

PCB — A Threat or a False Alarm

POLYCHLORINATED BIPHENYL which was first recognized as a contaminant in 1964, has since been found in various concentrations in food packagings and also in poultry and fish.

Because of its close structural similarity to DDT (both are chlorinated hydrocarbons), it was immediately viewed with suspicion.

How did PCB find its way into food packaging materials or even into turkeys and fish?

PCB is a chlorinated hydrocarbon manufactured by Monsanto Company and marketed as a material used in heat exchangers. It is also used in the manufacture of NCR papers. The latter, when recycled, introduced the PCB into waste-paper pulp used in the manufacture of cylinder board. Alternatively, when used in heat-exchange units, any spills will lead to the eventual presence of PCB in poultry, fish and even the growing plant.

Accordingly, the presence of this compound in varying quantities in poultry, fish and food packaging materials has produced quite a scare, so that Monsanto has agreed to discontinue marketing the material for non-controllable applications and FDA has limited the quantity permissible in packagings to a maximum of 5ppm — the same as for DDT.

Other Complications

One would have thought that the constraint imposed by FDA upon the permissible concentration of PCB would have eliminated the problem. This is not so.

The difficulty is that there seems to be no accurate method of determining the quantity of PCB in any material. The results of analysis — carried out by gas chromatography or spectroscopy — are too uncertain and cannot be reproduced. The same sample may show 5ppm

of PCB on one occasion and then may go up to 10ppm on the next try. Moreover, its similarity with DDT makes it uncertain whether you are measuring one or the other.

The Institute of Paper Chemistry in Appleton, Wisconsin, is currently engaged in designing methods that will result in more accurate analysis.

To compound the problem still further, certain experiments carried out in Europe seem to indicate that pure PCB is not toxic, that the toxicity is caused by dibenzoyl furan which appears as a contaminant in the commercial grades of PCB.

It has also been suggested that, because of the extreme stability of PCB (it is reported to be more stable than DDT), it may be completely harmless to animals or human beings.

With the current interest in PCB, it is likely that these questions will be resolved within a few years. ■

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shortcomings. The pulp mill superintendent may find that there are a great many things which he can do to help the paper mill superintendent. He may even discover that he is the biggest problem to improving operations in the paper mill. The mill accountant may learn that the standard cost analyst who works in the paper mill area is not doing an effective job of training paper mill supervision to use standard cost. Objective setting which is locked into a secrecy relationship between a manager and his individual subordinates can never get at all the facts. When information is shared fully between departmental areas in objective setting on a team basis, an organization development process is created.

It is also worthy of mention that all managers will work harder to achieve their objectives when the maturity of their planning and thinking is exposed to other managers who work at their own level. A manager may not respond to the pressure of his boss, but he is unusual when he fails to respond to the pressure of his own peers. More importantly, we find that managers will give their own time to helping a peer who is clearly out of step with the work group. Never underestimate the powerful social forces of the group in helping a manager develop a subordinate who is in trouble. If you have a problem child, do not overlook the fact that the entire work group may need counseling in a team setting to solve the problem.

All too often, when introducing a new set of concepts to line managers, we fail to recognize that we

can try to teach too much too soon about the technical details of the new concepts. We always try to avoid this mistake. Line managers already know far more from their own experience than they are using.

Importance of Increased Involvement

In the Mini Breaks-Maxi Profits Program we introduced the concept of increased involvement of hourly workers in improving company operations. We did not give our line managers a clearly defined structure to accomplish this. The training in work simplification techniques did explain the use of project teams. We then asked the line managers to find additional ways to involve workers. Crew meetings and crew training were later identified by them as successful techniques based on actual mill experience. Out of this experience, a new formal structure of involvement was created. Now, we are engaged in developing and refining the details of the new formal structure.

One of the most important functions of staff people is to identify the significant creative ideas which are developed spontaneously by the line organization. Human ingenuity often already has developed great ideas for solving most problems of the organization. Staff should somehow find these ideas, describe them, and make them available to all other members of the organization. With our new work improvement system, we feel that we finally have a practical framework within which we can put this philosophy to work on an objective basis. ■

If the line manager is to be effective, he must recognize that standards of performance create identification of problems. He is aware that these problems may be based on faulty assumptions, and the absence of imagination to see opportunities for innovation. He therefore listens, has respect for the ideas and opinions of others, and allows each employee to challenge the system through proposed innovation and change. In short, he recognizes that opportunities for innovation offer greater opportunity for profits than the blind use of standards of performance as the final answer in creating operating objectives.

The history of the Mini Breaks-Maxi Profits Program, and the birth of the Work Improvement System, in Southern Kraft Division in 1970, rests on the foundation of six previous years of formal management development activity. It is a story of the application of learning theory to a work environment. It contains some important lessons for the management of training activities.

Lessons From Recent Experiences

First, it is important to recognize that operating level managers need early warning of any important changes in operating conditions. This provides a frame of reference for defining problems and identifying changes in behavior which are needed to meet the changes in conditions. Training should be planned to accomplish the critical changes in behavior which are necessary to achievement of objectives.

The Mini Breaks-Maxi Profits Program was born out of sharp change in operating conditions. We had the advantage of lead time for planning provided by the alert responses of corporate management. Through the years, we had become accustomed to managing very large capital improvement budgets. Suddenly, in July, 1969, we were told that we should not expect much in the way of capital funds in 1970. We had several months advance notice that we would be playing an entirely new ball game!

The training function became active in implementing the Mini Breaks-Maxi Profits Program in early November, 1969. The Division Management Development Department was asked to develop a training strategy to accomplish reduction of downtime. The important lesson in this event is that the need for training was the outcome of an operating goal to reduce downtime. All too often, the training organization engages in abstract forms of training which are not related to actual operations improvement needs identified by line managers. A few months before, we had evaluated work simplification as an involvement

technique. The pilot study of work simplification techniques gave us real insights into the powerful leverage of involving our employees in organization change. At one mill, a project team study of the storeroom operations resulted in changes in storeroom procedures which produce annual savings of approximately \$100,000.

We learned from this successful experience that employee involvement is essential to making any important organization changes.

An important lesson is implicit at this point of selecting the training approach in an actual mill environment. We had learned how to use the techniques and get acceptance of line management. When we presented our recommendations, we had more than speculation about the success of the techniques of work simplification. We had a strong success story with the support of a mill manager, his mill staff, and his department heads. The proposal to use work simplification was approved as a strategy of training to reduce downtime on our paper machines.

We made an important change in introducing the Mini Breaks-Maxi Profits Program. Previously, it had been out practice to bring the mill managers together first to explain a new program. Experience had taught us that each mill manager typically returned to his mill with enthusiasm, but with his own supervisors uninformed about the new program. This placed all the burden on the mill manager to explain the program. In this instance, we prepared the production superintendent and maintenance and engineering superintendent to plan their mill program. They were then able to return to their mill and assume responsibility for developing mill plans to implement the program. One of the lessons that we confirmed, in this instance, was the need to train the senior mill staff in advance. This did not take away each mill manager's freedom and responsibility to develop his own plans. But it did relieve the manager from the details of educating and training his own staff in the details of the program.

The process of setting objectives for reduction of downtime in each mill in late 1969 and early 1970 clearly demonstrated the multiplying effect which occurs when objectives are set on a team basis. Our early experience with management by objectives stressed the man-boss relationship as the context within which objectives should be set. In the early stages of experience, the emphasis should be on setting objectives through discussion between man and boss. However, as individuals acquire maturity with objective skills, objective setting should shift to small work groups, and finally involve a joint setting of all departmental objectives.

Optimum Performance

Related to Optimum Relationships

Optimum performance is a result of creating optimum relationships between all operating and service functions. For example, when a paper mill superintendent presents his proposed objectives to all other assembled departmental managers, this is a great opportunity for other managers to learn about their own

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