Lea Stewart's Commentary on "Shortage of Components"

Commentary On
Shortage of Components

Tim Vinson has a problem. He has promised to fill an order for small machines by Friday, and he learns on Wednesday that he does not have a sufficient supply of a new component for the machines. The customer insists that the deadline be met. Tim thinks of three options: breaking up and regrinding an old component, replacing the new component with an old one, or talking to the design engineer. The first option concerns him because he is not sure that the process can be done without introducing impurities. He believes the second option could meet minimal safety and durability standards even though it is not what the customer ordered. The first two options listed by Tim have clear ethical implications.

The first option involves using a process that may introduce impurities. This could pose a safety hazard. Tim is right to dismiss this idea. Although the second option apparently does not pose the same type of safety problem, it is clearly not what the customer contracted for. Is it ethical to fill an order that does not meet the customer's reasonable expectations? In this case, Tim chooses a less expedient but probably more ethical approach. He speaks to the design engineer about the problem. Unfortunately, the design engineer cannot think of any creative solutions to the problem, and he is unwilling to take responsibility for the outcome of either of the first two solutions. The design engineer suggests that Tim talk with the Vice President of Product Engineering, Arnold Peterson. Tim is reluctant to talk with Arnold because he feels responsible for not knowing about the problem earlier. This is a typical problem in organizations. Employees are reluctant to pass "bad news" up the organizational hierarchy. They are unwilling to tell their supervisors about information that might have negative consequences for their jobs. Unfortunately, because of this reluctance, managers sometimes do not get the information they need to make good decisions.

If Arnold is unwilling to listen to Tim's problems and tells him that he has to handle the situation himself, Arnold has just reinforced poor communication practices in his organization. He is encouraging his employees to hide information from him if it is bad news. Sometimes, however, a manager needs to know all the bad news in order to made good decisions. Arnold needs to know why Tim cannot get the components that he needs to finish his job so that the situation can be avoided in the future. Arnold needs to know if there is a problem in his organization or if the problem is with suppliers. If he doesn't know about the problem, it can't be prevented in the future. Arnold also has cut off lines of communication to the customer. If he tells Tim that "Parker doesn't want to hear about this," he assumes that the customer is unwilling to deal with problems as they occur. He is assuming that the customer would rather have sub-standard machines than be told the truth. This assumes that the customer has rather low standards for quality. Tim's assumption that Arnold would not want to be bothered by this problem is a clear indication of a poor communication climate in this organization. Many companies would feel that it is Arnold's job to be bothered by problems.

If management cannot be bothered by problems, who will solve them? Because of his unwillingness to speak with Arnold, Tim substitutes an old component in the new machine. From an ethical standpoint, it really doesn't matter if Arnold or the customer discovers the substitution. In fact, it doesn't really matter if the substitution is never discovered. Tim has acted unethically and perhaps illegally. He has substituted a part and delivered a machine that does not meet the company's expectations for a totally new machine. The customer has paid for a new machine, but has received machine with an old and discarded component. Presumably there was a reason for the new component, and the customer had the expectation that the machines would be the most up-to-date model. Thus, there is no excuse for cutting corners and using an old part. Some ethical theorists would say that the end justifies the means.

In other words, if the machines worked satisfactorily with the old component, there would be no harm done. You might agree with this analysis, but in this case there was no way of testing this assumption until after the machines were delivered. Do the ends justify the means if you are not exactly sure what the ends will be? Part of the difficulty in this case seems to be the reluctance of anyone to talk with a representative of the customer. Granted, relations between Ruskin Manufacturing and Parker Products are not totally positive since Ruskin has already missed one

deadline. Nevertheless, Parker Products might be willing to take the machines with the old component for a slight discount. Perhaps Tim could speak with a member of the sales staff to see if this option is possible.

This case is a clear example of how a poor organizational climate can contribute to unethical decision making. Tim makes a poor choice because he feels that his supervisor is not open to hearing negative information. Perhaps if Arnold had worked harder to create a more positive communication climate in his organization Tim would not have been faced with this dilemma. This is a tough situation for Tim Vinson to be in and it appears that he is not getting appropriate guidance from either Chuck Davidson, the chief design engineer for the product nor Arnold Peterson, Ruskin's Vice President of Product Engineering.

In the discussion that follows it is assumed that since "minimal safety and durability standards" would be met that there is therefore no risk to public safety involved. What is of direct concern here is the reputation of Ruskin Manufacturing as a company with integrity and Tim Vinson's reputation as head of quality control. The NSPE code of ethics says in "Professional Obligation" number III-3 that "Engineers shall avoid all conduct or practice which is likely to discredit the profession or deceive the public." Incidentally, regarding this quotation, many would be comfortable with substituting the word "Companies" for "Engineers" at the start of the statement. The reasoning is that the actions of companies are really the actions of individuals working for that company, so the strictures against individual actions are interchangeable with strictures against the company.

In that light, Chuck Davidson and Arnold Peterson are just as culpable as Tim Vinson if they fail to support Tim in the appropriate way, especially when subsequent events prove to be negative. Although we can not possibly predict with precision the consequences of our actions as professionals, we can certainly anticipate some likely scenarios. Perhaps the most serious outcome of Tim regrinding the remaining supply of the old component (the situation in phase I-1) is phase IV of the case where Tim has to subsequently meet with Arnold Peterson and a Parker representative to explain why several of the machines had to be returned because the part in question did not perform up to expectations.

At this point Tim can dig his hole deeper by playing dumb and lying, or confess that he (or he with Chuck Davidson's support) earlier cut some corners to meet the deadline. The most likely outcome of this meeting will be Tim's forced resignation if

he confesses, or his lack of future credibility as head of quality control if he lies. In either case he stands guilty of violating the third "Fundamental Canon" of the NSPE code of ethics, "Issue public statements only in an objective and truthful manner." If Vice-President Arnold learns of Tim's substituting the old component in place of the new one prior to any complaints from Parker and calls Tim into his office to explain (phase III-version 2 of the case), Tim is just as equally on the spot as if Parker had complained. Tim has the same two options as in the previous paragraph; a lose-lose situation.

In version V, it would appear that Tim has gotten away with the substitution because "neither Parker nor anyone else outside of Ruskin ever finds out." Even here there is a lingering problem. Tim himself knows what he did and in all likelihood so do a number of the assembly line workers at Ruskin who had to regrind the material and substitute the part. It is problematical whether Tim's colleagues and subordinates will ever feel the same about him as head of quality control at Ruskin. One is reminded of the quality controller in the "Truesteel Affair" Canadian TV tape who lost the confidence of all his coworkers because he missed catching a vitally important assembly error. Once the word leaks out that a quality controller has not exercised prudent caution, that controllers reputation is irrevocably damaged. It would seem that there are at least two other options that may be open to Tim.

First, when initially discussing the situation with either Chuck Davidson or Arnold Peterson, Tim could suggest getting Parker involved early on the decision of what to do about meeting the deadline. For example, Tim could suggest that Parker be offered four options:

1. Accept the machine with the old components ground up to produce replacements (albeit some potentially impure parts) for the ones in short supply (version I-1 but with notification to Parker.)
2. Accept the machine with the old components in place of the new one (version III-2, but with notification to Parker).
3. Accept the machines, correctly made, but late; perhaps with some negotiated penalty.
4. Sever the contractual relation between Ruskin and Parker. What is at risk here is losing Parker's business.

What is gained is informed consent by Parker and the absence of any deceit or subterfuge. If, as Arnold says, "They (Parker) also made it very clear that we've

(Ruskin) had it if we don't meet the deadline this time", perhaps that is the price that must be paid for maintaining professional standards. Indeed, if Parker cancels the contract Tim may still be asked to resign, but at least he is not under a cloud. Also, Ruskin in this scenario maintains its integrity and its reputation for being professionally responsible.

There is one final option available to Tim that is not mentioned in this case. If, after making his initial mistake in not catching the problem earlier, Tim feels that the support he is getting from Chuck Davidson or Arnold Peterson is unsatisfactory, he can resign then and there. There are many jobs in many locales, but each of us has only one chance at establishing our own character and integrity. In this regard, let me close with a personal anecdote. I used this case (with permission) on a midterm examination in an "Ethics and Engineering" elective course I taught recently. After the exam, one of the better students in the class came up to me and complemented me on the reality of the question. When I asked him why he thought so, he replied that a similar situation occurred on the last job he had. When I asked him what he did in the circumstance, he replied, "I'm a full-time student now, aren't I?"