

INNOVATIVE WORK ORGANISATION FOR MOVING SUPPLIES

Organisation

De Oesterbank vzw

Introduction

De Oesterbank vzw is a non-profit organisation for about 400 workers with mental and/or physical disabilities who are not able to perform a regular job. In this industrial supplying company, any type of products can be assembled to ready or semi-ready product stage for several branches of industry, e.g., metal, wood. The company is used to targeting their production process to the needs of their customers. Ergotherapists adjust the jobs that the workers perform to their capacities.

In Oesterbank, the old working process included collecting and carrying several combinations of components and supplies repeatedly, within a limited amount of time. Although there was limited time to perform the task, the quality standards were high.

Working methods

There were three main areas of work: buffer stock, incoming orders, and packing.

A buffer stock was maintained in the production hall.

In the incoming orders area, the tasks were:

- taking the necessary trays from the buffer stock;
- putting together a provisional order;
- returning the surplus to the buffer stock;
- depositing the provisional order in transport crates and stacking them.

In the packing area the tasks were:

- taking a transport crate containing a provisional order and carrying it to a packing workstation;
- emptying the crate at the workstation;
- placing individual items in the end packaging;
- storing packed goods in transport crates and carrying them to the control point.

The consequences of this working process were that:

- the production was highly dependent on the physical capabilities of the workers and it was difficult to find suitable candidate workers to perform these tasks;
- the high physical load of the tasks caused a large number of musculoskeletal complaints and high rates of absenteeism due to the physical strain.

Aims

The aim of the reorganisation process was to reduce the physical load of the job, thus improving the match between the physical demands of the work and the capabilities of the workers. Another aim of reducing the physical workload was to reduce the prevalence of sickness absence.

What was done, and how

A detailed study was carried out to identify the problems of the old working process. The high physical load and musculoskeletal problems seemed to be related to the many manual lifting and carrying tasks and to standing for long periods. Another problem was the combination of the high repetition of the working operations and high time pressure of the work, which may increase the risk of errors, of accidents and of musculoskeletal or other health problems.

The working process was redesigned to reduce the physical workload. This was done without introducing fear for loss of jobs. The redesigning process included the following changes and adjustments:

- to avoid any unnecessary manual lifting and carrying tasks, the flow of materials and semi-finished products was limited to the minimum that was needed;
- supplies were transported by roller conveyors and conveyor belts to avoid manual lifting and carrying;
- automatic picking of parts and materials for an order was introduced to avoid manual lifting and carrying tasks;
- more opportunities to perform the various activities while sitting down instead of standing were introduced; by sitting down, the strain on the back and legs is reduced;
- extra manual handling was avoided by integrating quality control into the production process;
- a neatly arranged and orderly production process was created. If any problems occur they should be recognised immediately, in order to give immediate and proper assistance to solve the problem and avoid extra production pressure;

- several aspects of the working process were improved to optimise the working postures and reduce the risk of work-related health problems; this involved the optimising the chairs, table heights, workstation designs, lighting and colour policy; it was done in cooperation with Hogeschool West-Vlaanderen HIEPSO;
- repetitive operations were avoided as much as possible;
- the working tempo was reduced to a fixed, but slow tempo to match the capacity of the employees;



Figure 1 A new transportation table was introduced

- items can be placed at table height instead of pallet height (close to the floor);
- this wheeled table has a built in roller conveyor to be able to push the product to the next step instead of having to lift and carry it;



Figure 2 The working method was changed

- the box with product parts is removed from the transport crate by lifting the empty box only, leaving the goods in the transport crate;
- the transport crate is ready to be pushed further on the roller conveyor;



Figure 3 A roller conveyor was introduced for automatic transportation

- the warehouse crate is pushed from the roller conveyor to the conveyor belt that brings the crate to the counting area automatically, instead of by manual carrying;



Figure 4 Ergonomic improvements were made

- the counting task can be performed either standing or sitting; the crate is put on a sloping surface for ergonomic reasons, i.e., to get a better view on and reach of the contents of the crate; transportation of the smaller crate to the next station was automated;
- the crates pass by and each worker takes an item from each crate and puts them together to make a collection, instead of spreading out collections on large tables as they did before the reorganisation took place.



Figure 5 The working process was changed

What was achieved

Redesigning the working process and work places had many positive effects:

- the manual lifting tasks have been reduced to 5% of the amount of lifting in the old working process; the workers can perform their tasks while sitting down in all working places except for the warehouse work;
- the workstations have been ergonomically designed to prevent workers from developing MSDs from their working postures and movements when performing their tasks;
- the capacity level of the workers that is needed for performing the job was reduced to the level of the candidate workers that were available; this way, suitable work could be offered to a special needs group of people who, in the past, never received a suitable offer of work because of their physical disabilities;
- because of the reduced tempo, work stress from the production work was reduced to a level where no stress was reported anymore;
- because some of the tasks were eliminated, the working process became more efficient;
- the work places had become more transparent and orderly, because workers sat down instead of walking around, creating a lot of traffic;

- the risk of tripping and falling over crates or trays is eliminated since all conveyance trays are transported on roller conveyors;
- only one trained person is responsible for the system supply and needs to be in possession of a break knife; in the past, everyone needed a break knife.

Costs

The new working process required an investment of EUR 450,000, which can be recouped in 10 years time. This was the investment for a single installation. Installation of a second installation would give a price reduction of about 20%.

Other costs concern production costs, i.e.:

- energy consumption - engines, compressed air, lighting, etc.;
- fixed costs such as the accommodation and heating of the production hall;
- maintenance costs, i.e., the maintenance contract with the supplier.

Benefits

The redesign had a positive effect on the productivity and capacity requirements of the workers. In the old working method, the capacity was 3500 collections per working day. The work offered employment for 18 people from function classification “2”, which means that they need to be able to work independently, that important physical qualities are required and that “normal” intellectual capacity is required. The capacity in the new working process increased to 5000 collections per working day. The work offers employment to 21 people from function classification “4”, which means: a performance assignment, no physical strain is required and limited intellectual capacity is required.

Because of the increased productivity, there was a 10% reduction of costs for the client, which offered the company and their workers a better job security.

The reduction in capacity requirements yielded an increased subsidy from the Flemish government for employment of a special needs group.

Another subsidy of EUR 50,000 was received from the European Social Funds, in return for the recognised pilot project within the innovative labour organisation.

The working space needed for the process had been reduced to approximately 50% of the space required for the old method of working.

Future possibilities

This project can be copied to other (collection) jobs within the company, thus increasing the benefits.

Moreover, other clients and markets are being explored and approached. Potential clients have already visited the company to have a look at the organisation.

Further information

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Transferability

The example shows that it is possible to apply the same rules (taking into account the specific needs of this specific sector) in workplaces for disabled persons as in the more traditional (ordinary, regular) workplaces. This type of redesign of the working process and workplaces can be applied to other production companies within this specific sector too. The benefits of increased productivity and reduced capacity requirements can be expected to apply to other companies that offer subsidised work to workers with physical and mental disabilities.

However, transferability to other European Member States may be a problem, if these Member States do not have these types of subsidised workplaces for disabled people.