

Kea Braekman

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ValueJet Essay

The article starts with the personal observations of Walton Little witnessing an airplane crash. His initial reaction is disbelief. Walton Little is important in this story because he is the person who reported the crash. The plane that crashed was a DC-9 aircraft from the ValuJet Airline. Aboard was 110 people, all of whom died in the tragedy. This incident caused flight safety agencies to rewrite and rethink safety requirements. The article then describes different types and causes of aircraft accidents, and they boil down to : Procedural, Engineered, and System accidents. The author then describes the hierarchy of flight safety agencies and procedures organizing the industry. Affordable airlines like ValuJet do not have safety as their primary focus. Their primary focus is profit. This puts the responsibility of flight safety in the hands of government agencies such as the FAA. In a way, this removes the responsibility of ValuJet for such an accident. Different theories regarding the cause of the accident arose : An electric failure, cabin pressure etc... The entire investigation was also responsible to share its progress with impatient journalists. After finding a blackbox, it was clear that there was an explosion in the aircraft, probably due to the oxygen generator system. The maintenance work was delegated to a company called SabreTech which itself delegated to contracted workers, often facing harsh work conditions, firing etc... Running through their process, SabreTech had not followed all the safety instructions precisely, as they failed to place the plastic safety caps over the firing pins. Because of understaffing, lack of time, and overall mismanagement, the

maintenance of the oxygen generator system was flawed. This mistake caused the oxygen system to spark and explode during the flight. The explosion then led to a fire, and then an electrical failure.

After the cause of the accident was discovered, the media and the public were looking for a culprit. It seemed pretty obvious that the free market competition and the excess of cost cutting went too far and was responsible for this tragedy. Many entities were to blame : ValuJet its subsidiary SabreTech, the airport ramp agents, and maybe even the crew. The conclusion of the article is that there is no system that is 100% safe. And there will always be deficiencies in safety for transportation and aircrafts. The solution is not to eliminate accidents, but to minimize their economic and especially human loss.

Thoughts : Although this assignment is unusual for computer scientists, it is eye-opening. Spending hours behind a computer writing code disconnects the developer from the end product and user. It is crucial for engineers to remember the implications their work has on consumers. When looking at this accident in particular, it is pretty obvious that there are opposed incentives from many different parties. The consumers want the cheapest ticket from Miami to Atlanta. ValuJet offers the cheapest tickets from Miami to Atlanta. Both these parties are in agreement (demand, supply). Although consumers are concerned with safety, it is usually not their initial concern as they believe in the safety of the airline industry. Following both these parties, comes the government agencies : FAA and NTSB. They have little to no regard for the affordability of flights. Their main concern is the safety of airlines. And then the last party is the media, whose incentive is to sell headlines. It is more profitable for them to report on a systemic safety issue

caused by airline executives greed, rather than reporting a detailed depiction of technical terms and failures. All these mixed incentives caused this incident.

This kind of situation is a good test case for managerial economics. Many components surrounding the crash failed. In order for airlines to be safe, safety agencies need to be as close to the technical issues as possible. However, this was not the case. ValuJet delegated its work to a subsidiary, which itself delegated its work to contractors. There are too many layers for error. The contractors gave faulty information to SabreTech, SabreTech gave faulty information to ValuJet, which then gave faulty information to the FAA. Obviously, the situation was out of hand. But what is the solution? Blaming the competition of the free market is wrong in my opinion. The free market is responsible for almost all of our affordable goods and services. Airlines fall in that category as well. I value my safety on a flight, but I also value that flight's affordability. The key to resolving such a situation is to have better oversight and transparency. There is a balance to find in oversight. More oversight reduces affordability and vice versa. At a macro level, the question is how many incidents are we comfortable with without making flights too expensive. At a micro level, the question is how can we ensure a transparent, efficient, and reliable information pipeline that ensures safety.

Similar situations can arise in a software environment. Developers want to find shortcuts and managers want to meet their deadlines. In order for a management team to be efficient, it is important for it to be as tight knit as possible. This may sound cliché, but it is easier for a team to build something if employees are not taking advantage of their manager's kindness, and if the manager isn't applying too much pressure on his/her employees. If a team works as an individual group with similar incentives (building reliable, efficient and safe software), it is a net benefit for

everyone. In order to facilitate such a system, there are management tools that exist. GANT charts, burndown charts, JIRA boards, agile trainings etc... Their goal is to maximize transparency between the manager and the employer. With these tools, managers can distribute work as fairly as possible and employees can communicate with their managers in case of blockers or issues.

The importance of a reliable transparent information pipeline cannot be overstated. It is essential. It takes more than economic factors to correct such management systems. It also takes a culture and social change within an organization.