Nasa case study

COLUMBIA SPACE SHUTTLE ACCIDENT Introduction In 2003 of February millions of observers were taken aback by the explosion of Columbia Space Shuttle as it approached the earth's environment. The disaster was found to be caused by a busted section of tubing containing padding suds at the outer side of the tank.

The resulting broken piece smashed a portion of the left wing. The impact damaged the thermal protection system of the entire spaceship. This thermal system supposedly protects the spaceship from the earth's atmospheric heat. In its flaw, the whole spaceship went into pieces and the tragedy cost the lives of all seven crews (Roberto, Bohner, and Edmondson, 2006).

Even without physical examination, a break on the tubing means an inappropriate strength of materials used, as it was not able to withstand the pressure. One could quickly suggest poor estimation, poor quality of materials, and the aircraft mechanics were not really proficient or experts, or simply that the material engineers and management were simply experimenting on strength of materials having taken the risk. In the first place, before the materials were used it should have been accurately tried and tested to efficiently serve the function from launch time to the time when the spacecraft could have safely landed back on its pad on earth

Body

Definitely, the tragedy of Columbia Space Shuttle in 2003 was a learning lesson for the National Aeronautics Space Administration. But, it could have been prevented. Obviously, minor problems should be given the highest attention for resolution. This means that considering the extreme risk of a space travel by a space craft, no single edge of flaw should be tolerated. In other words, there should be a zero flaw on space shuttle structure and function. Moreover, a spacecraft should not have been attempted launched even for a single or minor imperfection. A completed checklist on parts and function should have been confirmed and reconfirmed by the experts to get a 101% assurance of perfection before set off. There should be ‘ no rock left unturned’. Otherwise, there should be no room or space for ambiguity because everything can be calculated closest to precision considering previous projects of similar nature and the perspectives gained by the organizational manpower. In reality, the tragedy should not have happened (Roberto et al, 2006).

Gross negligence is a real management problem and not simple ambiguity. This is because this is a scientific undertaking which follows protocol scientific pattern of doing things. Extensive laboratory test are usually conducted on all materials prior to its employment. Thus, ambiguity can not be taken as a justification for the tragedy. Though some experts may suppose probable defects on human ability to recognize some extents of risk (Roberto et al, 2006), scientific undertakings like materials for spacecrafts capability to withstand the forces of nature are common engineering prowess. Otherwise, the crew must have been aware of the risk knowing that their mechanics were not perfect and that materials were not perfected accordingly.

Conclusion

The Columbia space shuttle mishap was the result of gross negligence on scientific pattern protocols. Ambiguities should not have been tolerated considering the extent of laboratory test on materials before its use, and management should have been firm and thorough considering the scientific nature of the project.

Reference

Roberto, Michael A., Richard M. J., Bohner, and Amy C. Edmondson. 2006.

Facing Ambiguous Treats. Harvard Business Review.

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