

The A7D Affair

Kermit Vandivier could not have predicted the impact on his life of purchase order P-237138, issued by LTV Aerospace Corporation.²¹ The order was for 202 brake assemblies for a new Air Force light attack plane, the A7D, and news of the LTV contract was cause for uncorking the champagne at the B. F. Goodrich plant in Troy, Ohio, where Vandivier worked. Although the LTV order was a small one, it signaled that Goodrich was back in LTV's good graces after living under a cloud of disrepute. Ten years earlier, Goodrich had built a brake for LTV that, to put it kindly, hadn't met expectations. As a result, LTV had written off Goodrich as a reliable source of brakes.

LTV's unexpected change of heart after ten years was easily explained. Goodrich made LTV an offer it couldn't refuse—a ridiculously low bid for making the four-disk brakes. Had Goodrich taken leave of its financial senses? Hardly. Because aircraft brakes are custom made for a particular aircraft, only the brakes' manufacturer has replacement parts. Thus, even if it took a loss on the job, Goodrich figured it could more than make up for it in the sale of replacement parts. Of course, if Goodrich bungled the job, there wouldn't be a third chance.

John Warren, a seven-year veteran and one of Goodrich's most capable engineers, was made project engineer and lost no time in working up a preliminary design for the brake. Perhaps because the design was faultless or perhaps because Warren was given to temper tantrums when criticized, coworkers

accepted the engineer's plan without question. So there was no reason to suspect that young Searle Lawson, one year out of college and six months with Goodrich, would come to think Warren's design was fundamentally flawed.

Lawson was assigned by Warren to produce the final production design. He had to determine the best materials for brake linings and identify any needed adjustments in the brake design. This process called for extensive testing to meet military specifications. If the brakes passed the grueling tests, they would then be flight-tested by the Air Force. Lawson lost no time in getting down to work. What he particularly wanted to learn was whether the brake could withstand the extreme internal temperatures, in excess of 1,000 degrees F, when the aircraft landed.

When the brake linings disintegrated in the first test, Lawson thought the problem might be defective parts or an unsuitable lining. But after two more consecutive failures, he decided the problem lay in the design: The four-disk design was simply too small to stop the aircraft without generating so much heat that the brake linings melted. In Lawson's view, a larger, five-disk brake was needed.

Lawson knew well the implications of his conclusion. The four-disk brake assemblies that were arriving at the plant would have to be junked, and more tests would have to be conducted. The accompanying delays would preclude on-time delivery of the production brakes to LTV.

Lawson reported his findings and recommendations to John Warren. Going to a

five-disk design was impossible, Warren told him. Officials at Goodrich, he said, were already boasting to LTV about how well the tests were going. Besides, Warren was confident that the problem lay not in the four-disk design but in the brake linings themselves.

Unconvinced, Lawson went to Robert Sink, who supervised engineers on projects. Sink was in a tight spot. If he agreed with Lawson, he would be indicting his own professional judgment: He was the man who had assigned Warren to the job. What's more, he had accepted Warren's design without reservation and had assured LTV more than once that there was little left to do but ship them the brakes. To recant now would mean explaining the reversal not only to LTV but also to the Goodrich hierarchy. In the end, Sink, who was not an engineer, deferred to the seasoned judgment of Warren and instructed Lawson to continue the tests.

His own professional judgment overriden, Lawson could do little but carry on. He built a production model of the brake with new linings and subjected it to the rigorous qualification tests. Thirteen more tests were conducted, and thirteen more failures resulted. It was at this point that data analyst and technical writer Kermit Vandivier entered the picture.

Vandivier was looking over the data of the latest A7D test when he noticed an irregularity: The instrument recording some of the stops had been deliberately miscalibrated to indicate that less pressure was required to stop the aircraft than actually was the case. Vandivier immediately showed the test logs to test lab supervisor Ralph Gretzinger. He learned from the technician who miscalibrated the instrument that Lawson had requested the miscalibration. Lawson later said he was simply following the orders of Sink and the manager of the design engineering section, who were intent on qualifying the brakes at whatever cost. For his part,

Gretzinger vowed he would never permit deliberately falsified data or reports to leave his lab.

A month later, the brake was again tested, and again it failed. Nevertheless, Lawson asked Vandivier to start preparing the various graph and chart displays for qualification. Vandivier refused and told Gretzinger what he'd been asked to do. Gretzinger was livid. He again vowed that his lab would not be part of a conspiracy to defraud. Then, bent on getting to the bottom of the matter, Gretzinger rushed off to see Russell Line, manager of the Goodrich Technical Services Section.

An hour later, Gretzinger returned to his desk looking like a beaten man. He knew he had only two choices: defy his superiors or do their bidding.

"You know," he said to Vandivier, "I've been an engineer for a long time, and I've always believed that ethics and integrity were every bit as important as theorems and formulas, and never once has anything happened to change my beliefs. Now this. . . . Hell, I've got two sons I've got to put through school and I just . . ." When his voice trailed off, it was clear that he would in fact knuckle under. He and Vandivier would prepare the qualifying data, then someone "upstairs" would actually write the report. Their part, Gretzinger rationalized, wasn't really so bad. "After all," he said, "we're just drawing some curves, and what happens to them after they leave here—well, we're not responsible for that." Vandivier knew Gretzinger didn't believe what he was saying about not being responsible. Both of them knew that they were about to become principal characters in a plot to defraud.

Unwilling to play his part, Vandivier decided that he, too, would confer with Line. Line was sympathetic; he said he understood what Vandivier was going through. But in the end he said he would not refer the matter to chief engineer H. C. "Bud" Sunderman, as

Vandivier had suggested. Why not? Vandivier wanted to know.

"Because it's none of my business, and it's none of yours," Line told him. "I learned a long time ago not to worry about things over which I had no control. I have no control over this."

Vandivier pressed the point. What about the test pilots who might get injured because of the faulty brakes? Didn't their uncertain fate prick Line's conscience?

"Look," said Line, growing impatient with Vandivier's moral needling, "I just told you I have no control over this thing. Why should my conscience bother me?" Then he added, "You're just getting all upset over this thing for nothing. I just do as I'm told, and I'd advise you to do the same."

Vandivier made his decision that night. He knew, of course, he was on the horns of a dilemma. If he wrote the report, he would save his job at the expense of his conscience. If he refused, he would honor his moral code and, he was convinced, lose his job—an ugly prospect for anyone, let alone a forty-two-year-old man with a wife and several children. The next day, Vandivier phoned Lawson and told him he was ready to begin on the qualification report.

Lawson shot over to Vandivier's office with all the speed of one who knows that, swallowed fast, a bitter pill doesn't taste so bad. Before they started on the report, though, Vandivier, still uneasy with his decision, asked Lawson if he fully understood what they were about to do.

"Yeah," Lawson said acidly, "we're going to screw LTV. And speaking of screwing," he continued, "I know now how a whore feels, because that's exactly what I've become, an engineering whore. I've sold myself. It's all I can do to look at myself in the mirror when I shave. I make me sick."

For someone like Vandivier, who had written dozens of them, the qualification report

was a snap. It took about a month, during which time the brake failed still another final qualification test, and the two men talked almost exclusively about the enormity of what they were doing. In the Nuremberg trials they found a historical analogy to their own complicity and culpability in the A7D affair. More than once, Lawson opined that the brakes were downright dangerous, that anything could happen during the flight tests. His opinion proved prophetic.

When the report was finished, copies were sent to the Air Force and LTV. Within a week test flights were begun at Edwards Air Force Base in California. Goodrich dispatched Lawson to Edwards as its representative, but he wasn't there long. Several "unusual incidents" brought the flight tests literally to a screeching halt. Lawson returned to the Troy plant, full of talk about several near crashes caused by brake trouble during landings. That was enough to send Vandivier to his attorney, to whom he told the whole sorry tale.

Although the attorney didn't think Vandivier was guilty of fraud, he was convinced that the analyst/writer was guilty of participating in a conspiracy to defraud. Vandivier's only hope, the attorney counseled, was to make a clean breast of the matter to the FBI. Vandivier did. At this point both he and Lawson decided to resign from Goodrich. In his letter of resignation, addressed to Russell Line, Vandivier cited the A7D report and stated: "As you are aware, this report contains numerous deliberate and willful misrepresentations which . . . expose both myself and others to criminal charges of conspiracy to defraud."

Vandivier was soon summoned to the office of Bud Sunderman, who berated him mercilessly. Among other things, Sunderman accused Vandivier of making irresponsible charges and of arch disloyalty. It would be best, said Sunderman, if Vandivier cleared

out immediately. Within minutes, Vandivier had cleaned out his desk and left the plant.

Two days later Goodrich announced it was recalling the qualification report and replacing the old brake with a new five-disk brake at no cost to LTV.

Aftermath:

- A year later, a congressional committee reviewed the A7D affair. Vandivier and Lawson testified as government witnesses, together with Air Force officers and a General Accounting Office team. All testified that the brake was dangerous.
- Robert Sink, representing the Troy plant, depicted Vandivier as a mere high school graduate with no technical training, who preferred to follow his own lights rather than organizational guidance. R. G. Jeter, vice president and general counsel of Goodrich, dismissed as ludicrous even the possibility that some thirty engineers at the Troy plant would stand idly by and see reports changed and falsified.
- The congressional committee adjourned after four hours with no real conclusion. The following day the Department of Defense, citing the A7D episode, made major changes in its inspection, testing, and reporting procedures.
- The A7D eventually went into service with the Goodrich-made five-disk brake.
- Searle Lawson went to work as an engineer for LTV assigned to the A7D project.
- Russell Line was promoted to production superintendent.

- Robert Sink moved up into Line's old job.
- Kermit Vandivier became a newspaper reporter for the *Daily News* in Troy, Ohio.

Discussion Questions

1. Identify the main characters in this case, and explain what happened.
2. To what extent did Lawson, Vandivier, and Gretzinger consider the relevant moral issues before deciding to participate in the fraud? What was their reasoning? What would you have done if you were in their situation?
3. How did Sink and Line look at the matter? How would you evaluate their conduct?
4. Do you think Vandivier was wrong to work up the qualification report? Explain the moral principle or principles that underlie your judgment.
5. Was Vandivier right to "blow the whistle"? Was he morally required to so? Again, explain the moral principles on which your judgment is based.
6. Describe the different pressures to conform in this case and discuss the relevance of the concepts of "groupthink" and "diffusion of responsibility." Do any of these factors excuse the conduct of particular individuals in this case? If so, who and why?
7. Should Goodyear be held morally responsible as a company for the A7D affair, or just the individuals involved?
8. What might Goodyear have done, and what steps should it take in the future, to ensure more moral behavior?