside corners. There were eight bolts remaining on the wheel.

3. Course

It was later revealed that there had been many cases of tires that had come off because of broken hubs before the accident of the Mitsubishi Motors trailer truck in the Seya-ward of Yokohama. The response (free collection / repair) of Mitsubishi Motors for the recall was poor, and they repeatedly covered-up and misrepresented incidents. Finally, Mitsubishi accepted their responsibilities for this accident and reported a full recall. Five former executives of Mitsubishi Motors were arrested on suspicion of violating the Road Trucking Vehicle Law (false report) and two former executives of Mitsubishi Motors were arrested on suspicion of homicide by professional negligence. The company itself was prosecuted criminally for suspicion of violating the Road Trucking Vehicle Law (false report). The responsibility of the company was directly called into question.

Mitsubishi Motors had lost public confidences before. In July 2000, information from complaints about more than ten types of cars was concealed in Mitsubishi Motors, so that those cars were not recalled.

The following incidents show the development of events from the accident to the prosecution of Mitsubishi Motors and recall of the vehicles.

- 21/June/1992

The left-front tire of a refrigerated van came off in Tokyo (confirmed by Mitsubishi Motors to be the first hub breaking case).

- June/1999

The right-front tire of a bus came off on the highway in Hiroshima.

- July-Aug/1999

A meeting about the bus incident was held. It was decided to report to the former Ministry of Transport that the hub failure had occurred due to bad maintenance.

- 10/Jan./2002

The left-front tire of a heavy-duty trailer truck came off in Seya-ward, Yokohama. The tire killed a mother and injured her two sons.

Mitsubishi Motors began providing free maintenance for the hubs of heavy-duty trailer trucks. They

concluded that the Yokohama case was due to bad maintenance, and they did not recall the vehicles.

- 17/Jan./2002

The countermeasures headquarters was set up in Mitsubishi Motors to discuss how to keep similar accidents from happening.

- 1/Feb./2002

The countermeasure headquarters concluded that the cause of the hub failures was frictional wear. They set out the basis of exchange in which the hub had to be exchanged when the wear was more than 0.8mm, and they reported this value to the Ministry of Infrastructure and Transport.

- Feb./2002

A working group of evaluation of front hub's strength was started in Mitsubishi Motors. They evaluated the strength of the hubs.

- Mar./2002

The working group obtained results from a sampling inspection that indicated that cracking occurs with less than 0.8mm of wear.

- June/2002

The measure council for recalls in the Ministry of Infrastructure and Transport audited the head department of development at Mitsubishi Motors (Kawasaki).

- July/2002

The working group of evaluation of front hub's strength concluded that frictional wear due to bad maintenance led to hub failure. However, it was believed that this conclusion was made in order to avoid a recall.

- Jan./2003

Mitsubishi Fuso Truck & Bus Corp. was founded as the truck and bus branch of Mitsubishi Motors. Mr. Wilfried Port, the former president of Daimler Chrysler, became the president and CEO.

- 19/Mar./2003

A young engineer at Mitsubishi Motors reported in an intra-office conference that the relationship between hub failure and frictional wear due to bad maintenance was weak. He emphasized the importance of evaluating the fatigue lifetimes of the main components.

- 24/Oct./2003

The Kanagawa Prefectural Police searched the headquarters of Mitsubishi Motors on suspicion of homicide by professional negligence. The police inspected the headquarters again in January 2004.

- 11/Mar./2004

Mitsubishi Fuso Truck & Bus Corp. admitted its responsibility as the manufacturer of the hubs, and it reported a full recall to the Ministry of Infrastructure and Transport.

- 6/May/2004

Because of the fatal accident in Yokohama, five former executives of Mitsubishi Motors were arrested on suspicion of violating the Road Trucking Vehicle Law (false report) and two former executives of Mitsubishi Motors were arrested on suspicion of homicide by professional negligence.

4. Cause

The reasons for the illegal cover-up to avoid the recall are as follows:

A recall would cost the company a huge amount of money that would hurt the company greatly. For that reason, the related departments put pressure on the market quality department, and the market quality department had to obey.

If the true information was revealed, the people who caused the defects in manufacturing, designing, and engineering would be punished. Those people wanted to avoid that punishment.

Mitsubishi Motors Corp. became independent from Mitsubishi Heavy Industry Corp. in 1970. Most of their market consists of members of the Mitsubishi group. This is true not only for the commercial trailer trucks and buses of Mitsubishi Fuso, but also for passenger cars. Mitsubishi Motors sold about 358,000 cars including 230,000 light vehicles in Japan; half of those cars appear to have been sold to members of the Mitsubishi group. In fact, one person out of ten is somehow related to a Mitsubishi group in Japan. Everyone in Japan had believed that companies having names with "Mitsubishi" would never fail. In the case of Mitsubishi Motors, this belief led the company to take selfish and illegal actions.

People who know Mitsubishi Motors well testified to the media as followings:

Executives care more about the company than the customers.

The authority is concentrated to the executives, and the employees must wait for instructions from the executives.

There have been repeated incidents that have hurt Mitsubishi Motors's corporate governance, including the problem of sexual harassment in a factory in the USA in 1996, the revelation of a relationship between the company and a corporate extortionist in 1997, and the cover-up of recalls in 2000. In spite of these incidents, the Mitsubishi group had always supported Mitsubishi Motors. The Mitsubishi group had never let a Mitsubishi company fail. The social responsibility of Mitsubishi Motors was therefore kept vague. On the other hand, Mitsubishi Motors was always afraid of the investors: Bank of Tokyo-Mitsubishi, Ltd. and Mitsubishi Corporation.

5. Immediate Action

It is dangerous to keep manufacturing unsafe products by giving priority to business. When car manufacturers find defects, they have to do everything that they can to assure safety, and then they must give information about the defects to the public. Consumers would select the manufacturers who act in this way.

6. Countermeasure

Mitsubishi Motors announced a scheme of management reconstruction on May 21, 2004. Marketing strategy was discussed in a "cross functional team", a group of about fifty backbone employees with the president and CEO Yoichiro Okazaki acting as the chairperson. This was a drastic change in the company policy, which had been highly conservative.

At the same time, Mitsubishi Motors established a business ethics committee that included experts from

outside the company. This committee supervised the company compliance.

This scheme, however, did not work. On January 28, 2005, Mitsubishi Motors announced another scheme of management reconstruction. Mitsubishi Heavy Industries, Mitsubishi Corporation, and Tokyo-Mitsubishi Bank added another 270 billion yen to their investment for Mitsubishi Motors, making the sum of their new support, including loans, a total of 540 billion yen. The former investment for the reconstruction was 496 billion yen; the total shares of supporting companies are now over one trillion yen. Mitsubishi Heavy Industry increased the rate of investment for Mitsubishi Motors to 15% and clarified their initiative for reconstruction support. The president of Mitsubishi Heavy Industry, Takashi Nishioka, became the CEO of Mitsubishi Motors. It is clear that the company continues to rely on its family (Mitsubishi group) as it has in the past.

On the other hand, the Ministry of Infrastructure and Transport decided to establish its own recall inspector system. The inspectors are ten ex-engineers of car manufacturing companies. They go to the scene of an accident if the accident seems to have been caused by some kind of structural defect. They observe the inspection process of manufacturers and at the same time they analyze the cause of the accident themselves. The Ministry of Infrastructure and Transport will ask manufacturers for recalls according to the results of their analysis.

It is, however, too late to make a recall after an accident has happened. The real solution for the problem is to maintain the ethic of manufacturing safe products. If there is a concern about safety, countermeasures should be made as soon as possible. This safety ethic is not only for the company as a whole, but it is also something that each engineer has to keep in mind.

The failure of a trailer truck's hub occurs due to metal fatigue. Mitsubishi Fuso studied extensively the fatigue life of the front hubs of heavy-duty trailer trucks. First, they reconsidered the viewpoint and procedure for evaluation of the fatigue life. Second, they changed the size and material of the hubs, using thicker flanges and larger notches to decrease stress concentration, and adopting a stronger FCD600 material. Finally, they evaluated the new hub and confirmed that its fatigue life is long enough for permanent use. This result was reported to the Ministry of Infrastructure and Transport in July 2004, and they made a recall to change the hubs to the new type. They are now investigating the rear hubs.

7. Knowledge

The biggest problem is that Mitsubishi Motors did not take further actions when the complaints that had been hidden by the company were revealed in 2000.

When a company does something wrong, the company president apologizes. However, the company does not always make what the president says in his or her apology come true. This event at Mitsubishi Motors showed the importance of making specific improvements.

The problem is the way of internal control of a company. This event revealed that lying always fails. The lies produced victims in society, and the company lost their credibility.

If a company believes that their customers would never abandon it, that company might become another Mitsubishi Motors someday. Executives have to rethink what is in the best interests of their company.

8. Sequel

On May 20, 2004, the president of Mitsubishi Fuso admitted the company's responsibility for the defects. However, Mitsubishi Motors had known about the defects eight years ago, but the company did not do anything about it. They kept making repairs secretly (which is illegal) for a while, and then they stopped even doing the repairs.

They reported that the total number of trailer trucks with defects was about 170,000 of the heavy-duty trailer truck "the great", which was produced from 1983 to 1996. Half of these trucks are still been driven. If the cracking occurs at the clutch housing, the propeller shaft will vibrate, and the vibration might lead to fracture of the brakes. There have been over 70 reports of defects in the products of Mitsubishi Fuso Truck & Bus Corp. and Mitsubishi Motors.

The following timetable shows how this event developed.

- June/1996

First fracture accident of a clutch.

- 1994

A person was injured in an accident in Kanagawa

- March-May/1996

Mitsubishi Motors held a meeting for considering a recall and discovered the defect in the clutches. They expected around 40 accidents to occur over 8-9 years, but they decided to make illegal repairs in secret.

- 1998

A person was injured in Nagoya

- July/2000

Disclosure of the cover-up of the defect in the clutches by Mitsubishi Motors. Mitsubishi Motors reported about 600,000 defective cars to the Ministry of Infrastructure and Transport. (Former cover-up case)

- Sep./2000

The Ministry of Infrastructure and Transport prosecuted Mitsubishi Motors on suspicion of violating the Road Trucking Vehicle Law (Former cover-up case).

- May/2001

The Tokyo summary court punished the executives of Mitsubishi Motors, including a vice-president. (Former cover-up case)

- Oct./2002

A refrigerated van lost control because of defects in its clutches in Yamaguchi prefecture. The driver died.

- May/2004

Mitsubishi Fuso Truck & Bus Corp. gave information about defects and reported recalls of defective vehicles to the Ministry of Infrastructure and Transport.

- 10/June/2004

Ex-executives of Mitsubishi Motors were arrested in connection with the fatal accident in Yamaguchi prefecture.

- 15/June/2004

The manufacturing headquarters of Mitsubishi Fuso lost its ISO 9001 certification because of the cover-up case. In the USA and Europe, most of companies request that their trading partners have ISO9001 certification. The reasons for canceling the ISO9001 certification of Mitsubishi Fuso are as follows:

- (1) The variation of the quality of products is wider than that required for certification.
- (2) Making repair in secret is illegal.
- (3) These facts have never been shown in screening.

- 18/June/2004

The Ministry of Infrastructure and Transport inspected 37 cases that resulted in accidents and/or burning. There were 140 cases involving 17 manufacturers in total. The first place belonged to Mitsubishi Fuso, which had 7 recalls and 85 accidents; in second place was Mitsubishi Motors with 6 recalls and 11 accidents. These members of the Mitsubishi family accounted for almost 70% of the cases. Mitsubishi Fuso had 52 accidents before reporting the hub defects and 21 accidents before reporting the clutch defect. Only two of the accidents were fatal.

Mitsubishi Fuso is expected to report another 40 recalls and Mitsubishi is expected to report another 25. As a result of postponing their response to the problems, the number of problems kept on growing.

- Oct./2004

First trial hearing for the Yamaguchi incident (at Yokohama district court)

- Dec./2004

Mitsubishi Fuso submitted measures for preventing a conceal knowledge of recalls. The Ministry of Infrastructure and Transport asked Mitsubishi Fuso for an additional report.

- Jan/2005

It was revealed that Mitsubishi Fuso had produced 2,800 brand new cars without certification, and 2,000 of them had defects and needed to be recalled.

- 2/Feb/2005

Mitsubishi Fuso reported another 41 defects, and they finished their inspection.

As described above, both the "tire hub fracture of trailer trucks" and the "clutch fracture of trailer trucks" originated in the "former cover-up case" in July 2000.

9. On the Side

There are many other examples of similar problems in Japanese big companies.

The compliance of a company involves not only obeying laws but also the actions that the company takes to enhance the compliance depending on the industry standard and the corporate culture. Experts of corporate compliance suggest the following two measures to prevent scandals.

- (1) Develop incentive to obey compliance

In Japan, the cost of compensation for a death is about 100 million yen. The cost of a recall is much more. In the USA, punitive damage is admitted. One solution for the situation in Japan is as follows: Permit companies in crisis with enough technology and manpower to obtain special funds for recalls under the condition that they obey compliance and make full disclosure.

(2) Establish a system for internal reporting and evaluation of information

Recent problems were revealed through internal reports. Executives have to get information about problems as soon as possible.

The following suggestion is added by authors:

(3) Establish performance requirements and make effective use of nongovernmental standard

Laws cannot maintain the security of society by themselves. People try to find ways to get around the laws. Governmental law is not enough. Companies should make their own regulations and obey them.

10. Primary Scenario

01. Poor Value Perception

02. Poor Safety Awareness

03. Lack of awareness of risks

04. Organizational Problems

05. Inflexible Management Structure

06. Acceptance of unreasonable demand

07. Malicious Act

08. Rule Violation

09. Conceal knowledge of recalls

10. Usage

11. Maintenance/Repair

12. No parts exchange

13. Defect of tire hub

14. Usage

15. Operation/Use

16. Trailer-truck

17. Failure

18. Fracture/Damage

19. Fatigue

20. Fracture of tire hub

21. Secondary Damage

22. External Damage

23. Drop of tire

24. Bodily Harm

25. Death

26. Fatal accident

27. Loss to Organization

28. Social Loss

29. Loss of reliability



Fig. 1 Typical "super great" tractor.

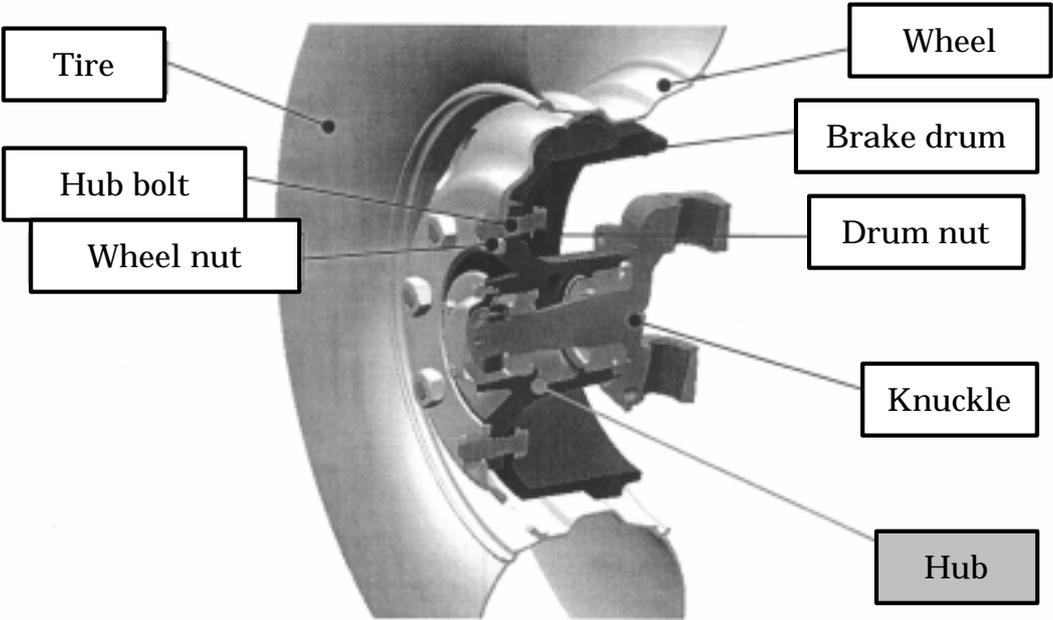


Fig. 2 Installation of a hub and a tire.

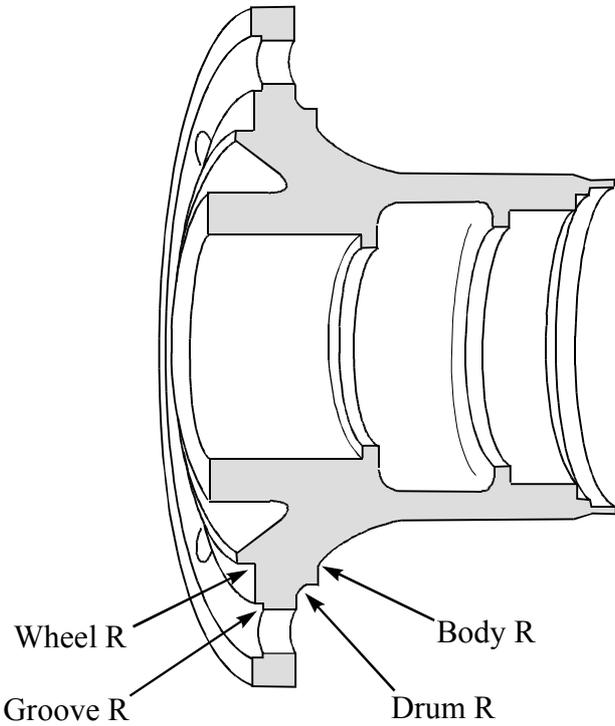


Fig. 3 Cross-sectional configuration of a hub.