

Stress prevention for assembly-line workers

The manual *Stress prevention for blue-collar workers in assembly-line production* (CONDI/TWP.1/1997), by Dr S. Kvarnström (former Medical Director, Asea Brown Boveri), can be obtained upon request from the Conditions of Work Branch. The following section is taken from the manual.

Stress in assembly-line work

Assembly-line work is often performed in a workplace environment with physical problems, such as noise, vibrations and dangerous machines, which can all be important factors in stress.

The feeling that supervisors do not care about creating a good work environment is another important factor of stress. Furthermore, technical development in assembly-line work, especially in large companies, has often resulted in more complicated tasks for the workers, who may have difficulty in maintaining an overview of all the steps in production, which may in turn result in more stress.

What an individual considers to constitute a risk can cause as much stress as a real risk. If danger has been eliminated, it is very important to convince the worker that this has been done. Even a slight suspicion that all is not faultless can develop into a stressful situation.

The magnitude of stress in manual work, and especially assembly-line work, can involve extremely high costs. It has, for example, been estimated in Sweden that work-related muscular and back disorders cost more than the national military defence, and around half of these types of disorders are generally considered to be due to stress.

In a workshop where 17 workers had more than 30 per cent absence due to sickness and around 50 per cent personnel turnover, the occupational medical department was of the opinion that the work organization was at fault. The files of all the workers who had been working there in the last five years were analysed to find out what had happened to the workers with regard to their health. It was found that all but two complained of pains in the muscles and neck. Based on these results, as well as on figures for absence due to sickness, staff turnover, etc., a major change in work organization was undertaken. The result was very good: staff turnover went down to zero. Sick leave was reduced by half in a short time and for years no more cases were reported for compensation.

Practical ways of eliminating stress for assembly-line workers

Based on a large number of practical examples, the manual reviews many practical ways of eliminating stress for assembly-line workers. These range from methods of strengthening the individual's response to stress, to improving the physical work environment and changing the organization of work. It contains sections on preparing for the change process, introducing change and the issues to be covered by change.

Finally, the manual outlines a number of important features of the new organization of work that is developed with a view to preventing stress and which in very many cases turns out to be much more efficient and productive than the former organization of work. These features include:

- *working in teams* of a maximum of ten workers, which tends to improve motivation, provide support and security, and increase productivity;
- *a new leadership*, with special training for leaders and the delegation of more responsibility and authority to the place where the actual value is added to the product, for example to workers and team leaders;
- *sharing goals*, based on a vision of the company and including team influence and participation in the setting of goals, particularly with a view to overcoming the great distance which often exists in assembly-line work between top management and the workers on the shop floor;
- *enhanced dialogue*, normally through the holding of regular meetings with the teams, where possible with the participation of a member of the top management (for example, through a system of each team being sponsored by a member of the management), as well as through the organization of special occasions for reasons which may include the setting of new goals, discussing the results of analyses or reporting on visits to other companies; and
- *continuous improvement*. Improvements in assembly-line work based on technical advances or new equipment often take the form of big strides forward, with no progress at all being made between them. A modern organization of work, which is based on work enrichment and working in teams, favours continuous improvement through the involvement of workers and teams in identifying and solving problems.

The manual concludes that the path from a *stressful* to a *stress free* environment in assembly-line work can be long and difficult, but that the rewards in terms of personal fulfilment, both for managers and workers, as well as in terms of cost

reductions and increased efficiency for the enterprise, largely compensate the major effort which may be required.