To Train or Not to Train

It’s all to do with the training: you can do a lot if you’re properly trained.” Are these the words of a modern corporate training officer attempting to motivate her workforce? Hardly. Elizabeth II, Queen of Great Britain and Northern Ireland, made this salient proclamation over 50 years ago. What has held over the ages is not a secret; people perform better when properly trained.

A keystone of a world-class organization is the depth and breadth of the training program. Training can be defined as learning that is provided in order to improve performance on the present job. A well-managed program in a printed circuit board facility can mean the difference between average and outstanding performance. Of course, this applies to every industry, but with up to 60 different possible processes combined with the degree of difficulty required to produce today’s boards, it takes on exponential importance.

The problem is compounded with the double-digit employee turnover typically experienced in the PCB industry. While the president of most PCB fabricators will proudly boast that the differentiator with their company is “our people,” the real proof of management commitment is the quality of the training program. Having taken a number of companies through successful ISO registration, I fully appreciate the time and money required to implement and maintain an effective training program. However, I can also acknowledge the continual ROI that accompanies that investment.

It is amazing, once you peel the onion down, how many outcomes (both positive and negative) in this business can be ultimately traced in some fashion to training. The following conversation has been repeated many times, and may sound familiar.

**Supplier:** This is Lloyd. He is our best driller and runs this department.

**Customer:** Can I see his training file documenting that Lloyd is a certified operator for drilling?

**Supplier:** We don’t have a certified operator program, but Lloyd is the trainer for drilling, and every operator is trained by Lloyd. He could take one of these drills apart and put it back together.

**Customer:** How do you know when an operator is ready to work on his or her own?

**Supplier:** Lloyd says so. He also personally reviews and approves every single job that is released from drilling to assure quality.

**Customer:** What happens if one of my jobs is scheduled to be drilled when Lloyd is on vacation or sick?

**Supplier:** (Silence)

**Customer:** Exactly.

**Training Records**

Ironically, the companies that have the best trained workforce many times have the weakest system. Most PCB fabricators do a tremendous amount of training, but do not take credit for it. A common mantra I will repeat in many columns is “if you can’t prove it, it didn’t happen!” If you take the time to flowchart your daily non-production processes, you will be surprised by the amount of informal training that takes place on a daily basis. Develop a simple method of documenting all training that takes place: a training record. Whether part of an elaborate electronic system, or a simple paper document, complete a training record at every opportunity. (As with any system in this business, the more complicated you make it, the higher the potential for failure.)

**Training Categories**

An example training record (Figure 1) might have four categories: Formal Classroom, Informal Classroom, On-The-Job and Written Test.

![Figure 1.](image)

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Formal Classroom. Typically includes internal standard classroom instruction on orientation, procedures, ISO, SPC, or any other topic that requires a formal training session, and usually involves written material in some form. Any external generated training source, from seminars and university classes to supplier process training presentations held in-house would also apply.

Informal Classroom. Every time you sit down with an employee to discuss (written or verbal) a recent mistake, customer complaint, or simply to work-through a potential process improvement is a training opportunity. Take five extra minutes and record it.

On-The-Job. Pretty self-explanatory but rarely documented.

Written Test. This is part of the Certified Operator Program, and a written test is the easiest method of demonstrating effective working knowledge of the training, as well as recertification.

Certified Operator Program

This is an integral part of the training program that is also often overlooked. It simply is not acceptable to a customer for a supplier to rely strictly on OTJ training. There needs to be some method of demonstrating the employee's understanding and competence as it relates to the job(s) he is being trained for. This is of particular importance when a company utilizes cross-training, and moves people around within departments to adjust to workload fluctuations. Annual recertification is also a must; it simply is not very effective if the procedure has changed revision numerous times since the initial certification. There has to be a high level of confidence in workforce competency, and a certified operator program is the appropriate method. Figure 2 shows how a sample certified operator process map might look.

I will end this column as I began it, with another timeless quote. Perhaps Confucius was speaking about the importance of participative employee training when, 2500 years ago, he stated, "What I hear, I forget. What I see, I remember. What I do, I understand."