

# Ethics in Engineering and Technology: Two Case Studies

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I would like to illustrate two ethics cases related to engineering and technology. Many people may have the impression that ethics violations are limited to Wall Street corporations such as Enron, World-Com, and other high-profile corporations whose scandals have rocked the business community. Perhaps we think that such scandals involve only the financial officers of huge conglomerates. Although I hope and believe that, in general, those in the engineering and technology professions are committed to high standards of ethical behavior because of their role in public safety, it is clear we are not immune from the pressure that comes to bear on decision makers in both private and public sectors.

Recent ethical lapses occurred at two major, well-known engineering companies: Boeing and Siemens. I would like to balance the stories of these errors against some positive examples of Church members influencing their coworkers for good. Each of us must personally consider

this question: how can our graduates maintain ethical deportment in ways that may influence others to create or maintain appropriate ethical practices? This issue is not limited to work situations, of course, but it is applicable to personal behavior in all areas of our lives.

Boeing is one of the world's leading aerospace companies with financial interests in aircraft, of course, but also rotorcraft, missiles, satellites, and space systems. Sales in 2006 were sixty-two billion dollars. Boeing customers reside in 145 countries, and this firm represents the largest United States exporter in terms of sales volume. Some years ago I was pleased to learn on one of my visits that BYU was one of the top schools from which Boeing hires engineers. Boeing is a company with an illustrious history and many storied aircraft designs to its credit, including B-17 and B-29 bombers and the commercial fleet of 707 and 747 passenger planes.

A recent article in *Business Week*, however, did not focus on the company's legacy of engineering excellence. Rather, it focused on a spate of scandals over the past few years that have tarnished the company's image. The title of the article was "Cleaning Up Boeing" with the subtitle "Can outsider Jim McNerney rid the scandal-plagued aerospace giant of its rot?"<sup>1</sup>

In July 2003, the Pentagon stripped Boeing of one billion dollars in rocket launch business for possessing proprietary documents stolen from a competitor, Lockheed Martin. Nine employees were disciplined, while two were indicted. Boeing was suspended from doing business with the federal government for twenty months. In November 2003 chief financial officer Michael Sears was fired after discussing the possibility of a job at Boeing with Air Force Chief Acquisitions Officer Darleen Druyun while she was negotiating governmental contracts with the aerospace giant. Both Druyun and Sears later denied any such discussion, and after attempting to cover up the charge, both received prison sentences. In December 2003, Boeing CEO Philip Condit was asked to resign, in part because of the ethics scandals. Mr. Condit had

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1. Stanley Holmes, "Cleaning Up Boeing," *Business Week*, March 13, 2006, 63.

assured investors and board members that the publicized ethical lapses were isolated incidents limited to low-level employees. Out of concern that the acquisition process had been compromised, the government canceled an order in January 2004 from Boeing for twenty billion dollars in refueling tankers. In March 2005, CEO Harry Stonecipher was removed from office because of an inappropriate relationship with an employee that included improper use of company e-mail. Later that same year, Boeing settled a class action lawsuit charging that company officials knowingly underpaid female employees.

Another case involving ethical lapses involves one of Europe's best-known engineering companies, Siemens. In 2006, Siemens had over 480,000 employees and sales of 113 billion dollars. Its main business enterprises include power generation and distribution systems, factory automation, medical devices, telecommunications equipment, electronics, auto parts, and transportation systems.

A recent *Wall Street Journal* article reported that Siemens was no stranger to corruption scandals. In March 2006, German prosecutors charged two former employees of the power generation unit with offering 4.6 million dollars in bribes to win Italian natural gas contracts. U.S. authorities indicted a medical unit of Siemens in the same year, accusing the subsidiary of forming a sham business. Recently a United Nations-appointed panel accused three Siemens subsidiaries of paying kickbacks tied to the UN oil-for-food program in Iraq. In January of this year, Siemens was fined nearly five hundred million dollars by the European Commission for allegedly fixing market prices for electric-power-switching gear. The press reported: "Siemens says that it is cooperating with authorities and that any wrongdoing was confined to 'individual acts' by renegade managers. . . . Arrest warrants and detailed witness statements . . . suggest a different story. The statements, reviewed by *The Wall Street Journal*, depict a company where payment of bribes was common and highly organized."<sup>2</sup>

2. David Crawford and Mike Esterl, "At Siemens, Witnesses Cite Pattern of Bribery," *Wall Street Journal*, January 31, 2007; see also Mike Esterl, "Corruption Scandal at Siemens May Derail Restructuring Drive," *Wall Street Journal*, December 18, 2006.

## **Implications**

Clearly one conclusion we can reach is that engineering firms are not immune to ethics violations and challenges. One element of the scandals worth pondering is that in both cases the companies declared the problems were isolated incidents. In many respects, this may be true because the company has several hundred thousand employees. No doubt the majority of workers and company officers are ethical individuals. But this claim also turned out to be a means of denying the seriousness and pervasiveness of the problem. It appears that the attitude of some company officers condoned winning by whatever means possible.

I would like to discuss one element of these scandals in more detail: the stolen Lockheed Martin documents. This incident involved a former Lockheed Martin manager who came to work for Boeing, a primary competitor. He took with him approximately twenty-five thousand pages of documents, many with proprietary markings, from his former employer. About a dozen Boeing employees were shown some of these documents over a two-and-a-half-year period. It was only then that someone came forward to expose what had taken place. A Boeing official asked, "How could you have that many documents floating around and nobody said anything? . . . Was there a culture of 'win at any cost?'" If that was indeed the case, the price turned out to be incredibly high. The incident cost Boeing one billion dollars in government business, and Lockheed Martin is seeking two billion dollars in damages.<sup>3</sup>

It was obvious that in this case it was not a mistake made by one person with a cognitive lapse; rather, a substantial group of people were involved in this scheme for over two years.

## **Good Examples**

Having noted ethical lapses at two large companies, we will consider some positive examples that have taken place. Two of these examples do not necessarily deal directly with ethics violations, but rather illustrate how

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3. Stanley Holmes, "Cleaning Up Boeing," 68.

a member of the Church acted in a way that had a positive effect on others. The first is, appropriately, an experience that took place at Boeing.

Some years ago I attended a dinner in Seattle that was sponsored by the aerospace giant. I was seated next to a Boeing executive whom I did not know. We began a conversation, and I learned that he had grown up in a rough part of Philadelphia. Many of his friends had dropped out of school and were pulled into drugs or other illegal activities. Somehow he had escaped this route, graduating first from high school and then college. He was now a successful executive with the company. Upon learning I was a Latter-day Saint, he mentioned that a member of our faith had had a big impact on his life.

Curious about his comment, I asked him to explain. He said the individual was a secretary who worked for the group of engineers on one of their projects. He said that because of her, he decided he should clean up his language. I was intrigued and asked him whether she had mentioned to him that his language was offensive to her. He said she had not approached him directly, adding, "It was just the way she treated people. It was the way you felt when you were around her. I just felt I shouldn't swear anymore, and so I resolved to stop."

I don't recall the name of this secretary. He mentioned she was married to another Boeing employee, and they had been transferred to another division. She probably has no idea of the effect she had on this man. But I have thought of this incident a number of times over the years and wondered what she did. How was she able to impact someone else to change a behavior simply by the way she treated others? Her example is even more significant because she was in a subordinate position with little authority or power. Clearly, there was something special about how she treated others.

A second example concerns my son-in-law, Kimball Herrod, who worked for a health-care consulting company in Los Angeles. He felt this was a good place for employment, and it would provide experience he needed to move into hospital administration, which he eventually did. There was only one other Church member in the relatively small firm. As in any company with a number of employees, there were challenging personalities. The president of the company was often verbally

abusive toward the employees. He occasionally went into anger tirades and publicly embarrassed one of the workers. Kimball struggled with this kind of behavior and asked himself, Should I say something? Should I confront my own boss? After pondering and discussing the matter with the other Church member, he decided not to confront his supervisor. He felt such a course of action would most likely make things worse for everyone or result in losing his job. So he did not say anything but did the best he could. Recently another job opportunity came along, and Kimball left the firm on good terms.

Two years ago, sadly, Kimball was killed in an auto accident. My daughter was told by her friends who worked at Kimball's old firm that when his former boss heard the news, he broke down sobbing, "How could this be? Kimball was always the person who tried to do what was right." He had, after all, impressed his former boss with his efforts to live the gospel.

The third example comes from an address given in a recent general conference by Bishop Richard C. Edgley. He related this story:

Some 30 years ago, while working in the corporate world, some business associates and I were passing through O'Hare Airport in Chicago, Illinois. One of these men had just sold his company for tens of millions of dollars—in other words, he was not poor.

As we were passing a newspaper vending machine, this individual put a quarter in the machine, opened the door to the stack of papers inside the machine, and began dispensing unpaid-for newspapers to each of us. When he handed me a newspaper, I put a quarter in the machine and, trying not to offend but to make a point, jokingly said, 'Jim, for 25 cents I can maintain my integrity. A dollar, questionable, but 25 cents—no, not for 25 cents.' . . . A few minutes later we passed the same newspaper vending machine. I noticed that Jim had broken away from our group and was stuffing quarters in the vending machine. I tell you this incident not to portray myself

as an unusual example of honesty, but only to emphasize the lessons of . . . a 25-cent newspaper.<sup>4</sup>

I am impressed with the way Bishop Edgley handled the situation. With a sense of humor, he maintained his own standards and yet diffused what could have been a difficult situation. Even though twenty-five cents was a small matter, he was determined not to let the incident go by.

## **Recommendations**

Based on these case studies and examples, what recommendations can we make to graduates of this college and institution going out into the world community? Here are a few suggestions:

First, ethics is your personal responsibility—not someone else's. If you decide that ethical behavior is an issue for everyone else but you, that you are lost in a large conglomerate with no influence on others, please rethink the matter. I find it sobering that after Boeing's CEO Condit said any ethical problems at Boeing involved only low-level employees that he, his successor, and the CFO were dismissed due to ethical concerns.

Second, our commitment to Church membership and its principles is not enough to lean on because ethical situations are not always black and white or couched in spiritual terms. They can be quite confusing and subtle. It is important that each of us is familiar with the policies and practices of our employer. But more important, each individual needs to be aware of and sensitive to ethical questions and be committed to stand by principle in difficult circumstances. Let me share three potential case studies that come directly from Boeing's excellent ethics manual. They are available on the Web site [http://www.boeing.com/companyoffices/aboutus/ethics/ethics\\_booklet.pdf](http://www.boeing.com/companyoffices/aboutus/ethics/ethics_booklet.pdf).

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4. Richard C. Edgley, "Three Towels and a 25-Cent Newspaper," *Ensign*, November 2006, 73.

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*Question 1.* “I just found what looks like some information that our competitors left behind. It is not obvious that this information is properly in our possession. Can I keep a copy of it?”<sup>5</sup>

*Question 2.* “I used to work for XYZ Company, a current competitor to Boeing. Can I brief my team on XYZ’s proposal strategies?”<sup>6</sup>

*Question 3.* “While waiting to attend a proposal meeting, I overheard a conversation that a procurement officer had with one of our competitors. The competitor told the procurement officer about his product’s specifications and costs. Can I still attend the meeting? Can I write a similar proposal and send it to the officer with a lower bid?”<sup>7</sup>

The Boeing ethics manual suggests these responses to the three situations.

*Question 1.* “No. Do not read the document or information any further and do not show it to anyone associated with the program. The document or information must be immediately sealed and provided directly to an Ethics Advisor or the Law Department to determine what steps should be taken.”<sup>8</sup>

*Question 2.* “No. You have a commitment to protect confidential information of your former employer, and that commitment does not cease when you leave that company. Boeing does not want information that it does not have a right to have. You need to disclose your prior relationship to your immediate manager and to abide by all obligations of confidentiality owed to your former employer.”<sup>9</sup>

*Question 3.* “The answer is NO to both questions. You cannot take advantage of the information in any way. You should politely excuse yourself from the meeting and contact an Ethics Advisor, the Law Department, or Contracts immediately and avoid any disclosure of the information to individuals connected with the program or proposal. As an individual, you will probably have to withdraw from the bid team,

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5. Boeing, *Ethical Business Conduct Guidelines*, 11.

6. Boeing, *Ethical Business Conduct Guidelines*, 11.

7. Boeing, *Ethical Business Conduct Guidelines*, 13.

8. Boeing, *Ethical Business Conduct Guidelines*, 11.

9. Boeing, *Ethical Business Conduct Guidelines*, 11.



but you have done your best to protect the ability of Boeing to go forward.”<sup>10</sup>

These questions and responses illustrate the point that ethical situations are not always clear-cut but that they come in a number of shades of gray. It is important that you familiarize yourself with your company policies and be aware of ethical issues and situations that may arise.

Third, what might be appropriate in one situation may not be appropriate in another. Kimball, my son-in-law, felt at the time that he should not challenge the boss over his verbal assaults. However, in a different situation, the appropriate response may have been different.

Fourth, in our ability to influence others for good, the phrase that comes to mind is “firm humility.” It is firm in the sense that you do not compromise on what you know is right and wrong. Though feeling awkward, Bishop Edgley would not accept a stolen newspaper, even if it was only worth twenty-five cents. When we recognize something as wrong, we need to be firm.

But humility is also called for—humility in the sense that as we attempt to influence others for good, we do so humbly and without an attitude of self-righteousness.

From Alma 27:27, we find a description of the people of Ammon that is worthy of attention: “And they were also distinguished for their zeal towards God, and also towards men; for they were perfectly honest and upright in all things.” This scripture could easily be our personal mission statement in our relationships with employers and other employees and in our roles as consumers, Church members, and members of our own households.

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10. Boeing, *Ethical Business Conduct Guidelines*, 13.