

# Some Recent Engineering Ethics Cases

Stephen H. Unger

## Infants Under Pressure

Sam Wilson, an experienced engineer was employed by MedTech, a company that made medical equipment. An important line of products were respirators, used in hospitals. A colleague of Sam asked him to check out one of these respirators, one designed for infant use. He soon determined that a relief valve intended to protect against overpressure being applied to the infant's lungs was incorrectly placed, so that, under certain circumstances, the infant could experience dangerously high pressure. Correcting the error would not be difficult, since all that was needed was to reposition the relief valve. In similar circumstances in the past, Sam had seen such problems handled with dispatch. He called the matter to the attention of the appropriate manager and assumed that it would be taken care of.

A month or so later (Sam was not directly involved with this particular device) he learned that nothing had been done. Hundreds of these devices were already in use, and Sam was concerned about the increasing likelihood of a tragic event. He went back to the manager and urged him to take appropriate action. When the manager fended him off, Sam said that if prompt measures were not taken to correct the problem he would have to report it to the cognizant regulatory agency. The response of MedTech was to fire Sam. Apparently the then current president of MedTech did not have the same attitude toward product quality that had been prevalent in the past.

At about the same time, the respirator problem was identified by a physician who had encountered one in hospital practice. Sam brought suit against MedTech for wrongful discharge, claiming that his actions in calling attention to the problem were mandated by the code of ethics that binds professional engineers. Sam is a licensed PE.

Various management changes have since occurred and the legal process is slowly moving along.

## Using Other People's Software

Jim Warren was a senior software systems expert, hired by NewSoft, a start-up company, to help in the development of a new product. He soon learned that the product was based on proprietary software for which NewSoft did not have a license. Jim assumed that this was some sort of mistake and spoke to the company president about the matter. He was assured that the situation would be rectified. But time passed and nothing happened except that Jim found other instances of the same practice. Repeated efforts to get NewSoft to legalize its operations failed and Jim, after threatening to notify the victimized companies, was discharged.

Law enforcement officials were brought into the picture and lawyers on all sides began negotiating. At this date it is not clear whether criminal charges will be filed. There appears to

be a strong possibility of some sort of out-of-court settlement among the companies involved. It is not clear how this will ultimately affect Jim Warren.

## Intensive Care

George Ames, a young software engineer worked for a hospital computer department. He was assigned to work with the people in the intensive care unit (ICU). The computer group was working on the interface between a piece of commercial data processing software and various units in the ICU, including real-time patient monitoring devices.

From the manager down, the computer group was not technically up to the mark in experience or in education. They were falling significantly behind schedule. George learned that they were seriously considering cutting back on testing in order to close the schedule gap. Appalled at this idea, George argued strongly against it. In this case, his arguments had some effect, but he was nevertheless given the clear impression that his prospects with this organization were now significantly impaired. Apparently, part of the problem had to do with a reluctance on the part of higher management to clash with the physician who headed the computer group. George felt that the basic problem was incompetence and he did not see how he could be effective on his own in combating it.

## Making Good Wafers Look Bad

Don Fisher, an electrical engineer, worked for Dicers, a company that purchased wafers for microprocessor chips from another company and then diced, packaged, and sold them. Don was assigned the task of testing these wafers. After a while, he was instructed by his manager to alter the testing process in such a manner that the quality of the purchased wafers was made to seem lower than it really was, which had the effect of the lowering the price paid. Don objected to this practice and refused to go along. Eventually, he was discharged.

## Air Bags

SafeComp is a company that, among other things, designs and makes sensing devices for automobile air bags. Bob Baines was hired to work in the quality control department. About six weeks after starting work, he was asked to sign off on a design that he felt very uncertain about. He checked with people involved in the design and found the situation, at best, ambiguous.

Bob told his manager that he would not feel right about signing off, and, since he was relatively inexperienced with SafeComp's procedures, asked that he not be required to do this. His manager kept applying pressure. Eventually, Bob decided that he wished neither to violate his principles by doing something that he thought was wrong, nor to become involved in a battle in which his career would certainly be major casualty. He quietly resigned.

Source: <http://www.onlineethics.org/cases/unger.html>