

survives but it achieves new routes for its perpetuity. No governmental decree or heavy legislation is required to achieve the reality of this dream. Nor does it require the workplace to become a behaviorist's laboratory. It is achieved by the very people who wrote the traditional work life scenarios. The people within the workplace find their own reparations.

There is one last characteristic of the dream concerning its own fruition. It does not achieve itself by dialogue, debate, logic, eloquence or a required change in any

person's or institution's attitude. A more fulfilling work life grows out of specific processes that let people experience a finer work life. It is this experience that widens people's attitudinal horizons. People in conflict can be touched by the processes of change without first having to set aside the scars of days gone by. The scars heal over not from an elixir of rhetoric but from new experiences and involvements.

The Essence

Experiencing a sense of community involvement, trust, contribution, growth, dreams and self-

selected welding curtains — that's what QWL is all about! — *Don Scobel*

Until recently, Don Scobel was manager of Employee Relations Development for the Eaton Corp. He has had corporate responsibility for labor relations, training and development, government relations, benefit administration, employee communications and employee relations policy development. For the last several years he has been a prime mover in the development of new processes of employee involvement and many innovations in leadership style, at both union and union-free plant environments.

"A NEW LOOK IN SKILLS TRAINING"

Guest Commentary
BY HARRY OSTROFF

The most urgent objective of the skills trainer is to increase blue-collar productivity. I believe we now have the technology to meet this objective in a new, exciting, measurable way.

Let's begin with a task analysis. It will show that all mechanical craftspersons work with two basic groups of skills. They are:

1. Tool Manipulation
2. Information Handling

Tool manipulation is an obvious activity of all mechanics. But the use of tools and equipment is dependent on another activity. It is the physical result of the mechanics' not-so-obvious information processing activity. Something inside their heads is telling them which tool to pick up and how to use it.

This continuous processing of information is the centerpiece of the new look in skills education. The new look will include developing better ways to train mechanics to read, to understand and to interpret the many kinds of information they use. This new look will also be evident in the information storage and retrieval hardware we provide for mechanics to quickly access what they need to know at the time and the place they need the information.

Auto mechanics are the craftspersons with whom we are most



Harry Ostroff

familiar. Let's look at the many different kinds of information they must be able to use. Some of them are:

- Catalogs
- Charts and Graphs
- Cut-away Views
- Diagrams
- Electric and Mechanical Blueprints
- Exploded views
- Factory Bulletins
- Operating Procedures
- Parts Location Views
- Schematic Drawings

- Shop Repair Manuals
- Tightening Sequences and Torquing
- Wiring Diagrams
- Work Orders

Truly an impressive array of technical two-dimensional forms of data.

Literacy and Attitude Problems

Unfortunately, the low literacy skills of some high school graduates presents a serious problem we must overcome in training people to handle information efficiently. In addition there is a negative peer group attitude toward "bookwork." We will have to educate a mechanic to regard "bookwork" as important a part of the job as is a tool box. In fact, it's more important! They must learn not to take up a tool unless they are sure they have the information to improve the car's performance. The person with the wrench can damage your car as well as fix it. If some professor of semantics researches it he or she will probably find that the word "monkey" wrench derived from the fact that many mechanics were seen to pick up this tool to monkey around with.

Much of the necessary information is not in the form of words. Reading technical drawings, schematics, diagrams and pictorial

displays need to be learned as new languages to enable the mechanic to develop facility in understanding and interpreting. Some of the various forms and formats in which information comes to the mechanic presents special learning (and therefore teaching) challenges. Besides the many forms of knowledge mechanics must handle, the sheer mass of technical facts and details they find, read, understand, apply and store for retrieval is mountainous.

Foreign car mechanics have a reputation of being superior to the domestic variety. I don't think so. A Volkswagen mechanic can yank the engine out in a few minutes, probably with his/her eyes closed, and doesn't need to refer to anything but memory because the car hasn't changed much. But each year American cars get more complicated. Each make, model and year has hundreds of individual technical specifications. There is no way a mechanic can be competent relying only on memory or mechanical ability. We have to teach mechanics to forget about

remembering details and make them adept at handling technical information. Today a good mechanic can look lost fumbling for a hood latch, let alone diagnosing the effects of an anti-pollution device failure. These devices can give the same failure symptoms as any component of the basic ignition system. So now a "hard start," "poor idle" or "miss" can have many causes and combinations of causes. Even the ignition and carburetion expert cannot keep up without a great amount of information. We must make this information available as needed at the work station and present it in the most easily usable form.

Learning New Skills

Mechanics will have to learn new skills which will be identified at the same time as new software and hardware is being developed. As an example, they will have to learn how to view technical films. These films are loaded with information and require a different intensity of viewing and hearing than "the movies."

Use of delivery hardware will

also have to be taught, including computer terminal addressing and reading outputs. Mechanics will be working in a new work station environment, feeding symptoms into computer storage and receiving the repair information at the work station as they are doing the job.

This will be the new look. It will unquestionably enable us to increase the productivity of auto mechanics. And it's the new look also for increasing productivity of all craft and electro-mechanical maintenance people. They all use tools and information. The equipment and machinery which they install and maintain also grows more complicated and more exotic. We have to teach them how to handle the information of their specific craft and we have to make this information available on demand by each individual mechanic at the time and place and form that he or she needs it. — *Harry Ostroff*

Harry Ostroff is training program developer, Pennsylvania Power & Light Co., Allentown, PA.

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