

MCROY AEROSPACE²

McRoy Aerospace was a highly profitable company building cargo planes and refueling tankers for the armed forces. It had been doing this for more than fifty years and was highly successful. But because of a downturn in the government's spending on these types of planes, McRoy decided to enter the commercial aviation aircraft business, specifically wide-body planes that would seat up to 400 passengers, and compete head on with Boeing and Airbus Industries.

During the design phase, McRoy found that the majority of the commercial airlines would consider purchasing its plane provided that the costs were lower than the other aircraft manufacturers. While the actual purchase price of the plane was a consideration for the buyers, the greater interest was in the life-cycle cost of maintaining the operational readiness of the aircraft, specifically the maintenance costs.

Operations and support costs were a considerable expense and maintenance requirements were regulated by the government for safety reasons. The airlines make money when the planes are in the air rather than sitting in a maintenance hangar. Each maintenance depot maintained an inventory of spare parts so that, if a part did not function properly, the part could be removed and replaced with a new part. The damaged part would be sent to the manufacturer for repairs or replacement. Inventory costs could be significant but were considered a necessary expense to keep the planes flying.

One of the issues facing McRoy was the mechanisms for the eight doors on the aircraft. Each pair of doors had their own mechanisms which appeared to be restricted by their location in the plane. If McRoy could come up with a single design mechanism for all four pairs of doors, it would significantly lower the inventory costs for the airlines as well as the necessity to train mechanics on one set of mechanisms rather than four. On the cargo planes and refueling tankers, each pair of doors had a unique mechanism. For commercial aircrafts, finding one design for all doors would be challenging.

Mark Wilson, One of the department managers at McRoy's design center, assigned Jack, the best person he could think of to work on this extremely challenging project. If anyone could accomplish it, it was Jack. If Jack could not do it, Mark sincerely believed it could not be done.

The successful completion of this project would be seen as a value-added opportunity for McRoy's customers and could make a tremendous difference from a cost and efficiency standpoint. McRoy would be seen as an industry leader in life-cycle costing, and this could make the difference in getting buyers to purchase commercial planes from McRoy Aerospace.

The project was to design an opening/closing mechanism that was the same for all of the doors. Until now, each door could have a different set of open/close mechanisms, which made

the design, manufacturing, maintenance, and installation processes more complex, cumbersome, and costly.

Without a doubt, Jack was the best—and probably the only—person to make this happen even though the equipment engineers and designers all agreed that it could not be done. Mark put all of his cards on the table when he presented the challenge to Jack. He told him wholeheartedly that his only hope was for Jack to take on this project and explore it from every possible, out-of-the-box angle he could think of. But Jack said right off the bat that this may not be possible. Mark was not happy hearing Jack say this right away, but he knew Jack would do his best.

Jack spent two months looking at the problem and simply could not come up with the solution needed. Jack decided to inform Mark that a solution was not possible. Both Jack and Mark were disappointed that a solution could not be found.

“I know you’re the best, Jack,” stated Mark. “I can’t imagine anyone else even coming close to solving this critical problem. I know you put forth your best effort and the problem was just too much of a challenge. Thanks for trying. But if I had to choose one of your co-workers to take another look at this project, who might have even half a chance of making it happen? Who would you suggest? I just want to make sure that we have left no stone unturned,” he said rather glumly.

Mark’s words caught Jack by surprise. Jack thought for a moment and you could practically see the wheels turning in his mind. Was Jack thinking about who could take this project on and waste more time trying to find a solution? No, Jack’s wheels were turning on the subject of the challenging problem itself. A glimmer of an idea whisked through his brain and he said, “Can you give me a few days to think about some things, Mark?” he asked pensively.

Mark had to keep the little glimmer of a smile from erupting full force on his face. “Sure, Jack,” he said. “Like I said before, if anyone can do it, it’s you. Take all the time you need.”

A few weeks later, the problem was solved and Jack’s reputation rose to even higher heights than before.