

Additional Case Study: Westover Electrical, Inc.

to accompany CHAPTER 6: Managing Quality

Westover Electrical, Inc., is a medium-size Houston manufacturer of wire windings used in making electric motors. Joe Wilson, VP operations, has experienced an increasing problem with rejected product found during the manufacturing operation. "I'm not sure where to begin," admitted Joe at the weekly meeting with his boss. "Rejects in the Winding Department have been killing us the past two months. Nobody in operations has any idea why. I have just brought in a consultant, Roger Gagnon, to take a look at the situation and make recommendations about how we can find out what is going on. I don't expect Roger to make technical recommendations—just see if he can point us in the right direction."

Gagnon's first stop later that day was the production floor. His discussions with the production supervisors in the Winding Department indicated that they had no real grasp of what the problem was or what to do to correct it. A tour of the winding operation indicated that there were three machines that wound wire onto plastic cores to produce the primary and secondary electric motor windings. After inspection by quality control (QC), these windings then went to the Packaging Department. Packaging personnel, Gagnon found, inspect their own work and make corrections on the spot. The problem is that too many windings are found to be defective and require reworking before they can be packaged.

Gagnon's next stop was the Quality Control Department, where he obtained the records for the past month's Winding Department rejects.

TABLE 1. January Transformer Reject Log: Winding Process

Date	<u>No. of Reject Units by Cause</u>								
	No. Inspected	Winder	Bad Wind	Twisted Wire	Broken Leads	Abraded Wire	Wrong Core	Wrong Wire	Failed Electrical Test
1	100	1	1	0	4	1	0	0	1
	100	2	2	1	0	0	1	5	0
	100	3	0	0	0	5	0	0	3
2	100	1	0	1	3	0	0	0	0
	100	2	3	1	0	0	2	3	0
	100	3	0	0	1	6	0	0	0
3	100	1	1	0	0	2	0	0	0
	100	2	0	0	0	0	0	3	0
	100	3	0	0	1	4	0	0	3
4	100	1	0	0	3	0	0	0	0
	100	2	0	0	0	0	0	2	0
	100	3	0	0	0	3	1	0	3

5	100	1	0	1	5	0	0	0	0
	100	2	0	0	0	0	0	2	1
	100	3	0	0	0	3	0	0	2
8	100	1	0	0	2	0	0	0	0
	100	2	0	0	0	0	0	1	0
	100	3	0	0	0	3	0	0	3
9	100	1	0	1	2	0	0	0	0
	100	2	0	0	0	0	0	1	0
	100	3	0	0	0	3	0	0	4
10	100	1	0	0	5	0	0	0	0
	100	2	1	0	0	0	1	0	0
	100	3	0	0	0	5	0	0	4
11	100	1	0	0	4	0	0	0	0
	100	2	0	0	0	0	0	0	0
	100	3	0	0	0	4	0	0	4
12	100	1	0	0	3	0	1	0	0
	100	2	1	0	1	0	0	0	0
	100	3	0	0	0	5	0	0	4
15	100	1	0	0	2	0	0	1	0
	100	2	0	0	0	0	0	1	0
	100	3	0	0	0	3	0	0	3
16	100	1	0	0	6	0	0	0	0
	100	2	0	0	0	0	0	0	0
	100	3	0	0	0	3	0	0	3
17	100	1	0	1	1	0	0	0	0
	100	2	0	0	0	0	0	0	1
	100	3	0	0	0	3	0	0	3
18	100	1	1	0	2	0	0	0	0
	100	2	0	0	0	0	0	1	0
	100	3	0	0	0	4	0	0	1
19	100	1	0	0	2	0	0	0	0
	100	2	0	0	0	0	0	0	0
	100	3	0	0	0	3	0	0	1
22	100	1	0	1	4	0	0	0	0
	100	2	0	0	0	0	0	0	0
	100	3	0	0	0	3	0	1	2
23	100	1	0	0	4	0	0	0	0
	100	2	0	0	0	0	0	0	1
	100	3	0	0	0	4	0	0	3

24	100	1	0	0	2	0	0	1	0
	100	2	0	1	0	0	0	0	0
	100	3	0	0	0	4	0	0	3
25	100	1	0	0	3	0	0	0	0
	100	2	0	0	0	1	0	0	0
	100	3	0	0	0	2	0	0	4
26	100	1	0	0	1	0	0	0	0
	100	2	0	1	0	1	0	0	0
	100	3	0	0	0	2	0	0	3
29	100	1	0	0	2	0	0	0	0
	100	2	0	0	1	0	0	0	0
	100	3	0	0	0	2	0	0	3
30	100	1	0	0	2	0	0	0	0
	100	2	0	0	0	0	1	0	0
	100	3	0	0	0	2	0	0	3

Note: Assume that each defective unit was rejected because of one single defect.

Discussion Questions

1. Prepare an outline for Roger Gagnon's report.
2. What charts, graphs, computer printouts, and so forth might be included in the report?
3. Prepare Gagnon's recommendation, with justification, on one page.
4. Prepare the detail necessary to supplement Gagnon's recommendation and justification so that Joe Wilson will understand how Gagnon arrived at his recommendations.

Source: Professor Victor E. Sower, Ph.D., C.Q.E., Sam Houston State University.