



Paul Chesler, Director, Quality Assurance

Paul Chesler was whistling as he walked toward his office, still feeling a bit like a stranger since he had been hired four weeks before as director, quality assurance. All that week he had been away from the plant at an interesting seminar, entitled “Quality in the New Millennium,” given for quality managers of manufacturing plants by the corporate training department. He was now looking forward to digging into the quality problems at this industrial products plant employing 1,200 people.

Chesler poked his head into Mark Hamler’s office, his immediate subordinate as the quality control manager, and asked him how things had gone during the past week. Hamler’s muted smile and an “Oh, fine,” stopped Chesler in his tracks. He didn’t know Hamler very well and was unsure about pursuing this reply any further. Chesler was still uncertain of how to start building a relationship with him since Hamler had been passed over for the promotion to Chesler’s job—Hamler’s evaluation form had stated “superb technical knowledge; managerial skills lacking.” Chesler decided to inquire a little further and asked Hamler what had happened; he replied: “Oh, just another typical quality snafu. We had a little problem on the Greasex line last week [a specialized degreasing solvent packed in a spray can]. A little high pressure was found in some cans on the second shift, but a supervisor vented them so that we could ship them out. We met our delivery schedule!” Since Chesler was still relatively unfamiliar with the plant and its products, he asked Hamler to elaborate; painfully, Hamler continued:

We’ve been having some trouble with the new filling equipment and some of the cans were pressurized beyond our specs on a psi [pounds per square inch] rating scale. The production rate is still 50% of standard, about 14 cases per shift, and we caught it halfway into the shift. Jing Zhao [the inspector for that line] picked it up, tagged the cases “hold,” and went on about her duties. When she returned at the end of the shift to write up the rejects, Wayne Simmons, first-line supervisor, was by a pallet of finished goods finishing sealing up a carton of the rejected Greasex; the reject “hold” tags had been removed. He told Jing that he had heard about the high pressure from another inspector at coffee break, had come back, taken off the tags, individually turned the cans upside down and vented every one of them in the eight rejected cartons. He told Jing that production planning was really pushing for the stuff, and they couldn’t delay by having it sent through the rework area, but that he would get on the operator to run the equipment right next time. Jing didn’t write it up but came in about three days ago to tell me about it. Oh, it happens every once in a while, and I told her to make sure to check with maintenance to verify that the filling machine was adjusted; and I saw Wayne in the hall and told him that he ought to send the stuff through rework next time.

This case is based on previous work done by Dr. Frank S. Leonard. HBS cases are developed solely as the basis for class discussion. Cases are not intended to serve as endorsements, sources of primary data, or illustrations of effective or ineffective management.

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Chesler was a bit dumbfounded at this and didn't say much—he didn't know if this was a big deal or not. When he got to his office, he thought again what Morganthal, general manager, had said when he had hired him. He warned Chesler about the “lack of a quality attitude” in the plant, and said that Chesler “should try and do something about this.” Morganthal further emphasized the quality problems in the plant: “We have to improve our quality; it's costing us a lot of money; I'm sure of it, but I can't prove it! Paul, you have my full support in this matter; you're in charge of these quality problems. This downward quality-productivity-turnover spiral has to end!”

The incident had happened a week before; the goods were probably out in the customer's hands by now, and everyone had forgotten about it (or wanted to). There seemed to be more pressing problems than this for Chesler to spend his time on, but this continued to nag him. He felt that the quality department was being treated as a joke, and he also felt that this was a personal slap from manufacturing. He didn't want to start a war with the production people, but what could he do? Chesler was troubled enough to cancel his appointments and spend the morning talking to a few people. After a long and very tactful morning, he learned the following information.

1. *From personnel.* The operator for the filling equipment had just been transferred from shipping two weeks ago. He had had no formal training in this job but was being trained by Wayne, on-the-job, to run the equipment. When Jing had tested the high-pressure cans, the operator was nowhere to be found and had only learned of the rejected material from Wayne after the shift was over.
2. *From plant maintenance.* This particular piece of automated filling equipment had been purchased two years ago for use on another product. It had been switched to the Greasex line six months ago, and maintenance had had 12 work orders during the last month for repairs or adjustments on it. The equipment had been adapted by plant maintenance for handling the lower viscosity of Greasex, for which it had not originally been designed. This included designing a special filling head. There was no scheduled preventive maintenance for this equipment and the parts for the sensitive filling head, replaced three times in the last six months, had to be made at a nearby machine shop. Nonstandard downtime was running at 15% of actual running time.
3. *From purchasing.* The plastic nozzle heads for the Greasex can, designed by a vendor for this new product on a rush order, were often found with slight burrs on the inside rim, and this caused some trouble in fitting the top to the can. An increase in application pressure at the filling head by maintenance adjustment had solved the burr application problem or had at least forced the nozzle heads on despite burrs. Purchasing agents said that they were going to talk to the sales representative of the nozzle head supplier about this the next time she came in.
4. *From product design and packaging.* The can, designed especially for Greasex, had been contoured to allow better gripping by the user. This change, instigated by marketing research, set Greasex apart from the appearance of its competitors and was seen as significant by the designers. There had been no test of the effects of the contoured can on filling speed or filling hydrodynamics from a high-pressured filling head. Chesler had a hunch that the new design was creating a Venturi effect¹ when being filled, but the packaging designer thought that this was unlikely.

¹ When air or fluid flows through a tube or pipe with a constriction in it, the fluid must speed up in the constriction, reducing its pressure and creating a partial vacuum. This was known as the Venturi effect, named after the Italian physicist Giovanni Battista Venturi.

5. *From manufacturing manager.* He had heard about the problem; in fact, Simmons had made a joke about it, bragging about how he beat his production quota to the other foremen and shift supervisors. The manufacturing manager thought Simmons was one of the “best foremen we have . . . he always gets his production out.” His promotion papers were actually on the manufacturing manager’s desk when Chesler dropped by. Simmons was being strongly considered for promotion to shift supervisor. The manufacturing manager, under pressure from Morganthal for cost improvements and reduced delivery times, sympathized with Chesler but said that the rework area would have vented, with their pressure gauges, what Wayne had done by hand. “But, I’ll speak with Wayne about the incident,” he said.
6. *From marketing.* The introduction of Greasex had been rushed to market to beat competitors, and a major promotional-advertising campaign was underway to increase consumer awareness. A deluge of orders was swamping the order-taking department and putting Greasex high on the back-order list. Production had to turn the stuff out; even being a little off spec was tolerable because “it would be better to have it on the shelf than not there at all. Who cares if the label is a little crooked or the stuff comes out with a little too much pressure? We need market share now in that high-tech segment.”

What bothered Chesler most was the safety aspect of the high pressure in the cans. He had no way of knowing how much of a hazard the high pressure was or if Simmons had vented them enough to effectively reduce the hazard. The data from the can manufacturer, which Hamler had showed him, indicated that the high pressure found by the inspector was not in the danger area. But again, the inspector had only used a sample testing procedure to reject the eight cases. Even if he could morally accept that there was no product safety hazard, could Chesler make sure that this would never happen again?

Skipping lunch, Chesler sat in his office and thought about the morning’s events. The past week’s seminar had talked about the role of quality, productivity and quality, creating a new attitude, and the quality challenge, but where had they told him what to do when this happened? He had left a very good job to come here because he thought the company was serious about the importance of quality, and he wanted a challenge. Chesler had demanded and received a salary equal to the manufacturing, marketing, and R&D directors, and he was one of the direct reports to the general manager. Yet he still didn’t know exactly what he should or shouldn’t do, or even what he could or couldn’t do under these circumstances.