STREAMLINING THE PRODUCTION PROCESS AND REDUCING STRESS

WHAT WAS THE PROBLEM?

Major dysfunctions, increased absenteeism and rising numbers of unidentified product defects in a manufacturing job.

CRITICAL ISSUES

Psychosocial aspects amongst the staff groups complicated the problem. The challenge was to understand the mechanisms involved and provide an action plan for the managers

RESPONSIBLE FOR THIS PROJECT:

Bernard Michez and
Samuel Le Gal,
www.ergotec.fr
bernard.michez@ergotec.fr
samuel.legal@ergotec.fr
Tel : + 39 (0) 562480151

OUTCOMES

In the short term, the resources had to be increased to face the activity peaks. The managers of the two teams, belonging to different services, solicited the head of the site to get some global reallocation of the resources.

In the long term the organisation was adapted to better balance the production and quality control functions.

WORKING SITUATION AND PURPOSE

The purpose of this article is to describe the results of this service, showing the usefulness of the coupling of different methods of diagnosis in a work situation. Specifically, the information obtained during interviews on the one hand is complemented by observations on the other hand. Particularly for the analysis of situations where psychosocial risks are suspected, this coupling is essential. The symptoms presented by people and the difficulties they express come from such a possible variety of factors that an objectification by facts drawn from observation of the real work is essential.

Other methods of data collection and processing will not be discussed here (statistics, task analysis, trace analysis, tests and simulations...), nor will the project management, the implementation of the intervention, the social construction or preliminary meetings ... be presented. Instead we chose to focus on one point at stake in the intervention.

Our view is that the two methods (interviews and observations) should be used iteratively throughout a diagnosis. Furthermore, the sequencing of their use is both useful to the speed of diagnosis and the mobilization of actors in a project. Indeed, it is often best to start with the interviews. They will provide descriptions and feelings that are always useful for hypothesis generation and work observation sampling. The stake here is the reproducibility of a diagnosis based on both interpretations shared between the actors and the verifiable facts.

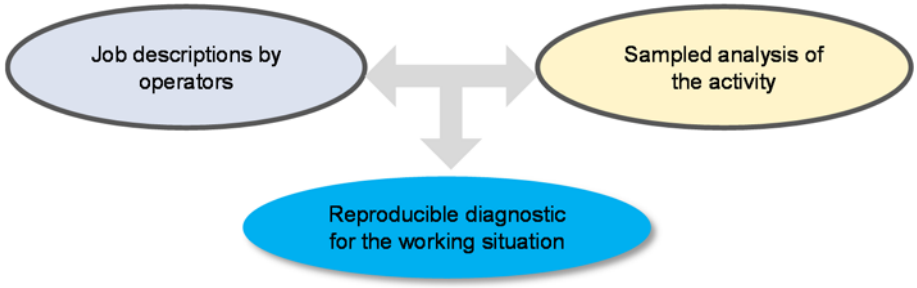


Figure 1: Diagnosis: coupling between interviews and activity analysis by observation

FINDINGS

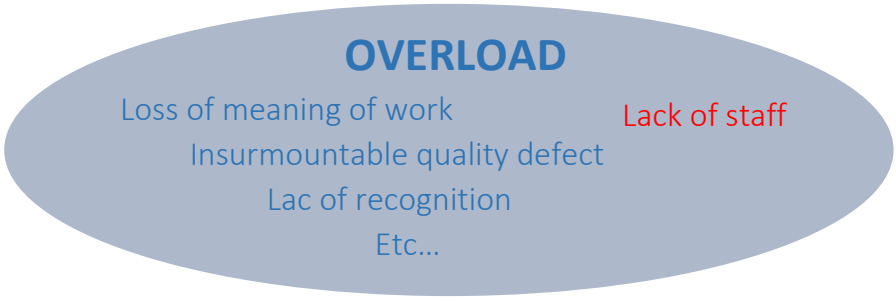
Data from interviews

The social atmosphere was tense. After studying the work documentation in the concerned workshops, we initiated the social construction of the intervention and conducted interviews with the operators. It was the best way to start the work, because it allowed us to introduce ourselves, describe our approach (centered on work and not on the person) and to sooth the situation. These interviews were carried out most commonly within small teams. To conduct the interviews, we used the technique of “explicitness interview”, to gain the most accurate information from operators.

EVALUATION

To help teams immersed in a work situation, we must apply methods for listening, to identify subjective factors at work, but also ways of objectification. This is where the concept of reproducibility is important for us. Identifying the level of a variable that generates difficulties is not enough. We must test our hypotheses by experience of the activity and then demonstrate what we advise. For this, the observation of the activity provides verifiable facts that extend beyond our presence. Start with interviews which help to target and sample the observable. This is also an efficiency issue for ergonomic intervention. During his observations, "the analyst" must still "keep an eye" on the work situation as a whole, so as not to exclude the effects (and determinants) that have not been verbalized in interviews.

In this paper, we describe the opportunities offered by this type of procedure, but it is also possible to proceed first with the observations and use interviews to validate interpretations of observed elements.

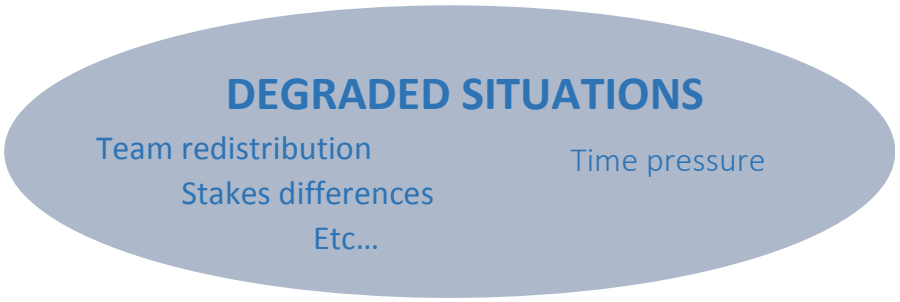


The summarized results are shown in the figure on the left. Beyond facts partly raised by the operators, their interpretations and feelings, the issue of overload emerged and the teams pointed to a significant lack of resources, "There is not a sufficient number of quality controllers. When we get reinforcements it takes time to train the newcomers, but production always wants everything immediately ... "

The data collected showed the level of the discomfort; general exhaustion of the quality controllers. From these elements, we constructed sampling criteria for the periods and locations of the observations. We made observations over 3 time slots (morning, afternoon, night), on the line assembly stations at the beginning, middle and end of the process.

Data from observations

From the first observation range, a fact appeared that was not denied later: There were hazard situations to which the teams were exposed. Taking the 5 am shift, the ergonomist noted that the programmed activities would be impossible, as the parts that were to be mounted were missing, the supplier being out of stock. No one knew when this would be rectified. The team leader then decided to allocate the production team to be reinforcements at another assembly station. The quality controller and two production operators remained at the initial assembly station to make preparations and be ready in case of the arrival of the missing parts.



DIAGNOSIS

The coupling between the interviews and observations of the activity confirmed the feelings expressed by the quality controllers. They were very overloaded, and this since several months. However, this was not related to a lack of resources. Even by doubling the workforce, the problem would not have been solved. The issue was about adaptations when faced with degraded situations.
We saw that the production team could be rapidly reorganized to help another team in the workshop. However this was not possible with the quality controller. In the example, when the parts arrived, the production team came back onto the job, aided by a team from another assembly station, to try to catch up. At this stage, the quality controller, who remained alone, was overwhelmed by the workflow.