

# CONTAINERS

## Background

Axtell, Inc. designs, manufactures, and installs large containers designed to store highly active chemicals. These containers require strong, reliable safety seals to prevent spills and leakage, precision temperature control units, and an automated valve system to control inflow and outflow.

For several years Axtell only manufactured the containers. Its major customers installed them without supervision from Axtell. However, recent automated design innovations require intricate installation procedures. Mistakes can be very costly, ranging from damaged machinery and interrupted workflow to serious injury to workers. So, Axtell now sends engineers to each site to supervise installation.

As chief engineer of Axtell's Installation Division, Howard Hanson manages the installation supervisors. He is proud of his division's record during his five years on the job. There have been only two reported incidents of serious accidents involving Axtell containers. Both were determined to have resulted from negligence on the part of chemical companies rather than any flaws in the containers.

Axtell's good record is in no small way attributable to the work of Howard's division. Although the supervisory work is tedious, Howard insists that his engineers carefully supervise each phase of the installation. There are times when the workload is so heavy that it is difficult for the engineers to meet installation deadlines; and occasionally customers apply pressure on Axtell to be allowed to install containers without Axtell supervision. But, Howard realizes that quality, and perhaps even safety, may be compromised without proper supervision. Furthermore, he is concerned to minimize Axtell's legal liabilities. So, he has a motto on his office wall: "Better late than sorry!"

Normally only one Axtell engineer is sent to an installation site. But because the installations require several complex procedures, Howard has the work of new engineers double-checked by veteran engineers for the first month on the job. The veteran supervisor's job is to coach and monitor the newcomer's supervision as they oversee the installation together. Each container is given a dated inspection number that can be traced to the engineer. Those that are double-checked are given two numbers, one traceable to the new engineer, the other to the veteran engineer. Axtell's requirement that new engineers have a one month training period was Howard's idea. Although he realized that it was not required by law, Howard convinced Axtell management that having such a requirement would enhance quality and safety.

## Scenario #1

Tom Banks was in the last week of his one month trial period. He had been working with veteran engineer Charles Yost during the entire trial period. It was clear to Charles from the very first week that Tom had a real knack for thorough, efficient supervision. It seemed apparent to both of them by the end of the third week that Tom was more than ready to "go it alone." But, they reminded themselves that "rules are rules;" the training period is a full month. So they would have to stick it out for the full trial period.

At the beginning of the final week Tom noticed that Charles seemed somewhat lethargic and inattentive. When he asked Charles if he was all right, Charles replied, "I'm just a little tired. I've been under a lot of pressure lately, and it's been cutting into my sleep." Tom suggested that Charles take a couple of days of sick leave to get rested. "We can ask Howard to assign someone else to me for these last couple of days." Charles replied that he had

exhausted his sick and vacation leave time for the year and that he was too financially strapped to lose any pay. "Besides," he said, "Howard doesn't have anyone available to replace me this week, and this job can't wait. These guys are already champing at the bit." By Friday Charles was too ill to concentrate on his work.

Tom suggested that Charles go home for the day. But Charles replied, "I thought about staying home today, but I just can't afford it--and we have to get the job done this week anyway. I'll get some rest this weekend, and I'll be fine next week. We can get through today all right. Look, next week you're on your own anyway. I've been checking your work for three weeks. You're the best supervisor I've ever seen around here. Don't worry, you can handle it. Give 'em a good look and I'll just put my tag on."

What should Tom do?

- 1) Cover for Charles and carry out the supervision by himself.
- 2) Stop the inspections and tell Charles that they need to talk to Howard.
- 3) Other.

## **Scenario #2**

[Following Scenario #1, choice 1).]

Tom Banks covers for Charles. The scene shifts to several months later. Nearly a year has passed since Tom Banks came to work for Axtell. Tom has been doing very well and is now being considered for Charles Yost's position. Tom had been concerned about Charles's health for some time. Still, it came as a shock to him when Charles died from a massive heart attack just two weeks ago.

Unfortunately, only ten days after Charles' funeral, Axtell received a complaint from Cameron Chemical charging that several of Axtell's containers have serious leakage problems. Three workers have been hospitalized because of exposure to the leaking chemicals, and several pieces of valuable equipment have been seriously damaged. Cameron plans to sue Axtell for supplying defective equipment. Axtell's attorneys, on the other hand, plan to argue that the fault must lie elsewhere (Cameron's storage facility, improper handling of the containers, or perhaps even sabotage). They plan to cite Axtell's excellent record and its rigorous installation supervision.

Howard is sent to Cameron to inspect the leaking containers. He finds two inspection numbers on each of the three containers. He is able to trace the first number on each container to Tom Banks, whom he regards as one of his best young supervisors. He traces the second number to Charles Yost.

Although, obviously, he cannot talk with Charles Yost, Howard decides he should talk with Tom Banks. As they talk, they determine that the installation of the containers was completed on the last day of Tom's trial period. Suddenly Tom remembers that Charles had not been feeling well near the end of that week. Tom remembers thinking about asking Howard if he could replace Charles with another supervisor, but he agreed with Charles that he was more than ready to "go it alone." Besides, he felt that going to Howard would only cause problems for Charles, not to speak of causing problems with an anxious customer. So, he decided to double-check everything himself.

So far, Tom is recalling this only to himself. What should he say to Howard?

- 1) He should say nothing to Howard about departing from the regular routine.
- 2) He should tell Howard about departing from the regular routine.
- 3) Other.

**Option 1) [Scenario #2]**

Tom tells Howard nothing about the departure from the regular routine. Tom is then asked by Howard to testify in court that standard procedures were followed. What should Tom do now?

- i) Agree to testify, but still tell nothing to Howard about the departure from the regular routine.
- ii) Tell Howard about the departure from the regular routine, and let him decide what should be done next.
- iii) Other.

**Option 2) [Scenario #2]**

**Version I**

Tom tells Howard about departing from the regular routine. Howard says, "That's not what I want to hear. I want you to testify in behalf of Axtell. But keep this stuff to yourself!" What should Tom do now?

- 1) Tom should do what Howard says.
- 2) Tom should agree to testify, but refuse to lie in court.
- 3) Tom should refuse to testify unless called by the opposing side. If he is called, he should refuse to lie.
- 4) Tom should talk with Axtell's attorneys, telling them what he has told Howard, as well as Howard's response.
- 5) Other.

**Version II**

Tom tells Howard about the departure from the regular routine. Howard then reports this to Axtell's attorneys. They tell Howard to keep quiet about this and not to volunteer information about who supervised the installations. They hope that the Cameron will not ask Tom to appear in court; but if they do, the attorneys will "coach" Tom. Discuss.

**Scenario #3**

[Following Scenario #1, choice 2).]

Tom calls Howard about Charles' inability to work on Friday. Howard has no one to send to replace Charles for the day. But he has already assured Cameron that the installation will be completed on Friday. What should Howard do?

- 1) Tell Tom to complete the work, as Charles suggested.

2) Stop the installation until a replacement for Charles can be found.

3) Other.

[If 1) is selected, think through what the likely outcomes might be. Earlier scenarios might be helpful--adding now that Howard is "in the know" from the beginning. What should Tom be prepared to tell the attorneys and the court if asked to testify? What should Howard tell the attorneys and the courts? If 2) is selected, trace out some consequences--e.g., Cameron loses \$25,000 because of the delay. Axtell offers to compensate Cameron for that amount.]

#### **Scenario #4**

[Following Scenario #1, choice 1 & 2, and Scenario #2]

Tom clearly has violated the standards set by Howard. What, if anything, should Howard do about this? Does it matter how Howard learns of this violation? (E.g., suppose Tom told Howard when he and Howard first discussed the problem at Cameron. Suppose Howard learns of this only after asking Tom to appear in court. Suppose Howard learns of this through one of Tom's co-workers.)

### **COMMENTARIES**

#### **Kenneth L. Carper**

Sometimes the ethical conflicts faced by employees result from flawed management practices. Before discussing Tom Bank's dilemma, it will be useful to explore Axtell's management policies, since they have contributed to the dilemma.

Axtell, Inc. maintains installation policies that exceed legal requirements for manufacturers of chemical containers. It also appears that these policies exceed the normal standard of care exercised by Axtell's competitors. The extraordinary attention given by Axtell management to safety is commendable, and these policies are partly responsible for the successful reputation enjoyed by the company.

Many product manufacturers fail to provide the quality of onsite service provided by Axtell. The problem of improperly installed equipment has become a major risk to safety in the workplace. As products become more technically sophisticated, proper installation has become more critical. This is especially true for toxic material containers and other equipment related to hazardous chemicals and processes, where there is the potential for costly damage or serious injuries.

Howard Hanson is proud of the safety record of his installation division. He insists on sending an engineer to each project to supervise the installation, even when customers would rather proceed without such supervision. This creates a demanding workload for his installation engineers, and they are often working under pressure. Howard refuses to compromise quality under these circumstances, and his installation engineers bear the brunt of the resulting frustrations expressed by impatient clients.

Howard Hanson's personal commitment to safety is responsible for the policy in question in this case. He requires all new engineers to be supervised by a veteran engineer for their first full month on the job. This policy is not a legal requirement, nor is it a longstanding policy of the company. The policy is consistent with the company's desire for enhanced quality and safety, and it is on this basis that Howard was able to convince Axtell

management to adopt the policy.

One cannot fault Howard for his commitment to safety. However, it appears that his policies are creating unrealistic expectations for his subordinates. While engineering managers do have ethical responsibilities to their clients and to the general public, they also have responsibilities toward their employees (Firmage 1989). The safety record of Axtell is built on the backs of overstressed, overworked installation engineers.

The underlying source of the moral conflict here is that the Axtell installation division is understaffed. The workload pressures are immense, and there is no personnel backup to support the commendable policies developed by Howard Hanson. When the case was made for this new policy, he should have insisted on increased personnel to support the new policy with adequate personnel.

Tom Banks is working on the last day of the last week of his first month as an installation engineer. Charles Yost, the veteran engineer he has been working with all month is ill. He knows that Howard's policy requires him to supervise Tom's work one more day, but he is really too sick to do the job adequately. He doesn't want to bother Howard, because "...Howard doesn't have anyone available to replace me...and this job can't wait." The client is already impatient to get the installation completed. Besides this, Charles has already used all of his sick leave and doesn't want to take another day off. Rather than talk to Howard, Charles suggests that Tom just continue with the installation and violate Axtell's policy. Charles will place his certification on the installation, even though he has not actually supervised the work. He feels comfortable in making this suggestion, based on the quality of Tom's work all month.

When first confronted with this suggestion, it seems that Tom should have insisted that he and Charles talk to Howard. Perhaps Howard is unaware of the impact of his conscientious safety policies on his installation engineers. This situation provides an opportunity to discuss the demanding workload. It may be the case that Charles' illness is the result of these demanding pressures. An open discussion with Howard at this time might have led to the hiring of additional personnel. Reduced pressure may have even delayed Charles' subsequent heart attack.

In retrospect, considering the later problems, it is easy to see that the desirable course for Tom would have been to discuss the problem with Howard from the beginning. It is only proper that Howard should be required to resolve the ethical dilemmas created by his policies.

Now, following Charles Yost's death, some serious leaks have been found in the containers installed on that critical last day of Tom's probationary period. These have caused costly damage and injuries. The client has threatened legal action against Axtell, Inc.

Should the case go to litigation, Axtell's attorneys plan to refer to the company's past record and to its rigorous installation policies. This places Tom in a difficult dilemma, for those very company policies were violated on the day the equipment was installed. If Tom has not yet done so, it is clear that he should discuss the events of that day not only with Howard, but also with Axtell's attorneys.

It is important to note that a lapse in Axtell's normal installation policies may not, in itself, result in increased legal liability in this case. The courts have traditionally held professional services to the Standard of Care test, which recognizes that engineers are human and therefore prone to errors in judgment. Perfection is not required, but rather conformance to the Standard of Care exercised by the engineer's colleagues practicing in the same place and at the same time (Carper 1990). The fact that Axtell may not have followed its own policies exactly, when

those policies are more stringent than the Standard of Care exercised by its competitors, should not be a serious legal issue.

The lesson of this case, at least from Tom's perspective, is that truthfulness comes easier when the first opportunity for truthfulness presents itself. Maintaining a lie or defending a lapse in moral judgment is always difficult. In this case, what first appeared to be a harmless evasion of truthfulness, may result in the temptation to commit perjury in the courtroom.

It is important not to forget, however, that there is a lesson for Howard in this case. Management has a clear ethical responsibility to maintain quality working conditions for employees. One of the proper functions of management is to create a working environment in which ethical conflicts like this one are less likely to occur.

#### Suggested Readings:

1. Carper, Kenneth L. 1990. "Ethical Considerations for the Forensic Engineer Serving as an Expert Witness," Business and Professional Ethics Journal, Rensselaer Polytechnic Institute, Troy, NY, Vol. 9, Nos. 1 and 2, Spring/Summer, pp. 2134.
2. Firmage, D. Allan 1989. "Management/Employee Ethics in Engineering Offices," Journal of Professional Issues in Engineering, American Society of Civil Engineers, New York, NY, Vol. 115, No. 1, January, pp. 5358.

#### **Michael Davis**

What makes this case seem hard is that everything is, or at least seems to be, extreme. Tom Banks is in the last day of his month's training. According to his trainer, Charles Yost, Banks is already good enough to be out on his own. Banks agrees. Yost is also quite ill, his sick leave already exhausted, and his finances so bad that he can't afford to take off a day without pay. He is unwilling to tell his superior, Howard Hanson, any of this. He tells Banks, "Howard doesn't have anyone available to replace me this week and this job can't wait."

All this may be as it seems. Then again, it may not be. For example, Hanson might have someone to spare for a day of supervising or he might do it himself. He might even be willing to wait until Monday. After all, his motto is "Better late than sorry!" What Yost is proposing to Banks is that they cut Hanson out of the decision-making process, that they take over management of this job to do something (they should know) their employer would probably not approve.

Whether or not Banks is ready to supervise installation of containers on his own is almost irrelevant. Though later events may suggest Banks needs more training, he has already received as much training as he is going to get. One day more or less should make no difference to his reliability. The question is simply who should decide to put aside Axtell's standard procedures for the convenience of one of Axtell's employees. Clearly, Hanson should.

Even in the short run, this might also be the more prudent course. Hanson could do things neither Yost nor Banks could. For example, Hanson might have informed Cameron Chemical, the company for whom the work was to be done, obtained its approval for Banks to work alone, and told Banks to go ahead. Hanson might have thought such a departure from his usual (but not legally mandated) procedure permissible given both Banks' training and Cameron's approval.

Well, that's not how Banks thought about it. He and Yost made the decision on their own. By all rights, that

should have been the end of it. But it was not. Three installations performed on that day seem to have been defective. Chemicals leaking from three containers damaged valuable equipment. Cameron is threatening to sue. What should Banks tell Hanson when he tries to find out what happened?

The truth: though the records report that he and Yost inspected the three installations on the last day of his training period, in fact he alone inspected the, Yost being too ill to do his part. Why not tell Hanson that? He needs the information to formulate his legal strategy. The information is hardly decisive. It reveals Hanson's legal position to be only slightly weaker than he supposed it to be. Axtell's procedure at Cameron on that day, though not quite Axtell's usual procedure, still went well beyond what the law requires or the industry generally practices. Cameron's storage facility, improper handling of the containers, or even sabotage still remain more likely than three improper installations Banks failed to catch.

People not used to business often panic at the first mention of a law suit. Yet, law suits are simply part of doing business (and usually end up as disputes between insurance companies). Hanson should no more be shielded from the facts while he prepares for the suit than he should have been shielded from deciding whether Banks should go it alone. Once Hanson knows what happened, he will be in a better position to decide whether to fight or settle.

But what if Hanson responds, "That's not what I want to hear"? Banks should look Hanson in the eye: "I'm sorry, Howard, I failed you when I was a trainee. I've learned my lesson. I've learned to keep you informed. You can fire me if you like, but I'm not going to lie for you. Think about it: If I lie for you in court, will you ever be able to trust me again? Can you run this business with liars?" Whatever Hanson answers, Banks should not lie about any of this. Lying is never part of an engineer's job. (NSPE Code III.1.)

If, however, Hanson simply asks Banks not to volunteer the information to anyone else, Banks should do as told. Indeed, he should keep quiet anyway. The information in question is clearly confidential. (NSPE Code III.4.) Though there are times when confidentiality must be violated, this is not one of them. Neither the public health, safety, or welfare is at stake. Banks does not know, or even have good reason to believe, he made any error at Cameron.

Banks should not worry about working with Axtell's lawyer. Presumably the lawyer will coach Banks in how to avoid revealing confidential information during legal proceedings, not try to get him to lie about what happened at Cameron. Like engineers, lawyers have a code of ethics. Their code forbids them to cooperate in perjury.

## **Ted Lockhart**

### **I**

It would be easy for Tom to convince himself that "it will make no difference" if he agrees to perform the final supervisions alone without Charles' oversight. Both he and Charles are convinced that he understands the installation procedures very well at this point. There is only one more day of Charles' monitoring of Tom's work, and it is very unlikely that one day more would make any significant difference in Tom's ability to handle the job that he will have to handle alone starting the very next work day.

However, for Charles to "put . . . [his] . . . tag on" with-out actually supervising Tom's work would constitute a deliberate deception. Of course, Tom might think that such a deception would be entirely Charles' responsibility--not Tom's--since, after all, Tom does actually supervise the installation and thus he would not be guilty of any

misrepresentation. Moreover, Tom may not believe that it is his obligation to police Charles' actions in the situation. After all, Charles is Tom's supervisor and not conversely. However, it is arguable that this way of looking at the situation is distorted. For Tom to perform his supervision without Charles' oversight and knowingly to allow the impression to be given that his work was overseen as called for by Howard's inspection policy might be regarded as Tom's being a party to that deception. Perhaps Howard's policy is too careful and needlessly restrictive. Perhaps Tom and Charles should try to convince Howard that this is the case and that the rules should be relaxed in this particular situation. However, Howard would probably resent learning after the fact that his rules were violated without his prior knowledge. The only apparent reason for violating those rules without informing Howard is that doing so might cost Charles a day's pay. Tom may be very sympathetic to Charles' plight and very reluctant to risk confronting Charles with a refusal to handle things the way Charles wants to handle them. However, these seem insufficient to offset the opposing ethical considerations--viz. that for Tom to do as Charles wishes might be knowingly to participate in a deception and a serious breach of trust. Therefore, the most reasonable course of action for Tom is to insist, as sensitively and sympathetically as possible, that he and Charles contact Howard and involve him in their deliberations.

## II

There is a good chance that Howard would not really want to know that Charles did not oversee Tom's supervision of the installation of the containers on the last day of Tom's trial period. For Howard to know that his policy was violated might mean that Axtell's defense against Cameron's suit would be seriously weakened if this information were to come out. Therefore, Tom might reason that it would be better for both Axtell and himself for him not to disclose to Howard or to anyone else that his work was not overseen on the day in question. This would be particularly true if Tom doubted that Cameron's problems resulted from their own faulty maintenance of the containers and not from the installation. Then, Tom might reason, not only would the outcome be better for Axtell, but also justice would be done in the sense that Axtell would not unjustly have to pay damages for something that it did not cause and had no responsibility for. However, it is very questionable that the above considerations are the only considerations that are relevant. There is still the issue of truth-telling. If Tom withholds the information from Howard, when clearly that information is relevant to Howard's present inquiry and to Axtell's legal position in the suit that Cameron is planning to bring against Axtell, then he would clearly be engaged in suppression of information and deception. Whether Howard really would rather be deceived than to know the truth is perhaps unimportant. It is entirely possible that Axtell would be able to mount an effective defense against Cameron even if the facts came out, since it may be only a coincidence that the containers that leaked were among those the installation of which Tom supervised without Charles' oversight. However, even if this were not the case, it is doubtful that Tom would be ethically justified in concealing the information. Fair adjudication of disputes between individuals or between corporations requires that pertinent information be available for consideration by the adjudicators. If the situation were reversed and Tom's employer were suing some corporation for supplying defective products, would Tom be willing for pertinent information about those products to be suppressed? I strongly suspect that the answer is "No". If so, for Tom to conceal what he knows about the circumstances under which the containers were installed at Cameron would not be universalizable. Perhaps for Tom to tell Howard what he knows will not help Tom's career at Axtell. However, his doing so is more likely to be ethically justified than his concealing that information.

### **Option 1:**

Assuming that Howard would not know that the regular routine was not followed unless Tom told him so, Howard would not know that his asking Tom to testify that it was followed would constitute asking Tom to



commit perjury. Therefore, Howard's instructions to Tom would be based on false beliefs about important aspects of the situation and would not be binding on Tom. Again, the only reason apparent for Tom to conceal information and to misrepresent pertinent facts about the situation would be to protect his and his employer's interests. And it is highly questionable whether, in the long run, those interests would best be served in this way. For Tom to go ahead with perjured testimony would be more serious, certainly legally and probably ethically, than for him simply not to volunteer information about the departure from the regular routine. Consequently, Tom should not give perjured testimony, and if so he must now come clean and tell Howard about that departure.

## **Option 2:**

Perhaps Howard's request that Tom testify and that he not reveal that the regular routine was not followed gives some additional weight to the hypothesis that Axtell's interests would best be served by Tom's falsely testifying that the regular supervision and oversight routine was followed. However, given the stakes that are involved both to Axtell and to Tom, it is debatable whether this is so. Moreover, even if it is true, Tom's false testimony would be a blatant lie and deception. As noted above, proper adjudication of disputes requires that pertinent information be available for consideration by the adjudicators. Even if one regards lying or deception as justified in some situations by the good consequences that it produces, or perhaps the bad consequences that it avoids, this does not seem to be true of the situation in which Tom finds himself. It is very questionable that concealing information and misrepresenting the facts would have the best overall consequences in the long run. As noted above, Axtell may have an effective defense even if all the facts are revealed, since its installation and supervision procedures are perhaps more careful and deliberate than they need be. Presumably Tom would not want someone to suppress such pertinent information if the roles were reversed--i.e. if his employer were the party bringing the suit against some supplier of equipment. Tom should agree to testify but refuse to lie in court. There is no need for him to talk to Axtell's attorneys about Howard's request that he conceal important information during his testimony. He should simply tell Howard politely but straight-forwardly that if he testifies he will tell the truth and the whole truth.

## **II**

The situation here is very complicated, ethically speaking. One perspective is that the legal system should be allowed to function and that this means that, in an adversarial system, the attorneys, both Axtell's and Cameron's, should be in charge of the arguments that the parties bring before the court. In favor of this view is the rule-utilitarian argument that the "system" has been time-tested and has been found to work better than other systems. Accordingly, Tom should defer to the attorneys and rely on them for direction about whether and how he should participate in the legal process.

An opposing argument is that, even if the adversarial system of justice works best in general, it sometimes breaks down in particular cases. For Tom to suppress information about the departure from the regular routine at the advice of the attorneys would be to deprive the process of important information and thus not serve the purpose of having all pertinent information available to those who must adjudicate the dispute. Of course, Axtell's attorneys may point out that, after all, the process is adversarial and that Cameron's attorneys can be expected also to control the information that comes out in testimony and perhaps to conceal any information that, if revealed, would compromise its position. Moreover, for Axtell not to use legal strategies would place it at a competitive disadvantage in this dispute. It is plausible that, given the legal system and how it works, in fairness and in loyalty to his employer, Axtell, Tom should be willing to listen to and perhaps defer to Axtell's attorneys in deciding how much information he will volunteer and how he will present the information that he has in his

testimony if that becomes necessary. Perhaps he can safely assume that he will be called as a witness by Cameron if not by Axtell because of the important role that he played in the events leading up to Cameron's suit against Axtell.

It might not be clear to Tom what the attorneys meant when they said that they would "coach" him in preparing him to give testimony. If it means that they will help him to present information in a manner that is accurate and not misleading so that he will not be victimized by the opposing attorneys, then there would seem to be no reason why he should not allow this coaching. However, if it means that they will help him to testify in a way that is deceptive and misleading although not strictly perjurious, then honesty and integrity require that he resist such "coaching". He should ask them exactly what they mean by "coaching" and then determine his course of action based on their response and the above considerations.

### III

If one bears in mind that Friday is the last day of Tom's trial period and that to this point he has demonstrated exceptional ability to do the job of supervising container installation, and that it is important to fulfill Axtell's commitment to complete the job by Friday, then it would seem entirely reasonable to have Tom complete the supervision without Charles' oversight. Of course, against the very low probability of anything going wrong on the remaining installations must be weighed the seriousness of the harm that might occur if something does go wrong--e.g. serious injury or death of Cameron personnel or damage to expensive equipment with the resulting legal liability of Axtell. Thus the risk (= probability of harm x seriousness of the harm) may be significant. Furthermore, to depart from the established policy in this instance may make it easier to do so on future occasions. If that policy is a sound one, then it may be best not to violate it in this situation even if there is little reason to suppose that doing so will lead to dire consequences. Several alternatives are apparent: (1) explain the situation to Cameron and find out if it would be acceptable to complete the installations on Monday, (2) temporarily transfer an installation supervisor from a less urgent project to the Cameron installation to replace Charles for the Friday installations (assuming that such a person would be able to get there in time), or (3) have Howard himself go to Cameron to replace Charles for one day (assuming that Howard has no more urgent business to take care of in the home office). Regarding (1), even if Cameron refuses to grant the one-day delay without insisting that Axtell pay a (\$25,000) penalty, it may be in Axtell's long-term interest to go this route in order to preserve its reputation as a company that does good, careful work usually on schedule and that does not cut corners in ways that would jeopardize the health of affected parties.

None of the above alternatives, including allowing Tom to complete the supervision of the installations alone, is clearly superior to any of the others. Uncertainties about the consequences of the different possible courses of action abound, and foresight is much less accurate than hindsight will be. Given the information available to Howard, any of the above alternatives would appear to be reasonable choices.

### IV

As noted above, it would be an error for Tom not to notify Howard that Charles was unable to oversee his supervision of the final container installations, although perhaps an understandable one for someone in Tom's position--i.e. a relatively inexperienced installation supervisor who is being urged to act in a certain way by his assigned mentor in the company. Whether Tom recognizes his error and corrects it by telling Howard about the circumstances of the final equipment installations or compounds it by continuing to conceal important information from Howard will reveal much about Tom's honesty and integrity. Therefore, it matters greatly how Howard learns of the violation of the established routine. In any event, Howard should make it clear to Tom that he

(Howard) cannot do his job if he is kept in the dark on important matters and therefore that he must insist that, in the future, Tom notify him of any departure from established policy and that any deception will not be tolerated. If Tom responds to being "called on the carpet" in a constructive way, then he may turn out to be a much more valuable employee than if the situation had not occurred at all.

## **Michael Rabins**

This case is complex, with many possible variations, and it is realistic. It truly depicts the way a simple event such as Charles' illness on the last day of Tom's training period can escalate into all sorts of significant consequences. In other respects it was the most difficult to comprehend and comment upon. Some of the issues raised by the case are compelling and relevant to many other engineering cases. Whether Tom should cover for Charles' illness at the very start of the case, or call Howard and get advice on what to do raises the important issues of team playing, loyalty to the company, signing reports truthfully, not performing services in areas of one's (officially certified) competence, acting as faithful agents of the client or employer, and holding paramount the public's safety. In one way or another almost all of the items of NSPE Code of Ethics are called into question at the very onset of this case.

In scenario #2, following the accident of Cameron, whether Tom tells Howard or not about his having departed from the regular routine is almost an order of magnitude in difficulty below the ethical issues involved in scenario #1. This is almost a transparently obvious set of circumstances involving the general desirability of honesty and integrity and the almost immediately obvious potentially disastrous consequences of Tom not telling Howard.

Once the scene shifts to the court room in options #1 and #2 in scenario #2 still additional issues surface. No company or its lawyer can morally request someone to do anything that is illegal or that violates that person's morals. With that understood, some of the alternatives presented in option #1 and #2 become easier to deal with. The same issue applies to the questions raised in Version II of the case.

Scenario #3 now puts the responsibility squarely on Howard's shoulders. The same moral guidelines and ethical codes that drove Tom to share his quandary with Howard apply equally well to Howard now that he must decide what to do. The above cited applicable items in the code of ethics, combined with standard Axtell professional practices, should guide Howard to what he must do; even at the cost of large penalty payments, additional installation costs and delays in job completion. What is at stake is public safety, Axtell reputation and future liability.

In scenario #4 the question raised about how Howard should deal with Tom depends upon when and how Howard learns of Tom's actions. This strikes me as more an issue of personnel management policy than an ethical case issue. In any event, if Tom has willingly withheld important information from Howard, this then comes under the heading of Tom's loyalty to the company and his ability to act as a faithful agent of Axtell.