

# From The Lab



BY BOB NEVES



## A Little Train(ing) That Could

**D**oes the title above cause visions of a locomotive, or is it your battle cry for learning opportunities and programs at your company?

I've always been fascinated by trains. The art of moving people from one place to another *en masse* is something to which I've always been attracted. When I am out of the (mass transit-challenged) Los Angeles area, I make it a point to take a train or subway whenever possible. There are big trains, little trains, toy trains, and I even saw on an ad on late night cable television for a video dedicated to exhibiting different kinds of trains around the world.

Like so many other English words, "train" has a double meaning. I've always wondered how it could represent a form of mass transit and also mean the process by which we teach people to perform tasks. The only way I could tie the two meanings together is with the famous story of "The Little Train That Could." As you know, it is a heart-wrenching story that teaches us what a positive attitude toward training can do to help get you over the hill (of manufacturing process woes).

Manufacturing processes in the electronics interconnection industry are historically labor-intensive. Most typical employee training programs involve showing the trainee a set group of steps and asking them to repeat them over and over (i.e., dip, scrub, dry, repeat). Many training programs consist of little more than having an operator watch someone perform a process a couple of times and then turning the process over to him. Often, these processes are critical where tens of thousands of dollars of materials are turned to this "newbie" immediately. I don't know many people who would

turn over their cars to someone who has only watched you drive one a couple of times and never drove one himself.

Training even the most experienced employee is essential. Many times we rely upon past experience as the training necessary to complete an operation. We will hire someone with experience and expect them to immediately step into the process and perform like a pro. It is indicative of the old adage, "experience is what you get when you didn't get what you really wanted." Along with good habits come bad habits. Many times, bad habits are harder to break than training someone from scratch.

In contrast to the short amount of time many employees spend in formalized training programs, companies will spend months carefully researching a new machine, thoroughly looking at its capability and specifications. Companies are slowly beginning to realize that formalized employee training programs can bring a tremendous amount of value to the organization.



I tried to think of the reasons (i.e., excuses) that we use for not doing "proper" training. Here's the short list:

- We're just too busy to train.
- Training costs too much.
- That job is easy; it doesn't require training.
- I'll watch the trainee like a hawk.
- He can't speak the language.
- He's been doing it for years; he must be doing it right.
- He has a degree.
- She says she knows how to do it.
- Anyone can figure that out.

As you can see, there is no lack of excuses for not training someone properly (and I'm sure you can add several of your own).

Another prominent reason that we don't always conduct proper training is because the performance specifications we all work with do not require any level of training for the people who make the product. These specifications simply focus on the finished product performance, spending little or no time on the manufacturing process itself.

One of the exceptions to this "specification rule" is the ISO 9000 series of documents. A major benefit I found when implementing our ISO 9002 system is that it forced us to seriously evaluate and demonstrate the benefits of our formalized training program. Prior to ISO 9002, I had always thought we had a good training program. During our implementation of the training requirements of ISO 9002, however, there were definitely areas found where we could improve. We now feel confident that we have a tool to assist us with measuring our performance. I know that ISO 9000 is not for everyone, but I was impressed at how it made our company better in many ways.

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One problem that we all face when implementing a training program is finding proper training materials. These training materials have always been difficult to find, and when found, sometimes prove inadequate. In recent years, the IPC has tremendously increased the availability of formalized training materials within our industry.

The IPC has led the way in providing formalized training materials and certification programs which we have been unable to find. These training materials (videos, slides, and CDs) are available for almost every aspect of manufacturing in our industry, and the IPC has taken it a step further by providing certification programs for design, assembly (J-STD-001), and, recently, PWB acceptability (IPC-A-600).

Training has become the cornerstone of my company's ISO 9002 quality sys-

tem. We have also made the decision to become one of the first sites in the country to provide IPC licensed, certified training to IPC-A-600. I will be teaching these two-and-a-half day certification classes at our facility on a regular basis. These classes will give companies the opportunity to have employees educated and certified as an IPC-A-600 instructor. This will then allow the certified instructor to return to his facility and certify operators and inspectors to IPC-A-600.

Our industry is labor intensive. The skill of a company's employees can determine its success or failure. When we evaluate the cause of defects in our industry, many can be traced to human error and could have been prevented with proper training. When thinking of training, remember to be like the little locomotive that could (I think I can, I think I can . . . I know I can).

In speaking with, John Riley, IPC's director of education, he said, *"The PWB industry must take education upon itself—perhaps more than any other industry in the manufacturing sector. There is no formal career path that links college or high school curricula to the jobs of fabricating and assembling printed circuit boards. We have a lot to teach, not very many qualified teachers, and a relatively small training infrastructure."*

*"IPC certification programs in printed board manufacture, design, and assembly will help build a reservoir of common knowledge about terms and practices and give employees valuable, industry-wide recognition."*