WISE +

Work Improvement in Small Enterprises

Action Manual
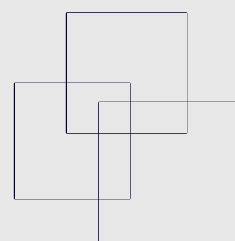
International
Labour
Office

WISE +

WISE + Action Manual

Developed and piloted within the ILO/DANIDA project:

Improving Job Quality in Africa through concerted efforts by Government, Employers and Workers

Conditions of Work and Employment Programme

Foreword

Work Improvement in Small Enterprises (*WISE*) is an innovative approach to improving working conditions and productivity in small and medium-sized enterprises around the world. It is not simply a training package, but a process in which entrepreneurs and managers are empowered and supported to address working conditions issues through the identification, sharing and implementation of local and affordable good practices. In the long term, the improvements in working conditions achieved are sustained through the development of supportive networks of local entrepreneurs and trainers who continue to share ideas and practices, motivated by the measurable improvements in productivity that participants experience.

A series of training modules and guides, first published in 1988, form the heart of WISE. Until now, these have provided guidance on nine technical areas of working conditions, all of which address the physical organization of the workplace and work processes and simple ways to alter these, so as to improve safety and health and increase productivity. These manuals have been used, adapted and translated into more than ten countries in Africa, Asia and Latin America, evidencing the flexibility and effectiveness of the WISE approach.

WISE-R (*More* Work Improvement in Small Enterprises) builds upon this success and is designed to meet the needs identified by *WISE* trainers and entrepreneurs around the world to expand the *WISE* package to include other key dimensions of working conditions. *WISE-R* consists of six new modules and training guides that address not only the physical work environment, but also the more complex day-to-day challenges that entrepreneurs face when handling employee recruitment, management and motivation.

WISE–R is a natural extension of the original *WISE* manuals. It reflects the global recognition that the employees of a business are not only often a significant investment, but that their performance holds the key to the success of the business. *WISE-R* reflects this reality and takes on the issues that are central both to workers' recruitment, retention and motivation, and to maximizing individual productivity in a safe and healthy way: wages, working time, maternity protection, work-family balance, management and motivation, and workplace relations.

As with *WISE*, the suggestions made in *WISE-R* are both practical and low-cost. The focus of these ideas is, in fact, to introduce simple working practices and measures that can make a huge difference to the motivation and the ability of employees to perform their job and, consequently, to the productivity of the business.

The concept of combining *WISE* and *WISE-R* into a *WISE+* package arose in the course of a six-month period of pilot testing carried out in Mozambique and the United Republic of Tanzania in 2009. Following the development of the *WISE-R* modules, a decision was taken to pilot the *WISE* and *WISE-R* training modules in tandem. The implementation phase was carried out with the cooperation and participation of a range of local and national actors, including local entrepreneurs, employers' and workers' organizations, labour inspectorates, ministries of labour, training institutions and others. The feedback received following this exercise has suggested that combining *WISE* and *WISE-R* is an efficient and effective approach.

This *WISE+* binder brings together the *WISE Action Manual (1997)* with the new *WISE-R Training Manual* to create a complete *WISE+ Action Manual*. We have also created a second binder, which contains the *WISE* and new *WISE-R Trainers' Guides*. In the longer term, further work will need to be undertaken to fully integrate the *WISE* and *WISE-R* modules, and their respective guides. This WISE+ package is thus presented as a prototype, which is ready to provide a solid starting point for future work. The ILO would welcome the feedback of entrepreneurs and practitioners who will use and adapt the methodology to the multiple realities of workplaces around the world.

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HIGHER PRODUCTIVITY AND A BETTER PLACE TO WORK

HIGHER PRODUCTIVITY AND A BETTER PLACE TO WORK

Practical ideas for owners and managers of small and
medium-sized industrial enterprises

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ACTION MANUAL

International Labour Office   Geneva

Preface

This manual shows how to take simple, effective, low-cost action which raises productivity while improving conditions at the workplace. Owners and managers of small and medium-sized enterprises will find useful ideas on key topics such as the handling and storage of materials, lighting, work-station design, safe and efficient machine operation, plant layout and work organisation. These ideas are based on the actual experience of hundreds of owners and managers of small and medium-sized enterprises who have participated in training programmes organised by the ILO. The emphasis is on practical, locally appropriate measures directly related to productivity.

Workers also benefit from action based on this manual. Low productivity and poor quality of work often result from the same difficulties and lack of organisation that make work hazardous and unpleasant. Moreover, in those factories where management develops a long-term commitment to improvements in productivity, the involvement of workers is part of the strategy of motivation and change.

We are indebted to many individuals and institutions for ideas and examples used in this book. The entrepreneurs who allowed us into their factories and who contributed their practical knowledge and enthusiasm were essential. The training events could not have occurred without the help of employers' organisations, productivity centres, training institutions and labour inspectorates. We are grateful to the following for substantial contributions: Mr. Allan A. Gibb, Director, Small Business Centre, Durham University Business School, United Kingdom; Mr. David Gold, Training Officer, Occupational Safety and Health Branch, ILO, Geneva; Dr. Peter Hasle, Occupational Health Service, City Council of Copenhagen, Denmark; Mr. Juan Carlos Hiba, Laboratorio de Ergonomía Aplicada, Universidad Nacional de Rosario, Argentina; and Ms. Gabriele Trah, Conditions of Work and Welfare Facilities Branch, ILO, Geneva. Finally, the organisation of notes, handouts, sketches and other assorted scraps of paper and their various revisions into a final text would not have been possible without the patience and skill of Mrs. Susan Chevalier.

This *Action manual* is accompanied by a *Trainers' manual* which describes innovative ways of organising training events. Both manuals are intended to meet an important gap in the existing literature concerned with productivity and conditions at the workplace. We hope that they will be found useful in practice.

Contents

Introduction

If you own or manage a small or medium-sized factory, you are responsible for an important contribution to the national economy. People depend on you for jobs and for your products. Most of the growth in almost every country is expected to come from enterprises like yours.

In spite of their importance, many small or medium-sized businesses fail to grow and even to survive. It isn't easy to succeed in business. Problems of finance, production and marketing lead thousands to bankruptcy every year.

This is a book about survival and growth through building a more effective enterprise. The ideas you will find in this book are practical and low-cost. Many of them may already be applied in your own enterprise and in similar companies nearby.

As an entrepreneur, you are no doubt very busy. You have to face so many problems that you may not have had time to take a close look at some parts of your operation to see if they can be improved. There are probably a number of limits on productivity and quality which have built up over time. A small investment of your time could have a big impact.

What this book is about

The practical ideas you will find here are the result of several years of ILO action in co-operation with owners and managers just like you. In each case, the starting-point was a concern for survival and growth of the enterprise. Many entrepreneurs were asked the question, "How can you reduce costs and improve your production operations?" Their answers are probably a lot like yours, such as to:
- minimise waste of raw materials;
- cut damage to work items;
- increase quality of work;
- improve maintenance and repair of machines and equipment;
- introduce more efficient layout;
- cut idle machine time;
- reduce wasted time of workers;
- reduce stocks;

- allow more efficient change-over to new products;
- prevent accidents;
- introduce better work methods;
- organise more effectively.

A second question was also asked, "How can workers help?" It is no surprise that workers could improve in many ways, including:
- learning more skills;
- paying more attention to productivity and quality;
- taking better care of machines and equipment;
- avoiding absences and lateness;
- keeping the company's interests in mind;
- using proper work methods and organisation;
- working harder;
- adapting faster;
- following rules;
- meeting quotas and standards;
- being more disciplined and co-operative;
- avoiding accidents;
- making useful suggestions.

An enterprise which can constantly reduce costs, increase productivity and improve quality is much more likely to survive and grow. This means that you need to:
- make the best possible use of your facilities, machines and equipment; and
- get the highest level of efficiency from your workers.

Neither of these goals is simple to accomplish. There are constant problems to be solved in a small or medium-sized factory. You may have to cope with inappropriate machines; too small a building; problems with electricity, water or transport; poor-quality raw materials; and unskilled or poorly motivated workers.

This book indicates some basic principles and gives many examples of improvements which have a direct impact both on your production facilities and operations and on the motivation and efficiency of your workers. The improvements are low-cost, concrete and very practical. They fall under the following headings:

— *Materials storage and handling.* The storage and handling of parts and products is an essential part of all production processes. Done efficiently, it ensures that work flows smoothly and helps to avoid many delays and bottlenecks. However, storage and handling by themselves are not a source of additional value or profit. During these operations, goods do not acquire any new qualities. Just the opposite happens: materials are damaged or deteriorate, capital costs must be paid and accidents occur. For the entrepreneur, improved materials storage and handling mean recovery of misused space, less production time spent searching for tools and materials, lower capital costs due to less work-in-progress, simplified inventory control, fewer unnecessary operations and a better overall factory appearance.

— *Work-station design.* Most work is carried out at work-stations where workers perform the same task hundreds of times per day. The benefits from small improvements are thus multiplied many times. Awkward work postures and movements mean lower productivity and quality as well as greater fatigue. Simple improvements such as jigs, fixtures, stable work-surfaces or placing tools and materials within easy reach can have large payoffs.

— *Productive machine safety.* While no one wants accidents to happen, machine safety is often ignored because it is seen as costly or inefficient. This applies to workers as well as managers. However, using techniques such as modern feeding and ejection devices, it is often possible to increase productivity while at the same time eliminating the hazard. Where guards must be used, they need not be costly and above all they need not reduce productivity.

— *Control of hazardous substances.* Hazardous substances of one form or another can be found in almost all small and medium-sized enterprises. Exposure to many chemical substances causes fatigue, headache, dizziness and irritation of eyes and air passageways, resulting in a reduction of productivity and quality and increased absenteeism and turnover of staff. High levels of dust, oil, paints and other sprays, etc., interfere with efficient operations, require extra inspection and cleaning and may spoil materials or final products. Through simple and inexpensive means, it is possible to control most of these problems.

— *Lighting.* Better lighting and related visual improvements very often increase productivity and reduce difficulties and strain for workers. This is especially important for rapid or detailed work or for quality products. Better lighting does not need to mean higher cost. Use of daylight and regular cleaning and maintenance can improve lighting while reducing the electricity bill.

— *Welfare facilities and services.* Welfare facilities are an essential part of any enterprise. During each working day, workers need to drink water or some other beverage, eat meals and snacks, wash their hands, visit a lavatory, and rest and recover from fatigue. Welfare facilities are not something extra, nor a luxury to be attended to when all other conditions are satisfied and productivity is high. Good welfare facilities are essential to higher productivity. They improve the workers' health, morale, motivation, job satisfaction and attendance.

— *Work premises.* Most small enterprises are located in buildings which were not carefully designed for their current use. In addition, new equipment is often placed wherever there is the most space, which gradually results in a haphazard layout. Much can be done, even with older buildings, to improve ceilings, walls and floors. The impact of simple measures on ventilation, heat and pollution can be dramatic.

— *Work organisation.* Improvements in the way production is organised and scheduled can have a very large impact on both productivity and motivation. Modern work organisation techniques such as recombining tasks, setting up buffer stocks, introducing multiskilling, developing group work-stations and using product-based organisation have numerous advantages. These include smoother and more efficient work flow, higher product quality, greater flexibility, reduced down-time of expensive machines and reduced need for supervision. These techniques are a source of dangerous competition from large companies: their introduction makes the smaller enterprise more likely to survive and grow.

In addition to these eight technical themes, this book contains two chapters which are practical tools to help you identify improvements and take action. Chapter 2 is a *checklist* designed to introduce you to the technical subjects and to suggest practical ideas for improvement. Chapter 11 completes the book with a procedure for the systematic *implementation of improvements*, especially complicated or difficult ones. It also explains how improvement can become a permanent process in your company, not just a one-time measure.

How to use this book

Some of the entrepreneurs using this book will be participants in courses organised by employers' organisations, productivity centres, labour ministries

or other agencies. They will be able to go through the chapters in an organised and systematic way and will have an opportunity to move very quickly to a continuing process of making improvements and profiting from them.

If you are using this book by yourself, you should try to arrange to develop some of the opportunities provided by the courses. One of the best ideas is to work together with other owners and managers of similar enterprises. This will allow you to get free advice, to learn how others have solved the same problems you have, to see other enterprises in action and in general to benefit from the knowledge and experience of people you can respect because they have successfully built up their own company. You may be able to find a group of five to eight owners and managers through a trade organisation or chamber of commerce, among neighbouring enterprises or among your friends. If you can organise a small action group you should try to follow these basic steps:

(1) Carry out the checklist exercise (Chapter 2) in each enterprise in the group. Discuss the results together and let each owner come up with a list of priority actions.

(2) Discuss together each of the technical chapters (Chapters 3 to 10) and see if you can improve on your list of actions.

(3) Ask each group member to try out one of the more complex improvements in this list in the way suggested by Chapter 11 on the implementation of changes. Discuss the results as a group.

(4) Carry out improvements on your list. Meet with the group occasionally to talk about problems and new ideas.

It may seem to you that organising a group is a lot of effort and that you would be better off to spend the time in your own factory. You will be surprised how many good ideas can come from practical people like you who look at your factory and production methods with a fresh eye. You will also find that helping other owners and managers based on your own experience is often enjoyable.

If you cannot organise a group of people like yourself, you can still profit from the ideas in this book. Use the checklist, study the chapters, try out some improvements and then repeat the process. Change and improvement are dynamic. If you stop, you will lose what you had. If you continue, you will consolidate and build on what you have already accomplished.

One final point: it is always a good idea to be in touch with a trade association, productivity centre or government agency or other source of information and support. If you have followed a course they have organised, try to continue to benefit from follow-up and other activities. If you are working alone or in a small group, you may still be able to get technical help. If you feel that courses should be organised, suggest that a local agency or institute take a look at the *Trainers' manual* which accompanies this *Action manual*. They may be interested in setting up a programme which can expand your possibilities for action and growth.

2

Checklist

The checklist found in this chapter is a powerful tool for identifying improvements which can be made in your enterprise. The items it contains are ideas for action, not simply areas to check for possible problems. Most of the ideas are simple and can be easily applied. More information on each point is found in the following chapters.

The checklist should be filled out individually. It helps a great deal if several people fill the checklist out separately and then discuss their responses as a group. If you are taking a course, these group discussions will be part of the programme. If you have organised your own small group, make photocopies of the checklist to give everyone a chance to use it in each enterprise. If you are working alone, consider asking supervisors or some of your workers to fill out the checklist and discuss it with you. It is an effective suggestion scheme.

Once the checklist has helped you to identify improvements in your workplace, use the rest of this book to learn how to design and introduce improvements. The chapters follow the same order as the checklist.

Work-stations

6 Put switches, tools, controls and materials within easy reach of workers.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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7 Use lifts, levers, or other mechanical measures to reduce the effort required by the worker.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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8 Provide a stable work-surface at each work-station.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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9 Use jigs, clamps, vices or other fixtures to hold items while work is done.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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10 Adjust the height of equipment, controls or work-surfaces to avoid bending postures or high hand positions.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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11 Change work methods so that the workers can alternate standing and sitting while at work.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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12 Provide chairs or benches of correct height with a sturdy backrest.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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Productive machine safety

13 Attach proper guards to dangerous moving parts of machines and power transmission equipment.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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14 Use safety devices which prevent operation of machines while the worker's hands are in danger.

Do you propose action?

☐ No ☐ Yes ☐ Priority

Remarks

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15 Redesign guards which interfere with visibility, production or maintenance.

Do you propose action?

☐ No ☐ Yes ☐ Priority

Remarks

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16 Use mechanical devices or magazines for machine feeding to avoid hazards and increase production.

Do you propose action?

☐ No ☐ Yes ☐ Priority

Remarks

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17 Make sure machines are well maintained and have no broken or unstable parts.

Do you propose action?

☐ No ☐ Yes ☐ Priority

Remarks

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Control of hazardous substances

18 Substitute hazardous chemicals such as organic solvents with less hazardous substances such as caustic soda or soap.

Do you propose action?

☐ No ☐ Yes ☐ Priority

Remarks

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19 Make sure that all organic solvents, paints, glue, etc., are in covered containers.

Do you propose action?

☐ No ☐ Yes ☐ Priority

Remarks

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20 Introduce or improve local exhaust ventilation.

Do you propose action?

☐ No ☐ Yes ☐ Priority

Remarks

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21 Make sure workers exposed to dangerous substances wash their hands with soap before eating or drinking and that they wash and change clothes before going home.

Do you propose action?

☐ No ☐ Yes ☐ Priority

Remarks

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22 Provide adequate numbers and appropriate types of protective goggles, face shields, masks, earplugs, safety footwear, helmets or gloves.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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23 Instruct and train workers about proper use and maintenance of personal protective equipment and regularly monitor its use.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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Lighting

24 Add skylights and keep skylights and windows clean.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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25 Paint ceilings white and walls in light colours and keep them clean.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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26 Provide general artificial lighting adequate for the type of work done, by adding light sources, installing reflectors, or repositioning existing lights.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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27 Reduce distraction and eyestrain from glare by shielding or repositioning lamps, by using matt instead of shiny surfaces or by positioning workers so they do not face bright light from windows or other sources.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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28 Provide local lighting or adjustable lamps, especially for precision work.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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29 Clean and maintain light fixtures and replace bulbs regularly.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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Welfare facilities

30 Provide an adequate supply of cool, safe drinking water in all workplaces.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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31 Provide regularly cleaned sanitary facilities close to the work area, including soap for washing and separate toilets for women.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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32 Provide a separate, comfortable and hygienic place for meals.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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33 Provide storage for clothing, bicycles or other personal belongings.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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34 Provide first-aid equipment and train a qualified first-aider.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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Premises

35 Improve the heat protection of the building by backing metal walls and roofs with insulating materials.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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36 Increase natural ventilation by having more roof and wall openings, windows or open doorways.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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37 Move sources of heat, noise, fumes, arc welding, etc., out of the shop or install adequate exhaust, barriers, screens or other solutions.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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38 Provide enough fire extinguishers within easy reach and be sure workers know how to use them.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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39 Provide at least two unobstructed ways out of every floor or every big room.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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40 Clear passageways and provide markings or barriers to keep them clear. Keep them clear for movement of people and materials.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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41 Eliminate frayed, irregular, entangled or octopus wiring connections.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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Work organisation

42 Eliminate tasks by using machines which can combine operations.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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43 Keep workers alert and reduce fatigue through frequent changes in tasks, opportunities to change posture, short breaks, opportunities to talk with other workers, or music.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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44 Use buffer stocks to keep work flow constant while allowing self-paced work.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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45 Use quality circles or group work to improve productivity and quality.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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46 Rearrange layout and the order of operations to improve production flow.

Do you propose action?

☐ No   ☐ Yes   ☐ Priority

Remarks

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Materials storage and handling

The storage and handling of raw materials, components and products is an integral part of all production processes. Done efficiently, it can ensure that work flows smoothly and helps to avoid delays and bottlenecks. However, storage and handling by themselves are not the source of additional value or profit. During these operations, goods do not acquire any new qualities. Just the opposite happens: materials are damaged and lose their value, accidents occur and scarce capital is tied up in unnecessary stock.

In this chapter we discuss ways of attaining three goals:

- *Better organised storage.*
- *Fewer and shorter transport and handling operations.*
- *Fewer and more efficient heavy lifting operations.*

In each of these areas you will find ideas arranged according to a few basic rules. If you apply these ideas in your enterprise, you can expect numerous benefits, including recovery of space for production, more efficient materials flow, faster capital turnover, improved inventory control, reduction of time lost on unproductive work and a more orderly and attractive factory.

Better organised storage

If in doubt, take it out

Extra stock is a waste. It requires storage, record keeping and handling. It ties up capital, and some materials tend to rust, spoil or become obsolete.

Leaving stock around in the production area reduces the space available for production operations. The more cluttered your shop-floor is, the more likely tools and materials will be lost. Workers spend valuable time looking for things.

Consider each tool, each piece of raw material, each component or spare part. Is it in use? Is it really needed? If not, take it away.

Some of the most modern and efficient industrial enterprises practise "kanban" or "just in time" inventory methods. Nothing is to be in the production area until at most one hour before it is needed. If you want to compete, you should be willing to try the same ideas.
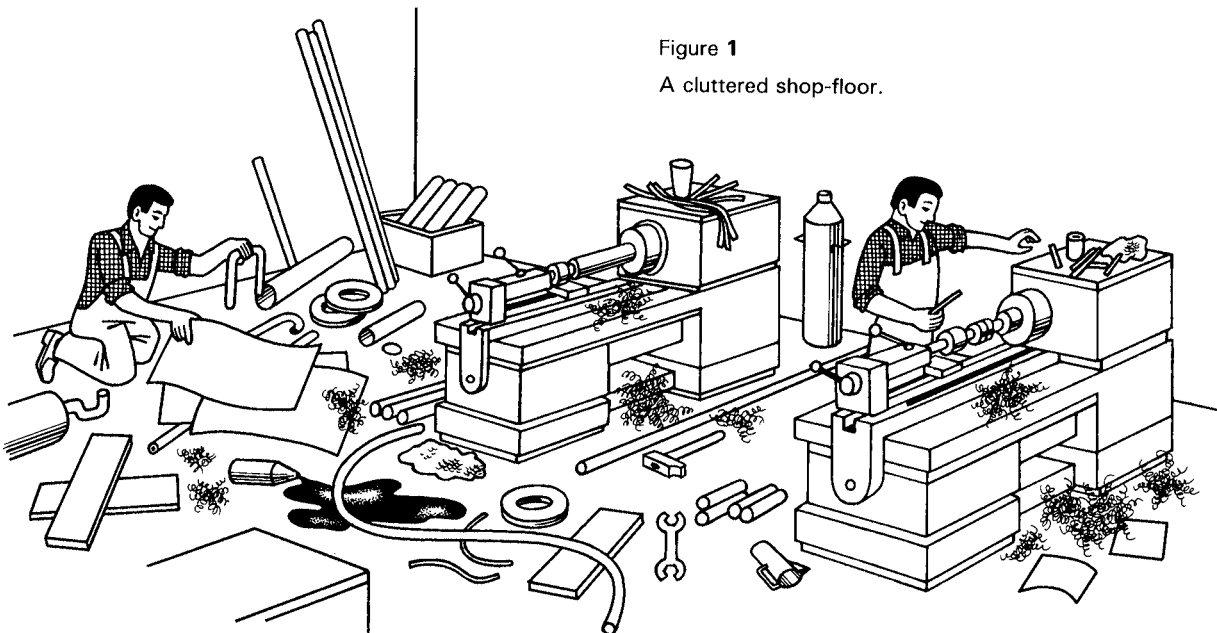
Figure **1**

A cluttered shop-floor.
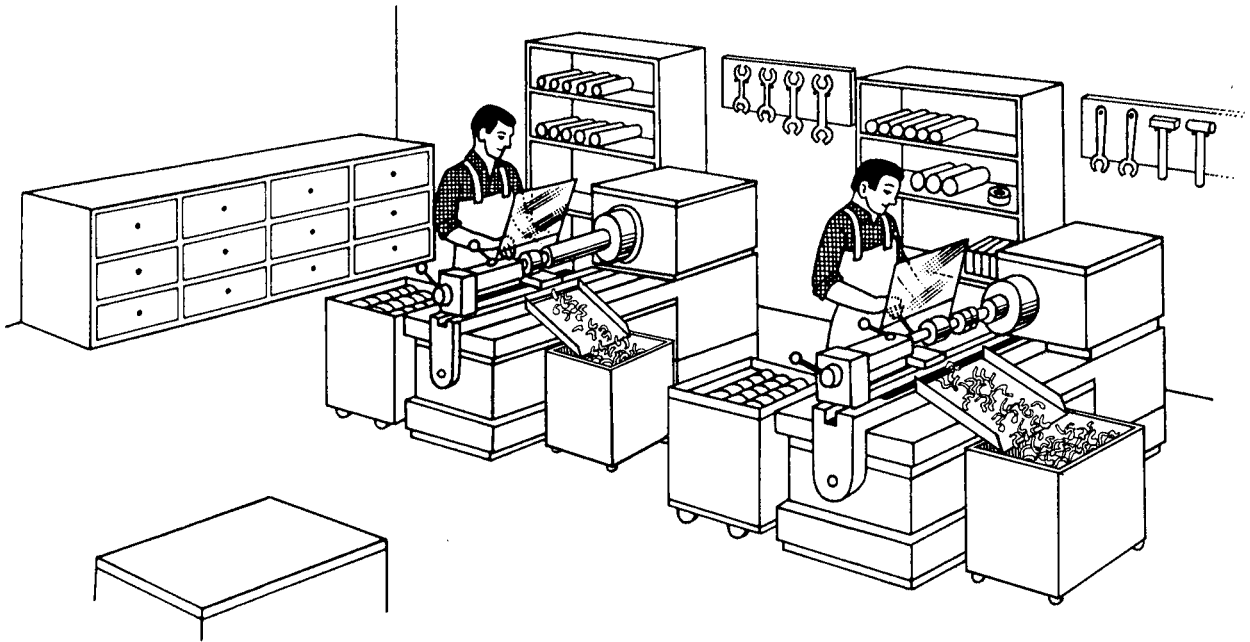
Figure **2**

The same shop-floor after removal of all unnecessary items

Figures 1 and 2 show the same work area before and after unnecessary items were removed. Do you feel the change has contributed to efficiency? To quality? Is it likely to make a better impression on customers?

Avoid placing materials on the floor

The owners of small enterprises often complain about the shortage of space in their workshops. But if we take a critical look, very often almost half the floor space is occupied by work items, tools, raw materials and scrap. Some of these goods have been sitting there for years, getting rusty and dirty.

Are we so rich as to tolerate the luxury of wasting half our production space? To face constantly the danger of accidents and fire? To bear the expenses of extra handling and of damage to materials?

The best way to stop this bad habit is to *prohibit placing anything on the floor and to monitor strictly the execution of this rule.*

The rule by itself is not likely to work unless special storage is made available for each item. It is not difficult to obtain or to make wooden pallets, supporting bars, containers, storage racks and shelves.
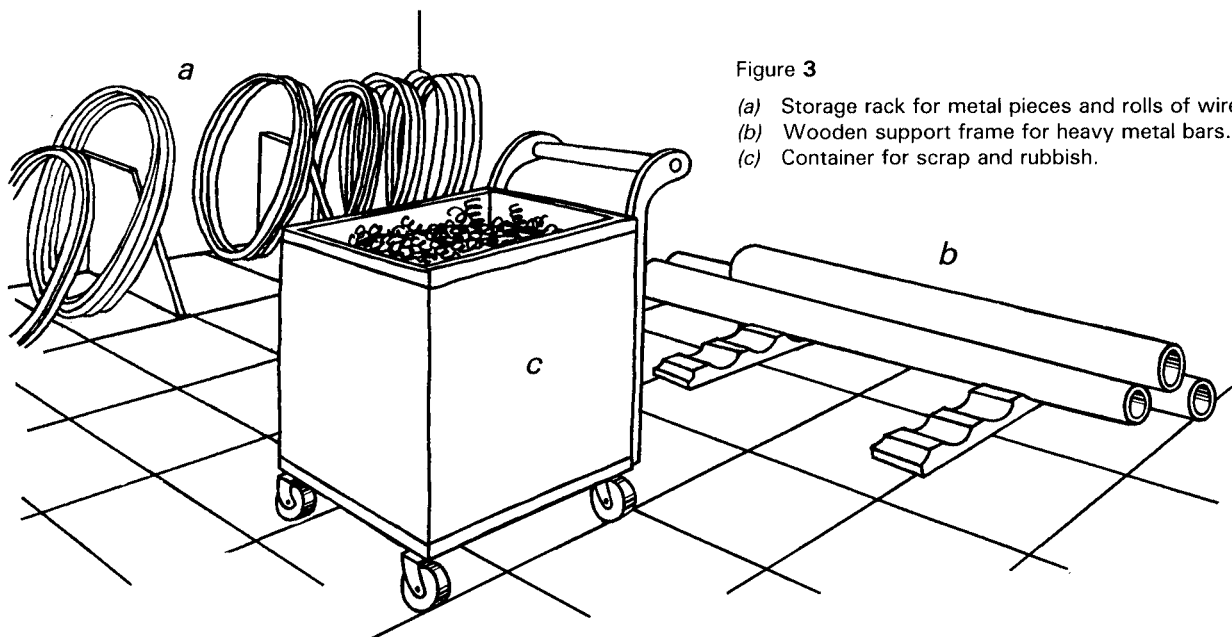
Figure **3**

(a) Storage rack for metal pieces and rolls of wire.
(b) Wooden support frame for heavy metal bars.
(c) Container for scrap and rubbish.

Here are some examples:

The total wall space can be larger than the floor area of your production shop. Multi-level racks help you to use it fully. This means:

— savings in floor space;

— easy accessibility of work items and tools;

— improved inventory control.
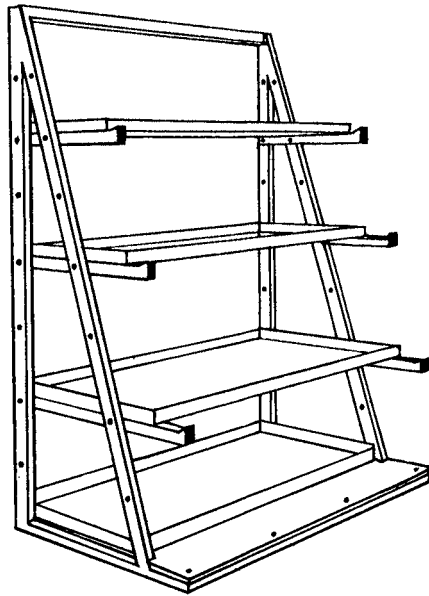
Figure 4

Vertical rack. Metal rods and bars of different profile can be stored efficiently in a limited area or near the job. Tray-type shelves provide room for small pieces.
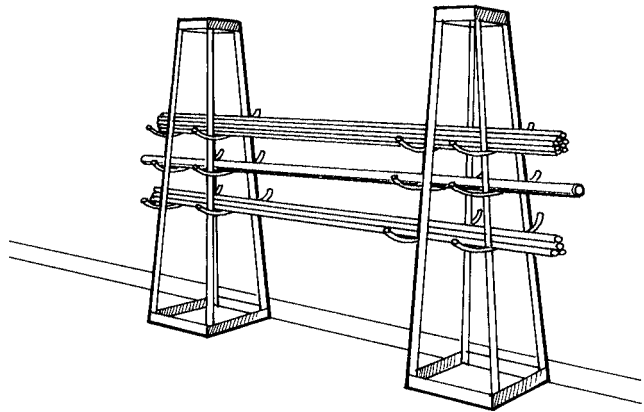
Figure 6

Horizontal bar rack. This free-standing unit may be used singly to store short pieces or two of these racks placed in line to store long pieces.
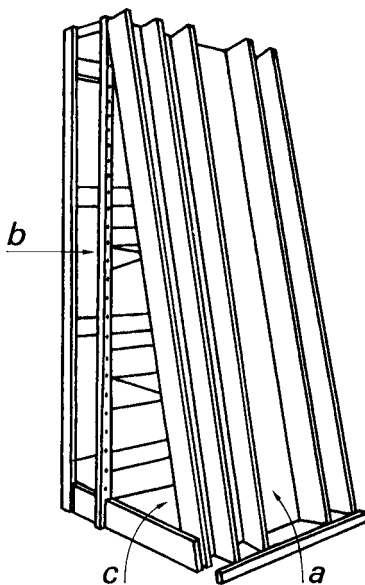
Figure 5

Metal and scrap rack. In this free-standing storage unit, the front section (a) slopes and has a number of compartments for storing angle iron, flats and bars. The back section (b) provides room for vertical storage of full-length metal sheets. Cut sheets can be stored in the centre section (c) on the shelves.
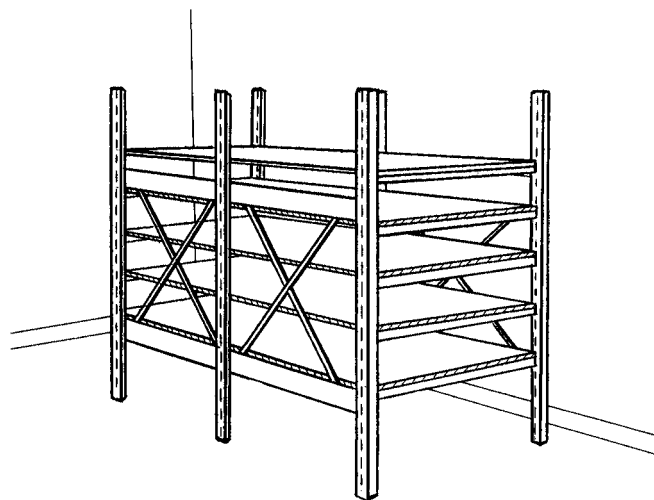
Figure 7

Multi-level horizontal storage rack for metal sheets or plywood. Remember to keep everything dry, otherwise water tends to spread between the sheets and damage them.
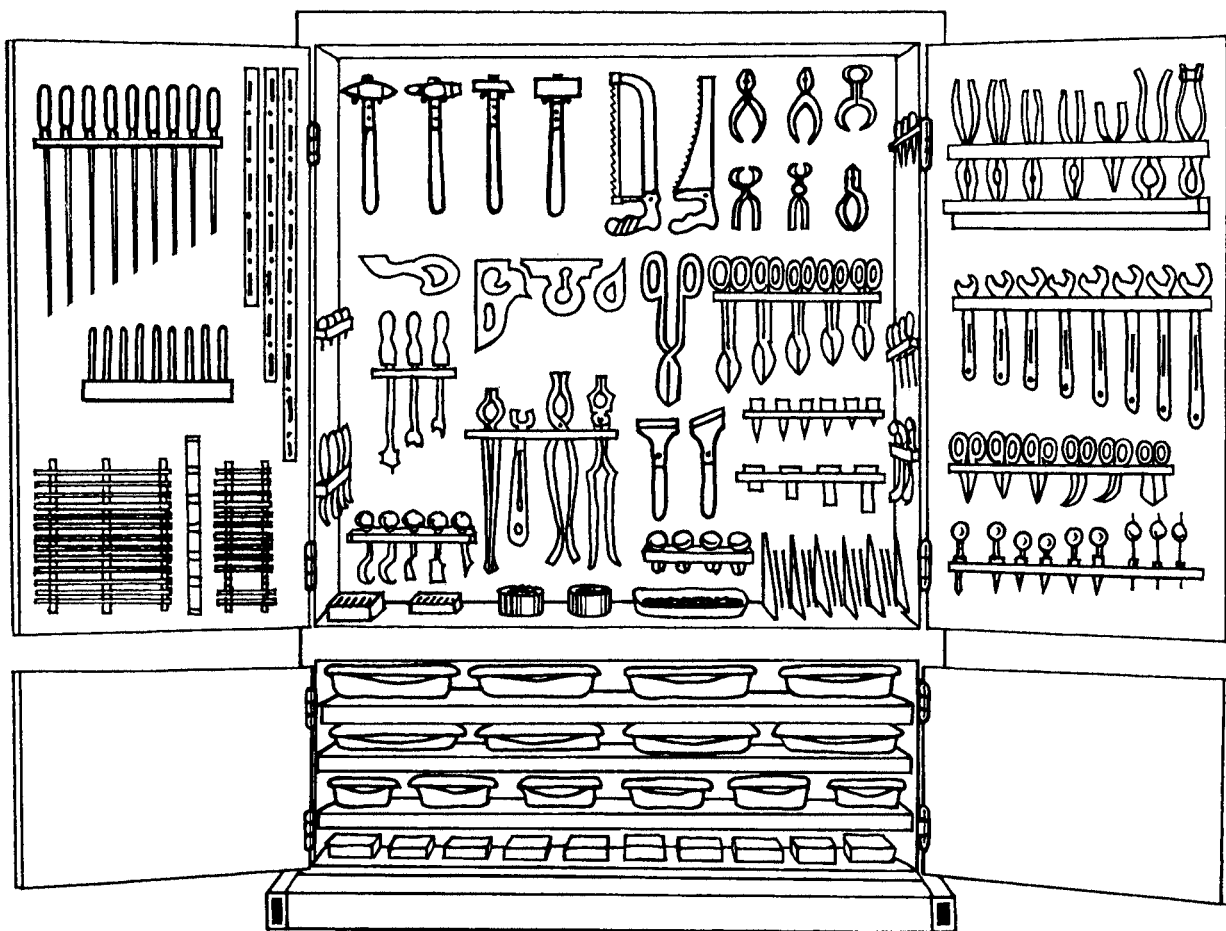
Figure **8**

A wall cabinet for tool storage. Made of wood panels and equipped with four locking doors, it provides easy access to any tool and takes an absolute minimum of floor space.
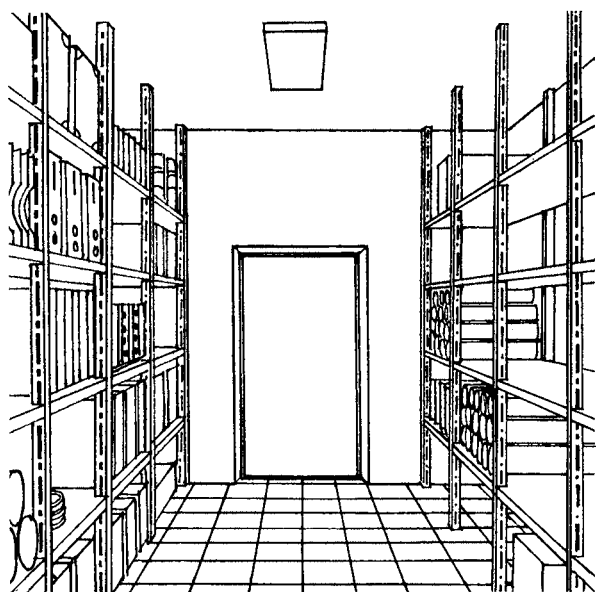
Figure **9**

Shelving designed to use wall space fully.
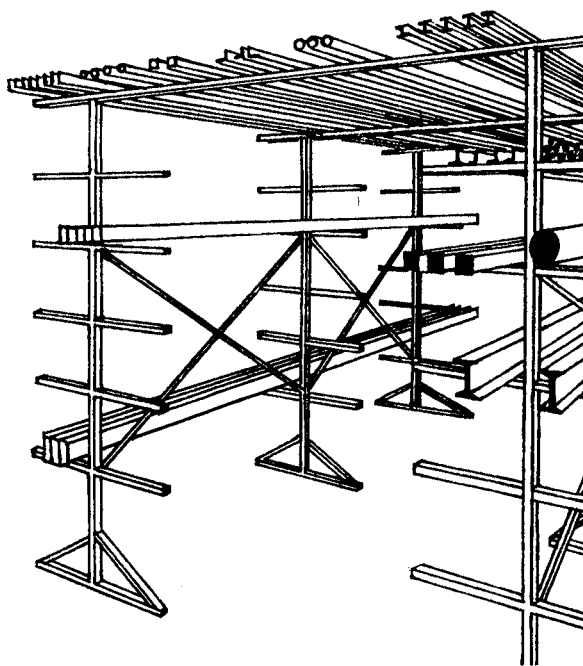
Figure **10**

Multi-storey racks for relatively light metal bars, rods and tubes.
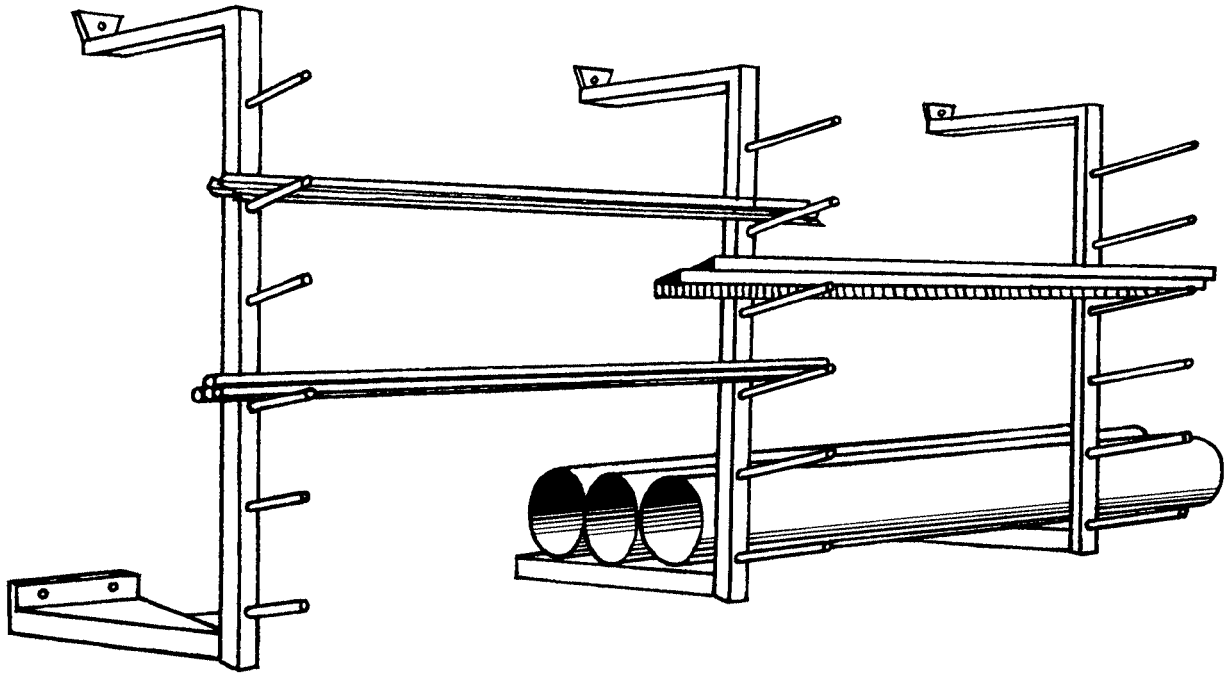
Figure **11**

A metal storage rack can be fitted to the wall at any point and used for storage of metal rods and bars of various lengths.
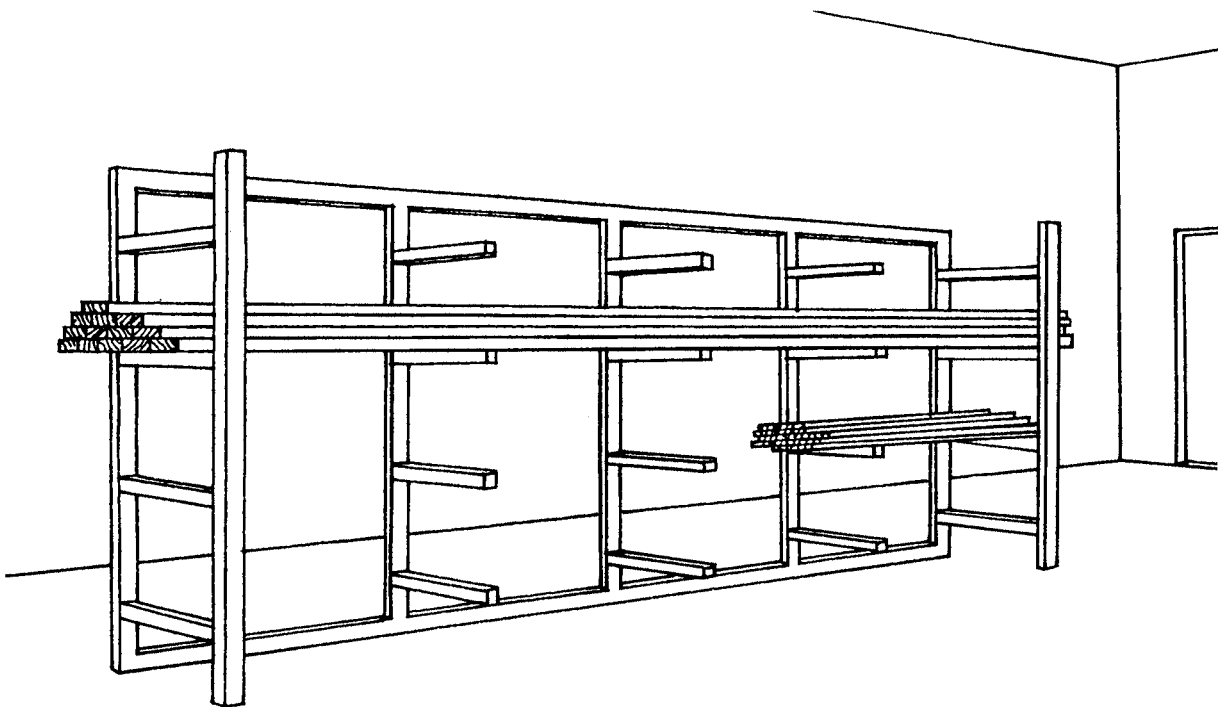
Figure **12**

An open-front rack designed to provide frontal access to the materials stored.

Provide a "home" for each tool and work item

Observe your production process closely and it is very likely that you will find that some of your workers lose time in search of "lost" tools, instruments and small work items. Even if you urge them to put everything in order, in a few days you will find the same problems as before unless care is taken to allocate a special, permanent place and a holder or a container for each tool or work item.

Consider the size, shape and weight of the item in order to choose the most appropriate means and place of storage.
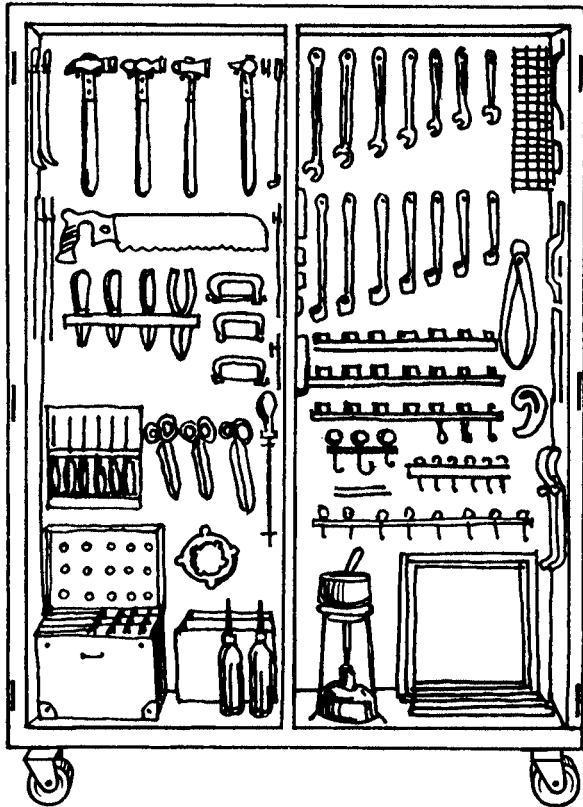
Figure **13**

Simple home-made flat tool storage makes it easy to
control inventory and to find the required tool quickly.

Figure **15**

Tool inserts are ideal for storing tapes, drills, cutters, etc.,
in sloping storage units varying in depth and width. Labels
can be fitted on the front side of the cross beams.

Figure **14**

The outline of each tool should be drawn to show where
it goes. This helps maintain order and immediately shows
if anything is missing from the tool board.
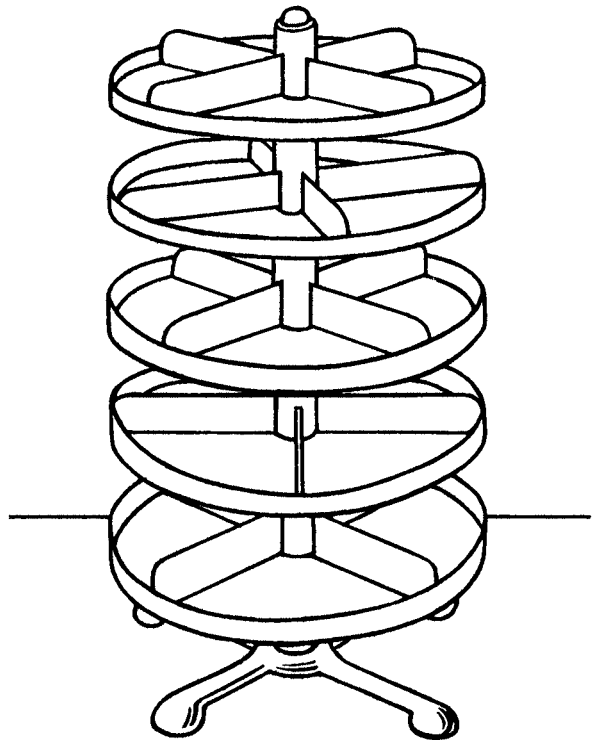
Figure **16**

Rotating bins. Revolving shelves eliminate wasted space
usually found at the back of a shelf. This is very
appropriate for servicing a group of operators sharing one
work-station.

Figure **17**
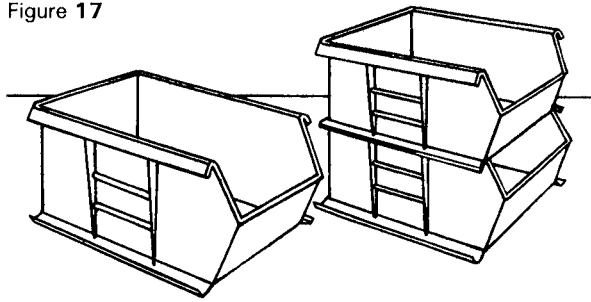
Figure **18**
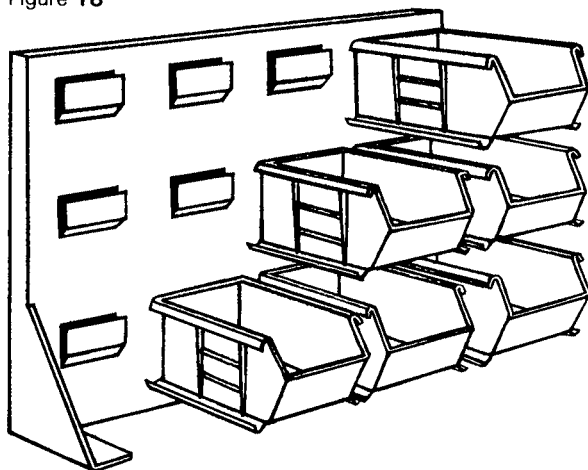
Figure **19**
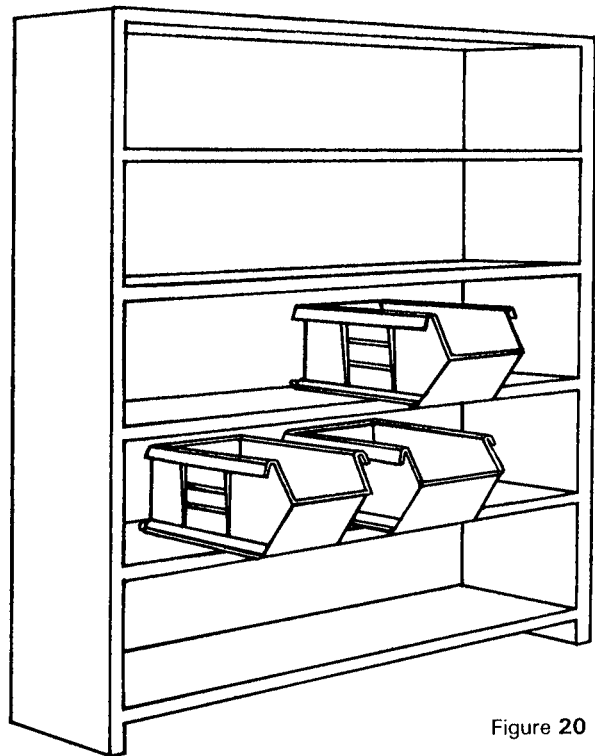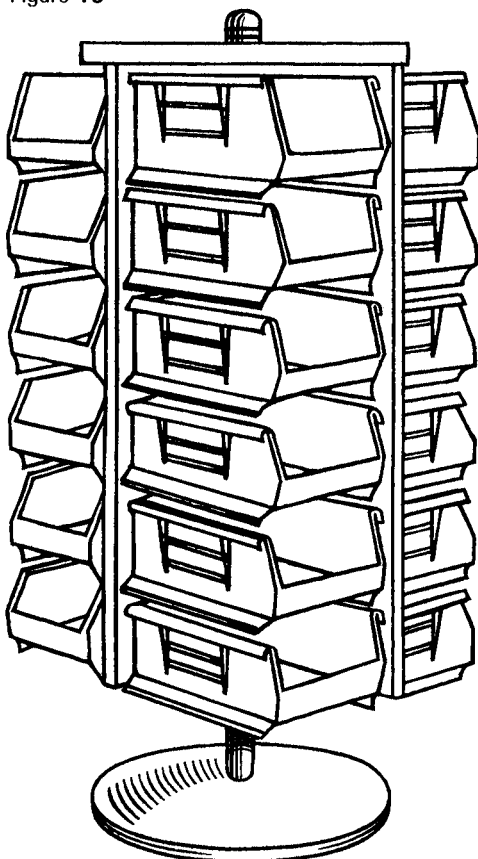
Figure **20**

Figures **17, 18, 19** and **20**

Hand bin containers (figure 17) for storage of small parts.
The front opening makes the parts easy to see and
provides ready access to the stock. The bins can be
stacked at the work-bench or placed on special racks
(figure 18) or on rotary racks (figure 19) or regular
shelves (figure 20).

Fewer and shorter transport and handling operations

Every time a worker handles a work item, time and
energy are lost. *Analyse your work operations and
see whether each handling operation is really
justified. If not, find a way to eliminate it.*

The number of handling operations is of course
closely related to the number of different tasks in
the production process. It is also related to the
order in which machines and work-stations are
placed around the shop. These subjects are part of
the overall organisation of production and layout of
your factory. They are covered in Chapter 10
because you will need to take into account the
ideas from several chapters before you are ready to
make complex improvements in work organisation.

However, there are several things which you can do
to improve handling operations without making any
major organisational changes.
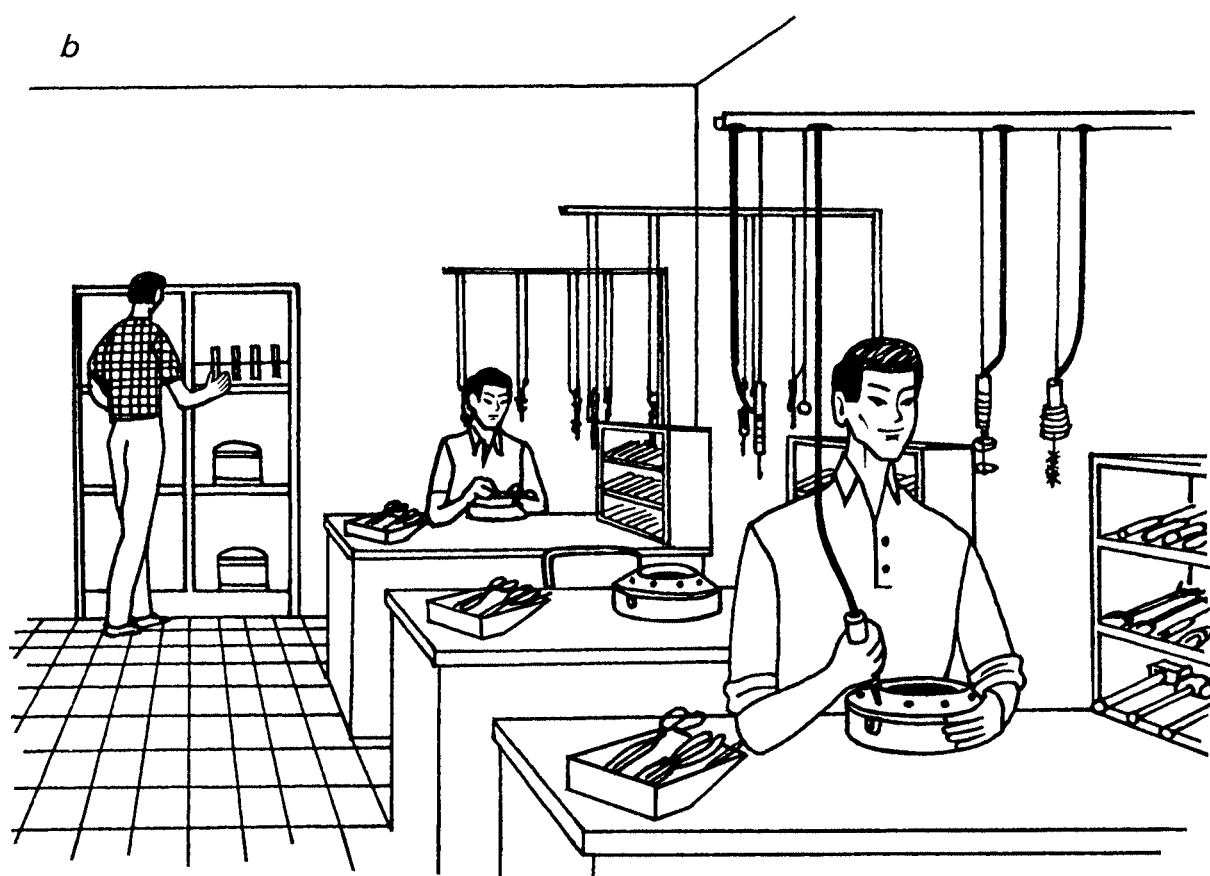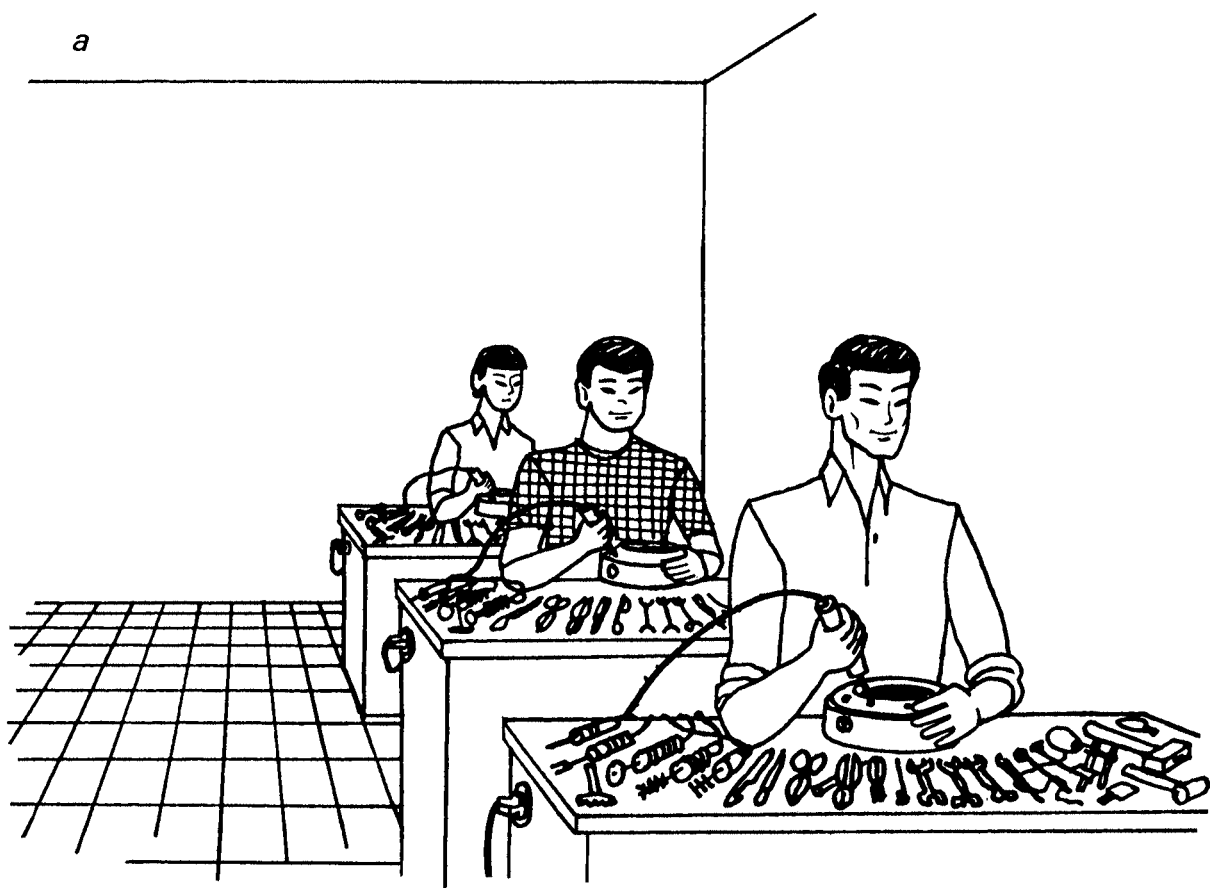
Figure **21**

Placement of tools in accordance with frequency of use. *(a)* Before. *(b)* After.

The more you use it, the closer it should be

In the next chapter, on work-station design, we will see how to ensure that all frequently used tools are in easy reach of the worker. However, it is frequently impossible in practice to place all tools and materials at the work-station where they will be used.

The way to resolve this problem is to rank all tools and work items in order of frequency of use and to allocate their places accordingly. The ones which are used continuously should be placed on the work-bench or suspended, so no time and effort is lost in reaching them. Less frequently used tools and materials can be placed on shelves and racks next to the work-station. Tools needed only once or twice a day can be held in central storage.

Use mobile storage

Even after you have removed everything which is unnecessary from the shop-floor, you will have a large number of items which need to be moved between work-stations or between storage areas and work areas. Often this is done in a haphazard way, which can mean many extra trips and loose inventory control. If you think about handling at the same time that you design your storage arrangements, you can achieve the following:

- fewer materials handling operations;
- less idle machine time;
- increased layout flexibility;
- reduced physical strain and injuries;
- simple, effective inventory control;
- reduced damage to work items;
- cheaper and more efficient housekeeping.

A good first step is to *design pallets or containers to move several items at the same time*. Often this is not done because the goods to be moved are shaped oddly or because they are easy to damage.

But if you involve your workers and think it over carefully, solutions can be found.

Pallets, containers or racks on wheels can be easily moved from one work-station to another or to the warehouse. To save storage space, the racks should be standardised and it should be possible to stack them.
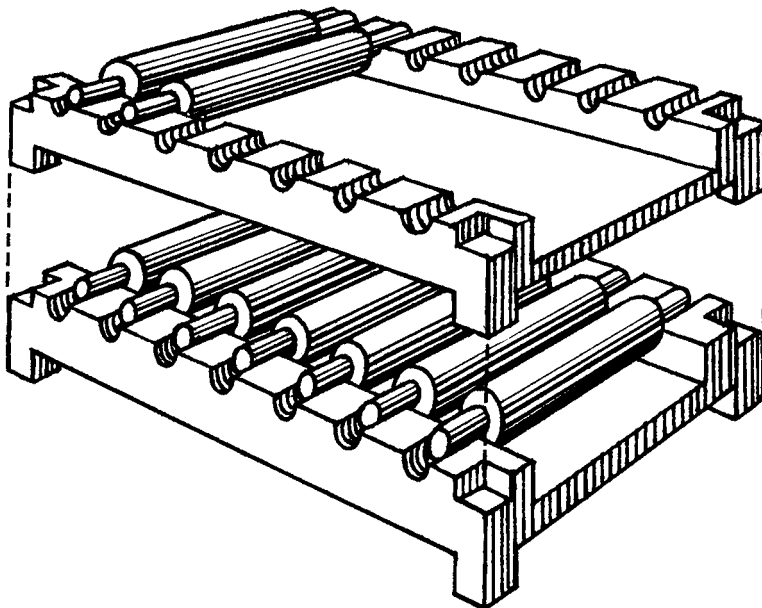
Figure **22**

A pallet for round, easily damaged parts. In this example, each pallet holds seven items and can be stored on a shelf. They can be stacked on a cart when they are needed on the shop-floor.
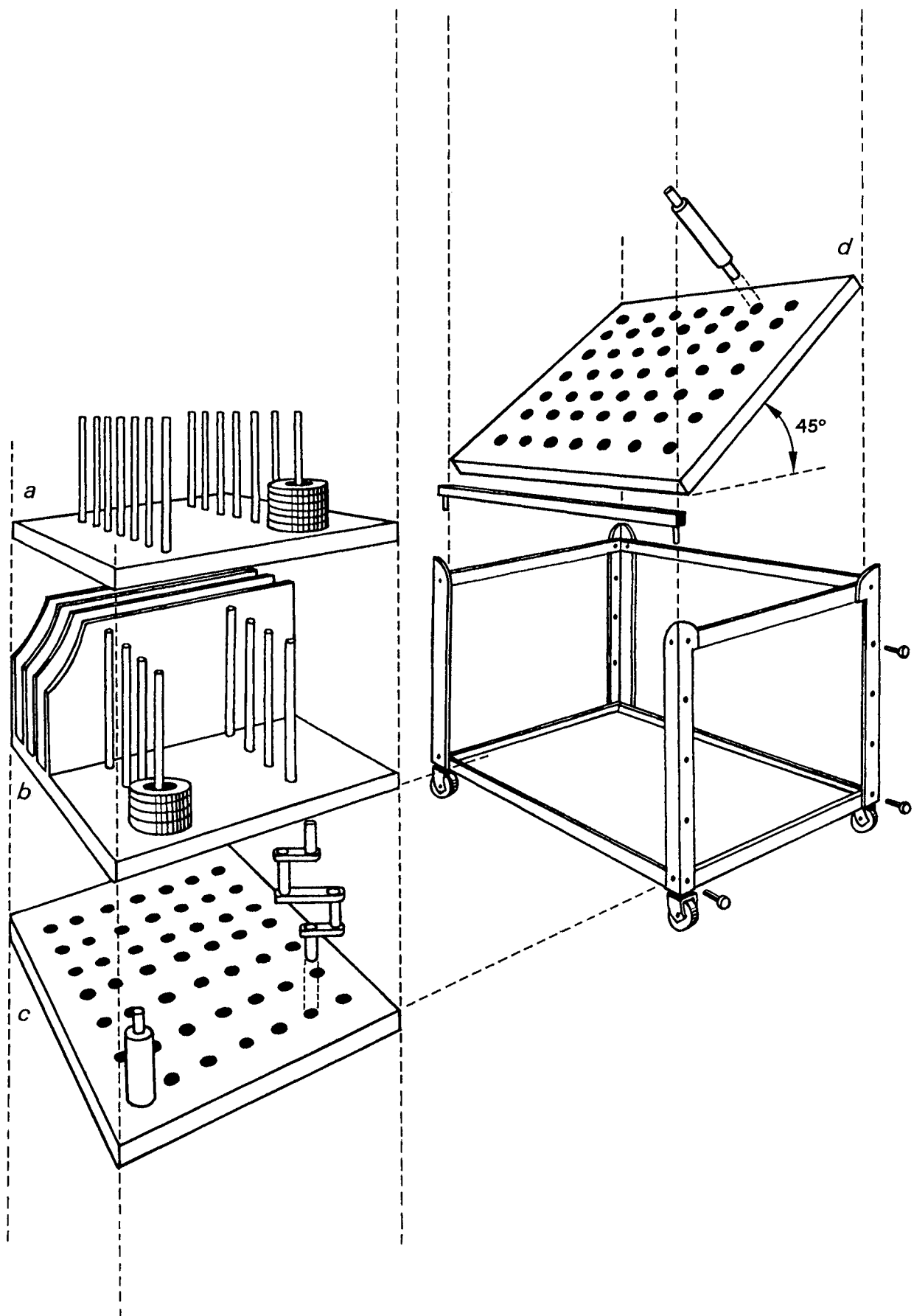
Figure **23**

A movable storage rack with multiple uses. This carrier for storage pallets allows them to be fitted either horizontally (*a, b, c*) or at a 45° angle *(d)*. Each pallet is designed to accommodate different types of work item.

In many cases, it is worth while to invest in designing special movable racks for different work items. This helps to utilise rack capacity more fully and make handling easier.
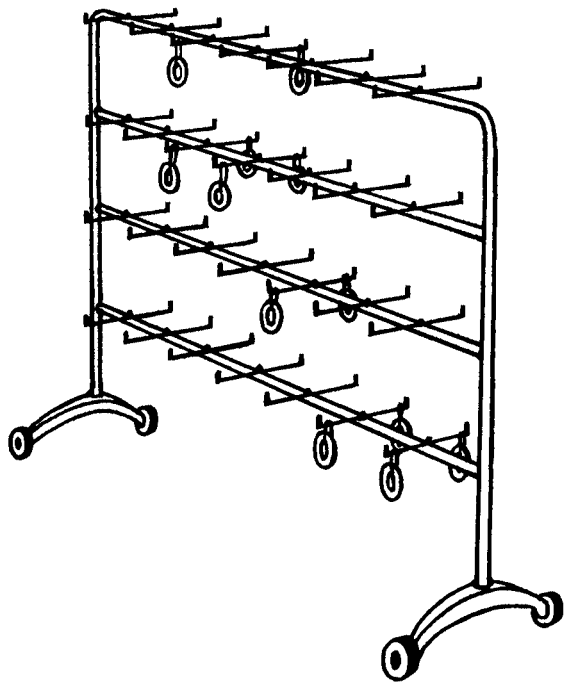
Figure **24**

A flat two-sided movable rack, a real "space saver" for a small factory with narrow passages, can be successfully used for many types of work-piece.
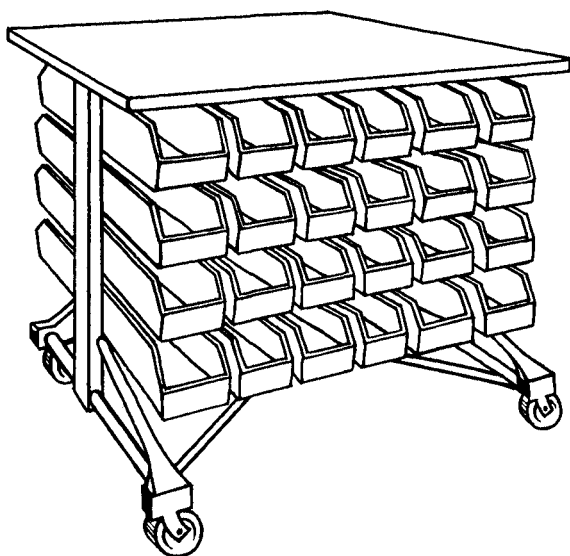
Figure **25**

A mobile bin cart helps to ensure smooth work flow in assembly shops where numerous operations are performed at each work-station.
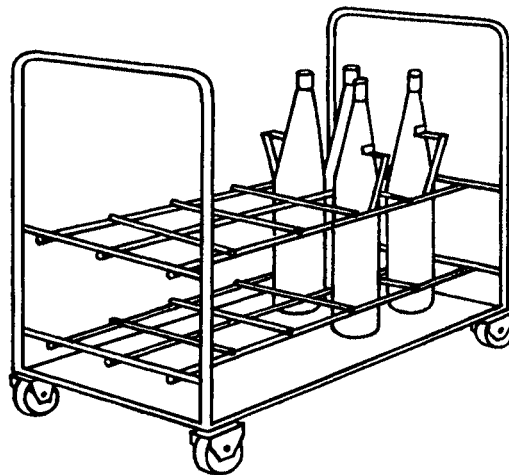
Figure **26**

A rack on wheels specially designed for storage and handling of motorcycle silencers.

Make your equipment easy to move to where it is needed

In small enterprises, workers can often be seen going back and forth from their usual workplaces to a temporary work-station, such as a heavy unit being assembled or a machine being repaired. At the temporary work-station they lack tools, equipment and materials. They may also lack a proper work-stand or bench.
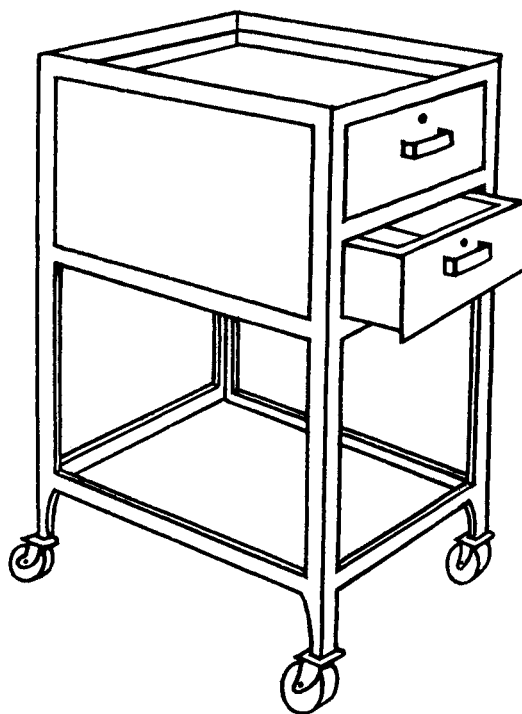
Figure **27**

An easy-to-move tool cart provides orderly storage and protection of tools and instruments.

23

Much improvement can be attained by introducing tool carts, trolleys, cylinder trucks or mobile work-stations, or even by putting some machine tools on wheels.
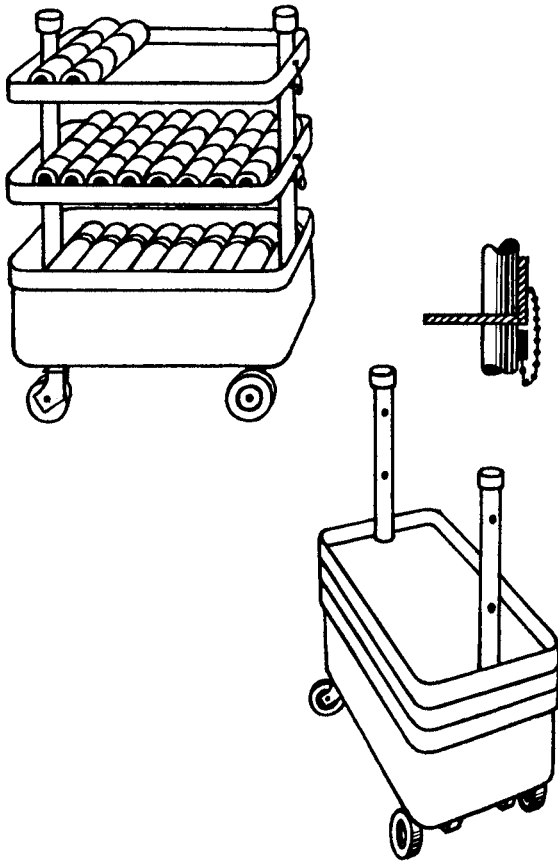
Figure 28

A tool trolley with adjustable shelves occupies little space, but contributes much in improving the efficiency of automobile mechanics and machine tool repair workers.
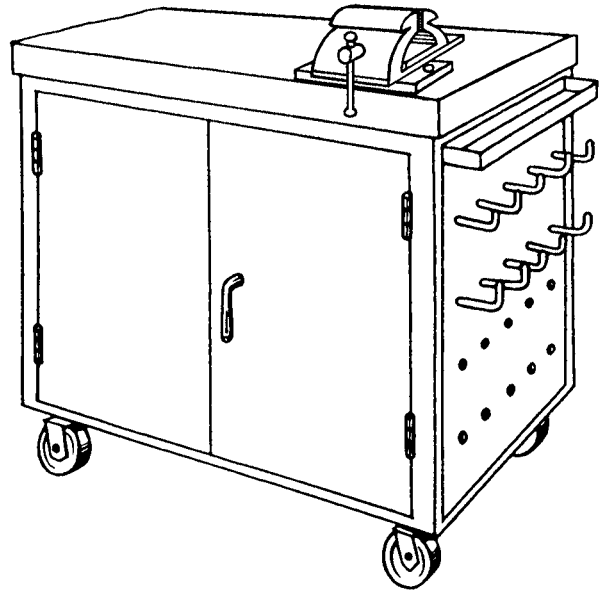
Figure 30

A small mobile repair bench enables maintenance and repair workers to be self-sufficient at any place on the shop-floor.

Figure 29

A cylinder truck with cylinder retainer chains. A divider makes handling safer.
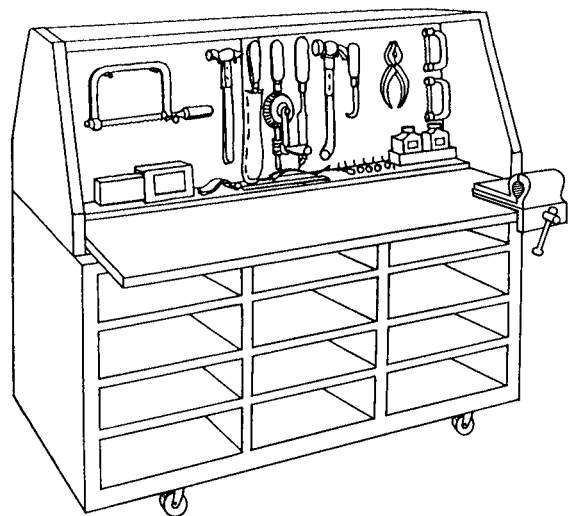
Figure 31

A mobile work-station for a metalworker.

Fewer and more efficient lifting operations

Lifting operations are a prime source of accidents, property damage and unproductive costs. It is therefore always better to eliminate lifting whenever possible. Sometimes it's even worth while to place equipment (for example a metal saw) below ground level in order to avoid lifting heavy items such as metal bars.

Time and effort can be saved by using platforms or lower vehicles so that goods do not have to be lifted during loading and unloading operations.

Figure **32**

A support frame with wheels for a machine tool increases production flexibility.
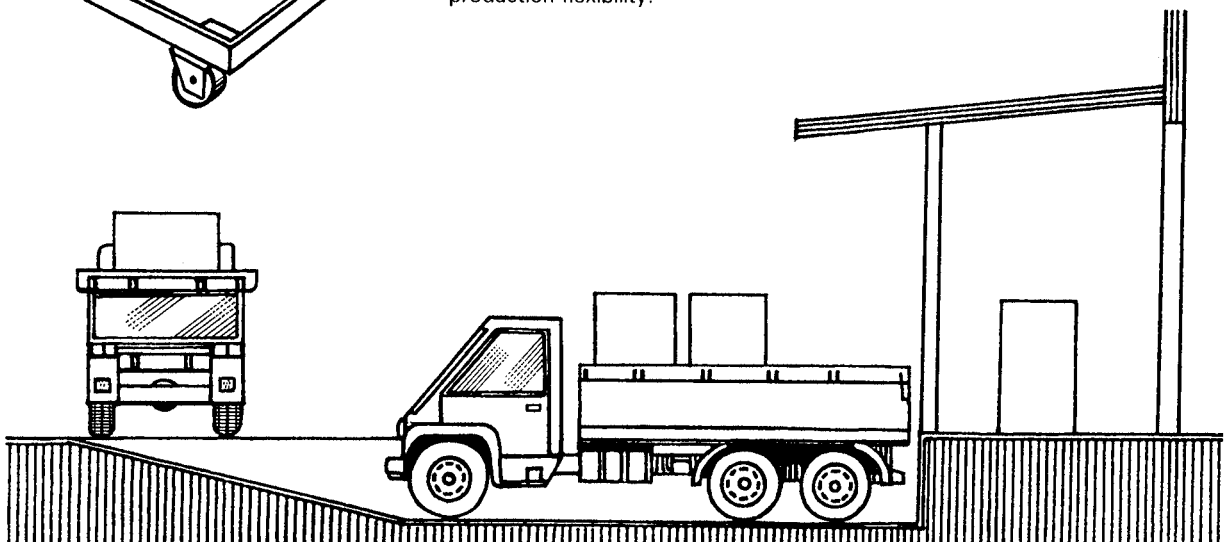
Figure **33**

Match the height of the vehicle bed to that of the loading area.

25
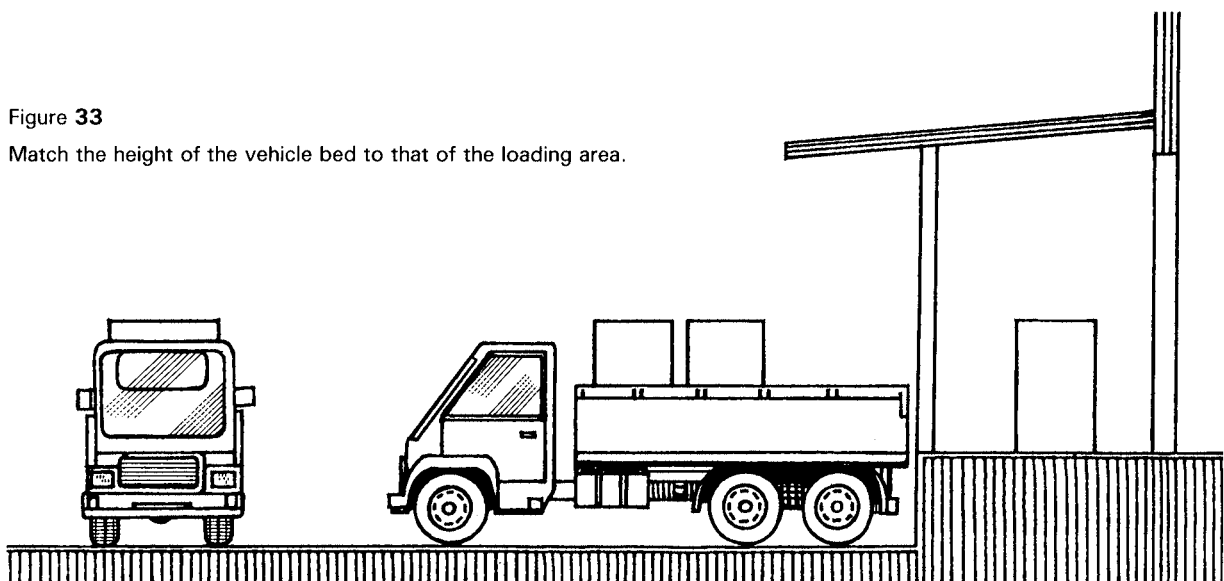
In selecting materials-handling devices and methods of manual carrying, give preference to the ones with a minimum of elevation of the load.

It is not difficult and can be very profitable to design and build special devices for handling different heavy items, as shown below.

Figure **34**
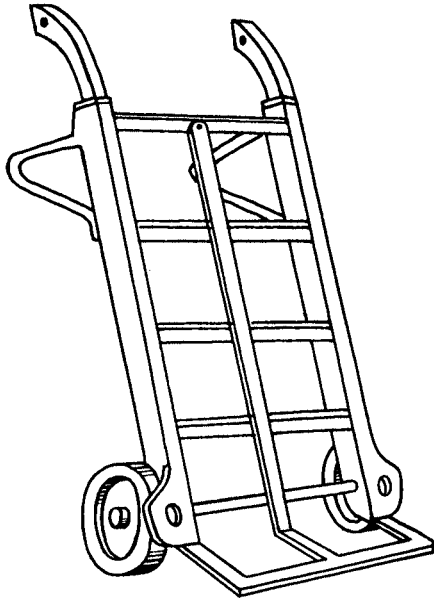
Figure **35**
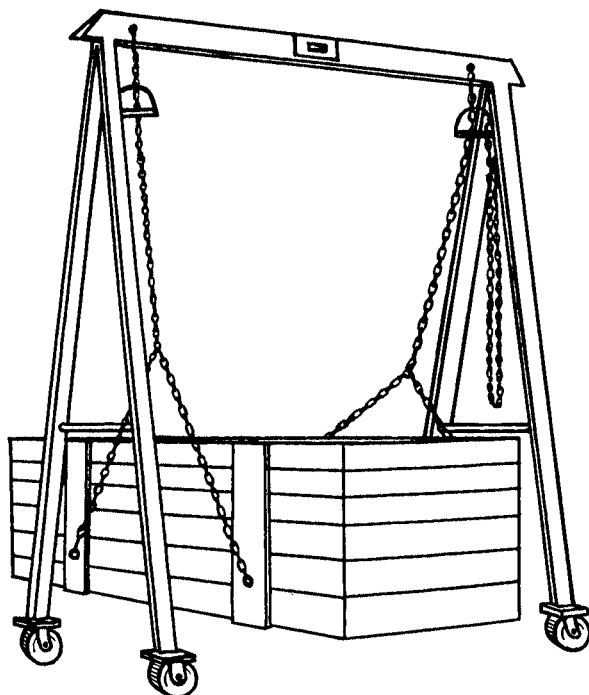
Figure **36**
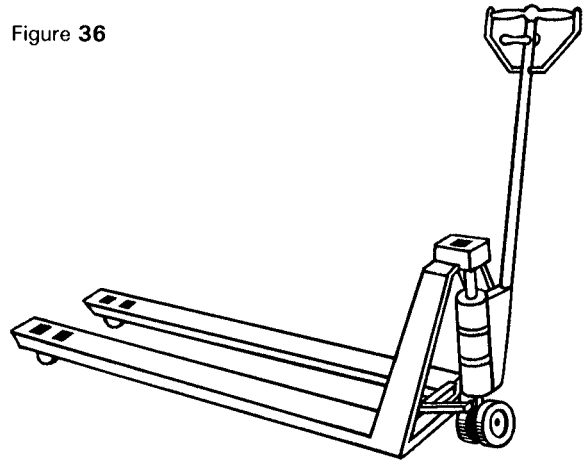
Figures **34, 35** and **36**

A heavy-duty sack truck (figure 34), portable gantries (figure 35), and a low-lift pallet trolley (figure 36) are reliable, safe and easy to operate. They provide means of carrying heavy loads a short distance with minimum elevation.
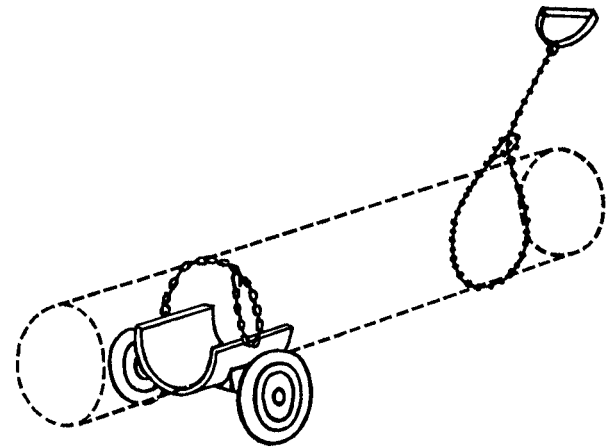
Figure **37**

This small cart enables one worker to move heavy metal bars.
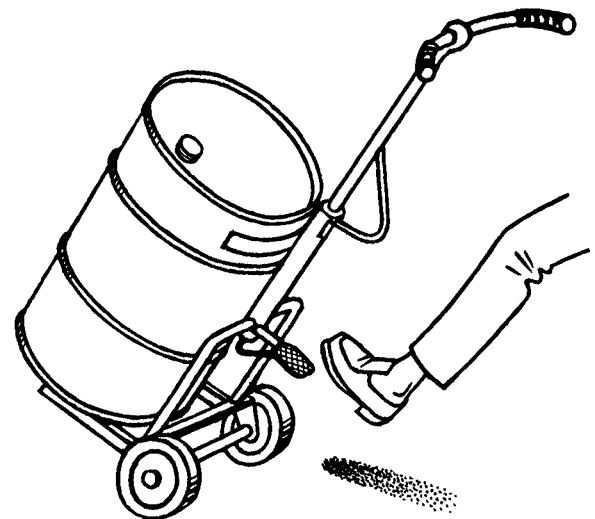
Figure **38**

This barrel handling device not only makes work much easier but also helps to avoid damaging barrels.
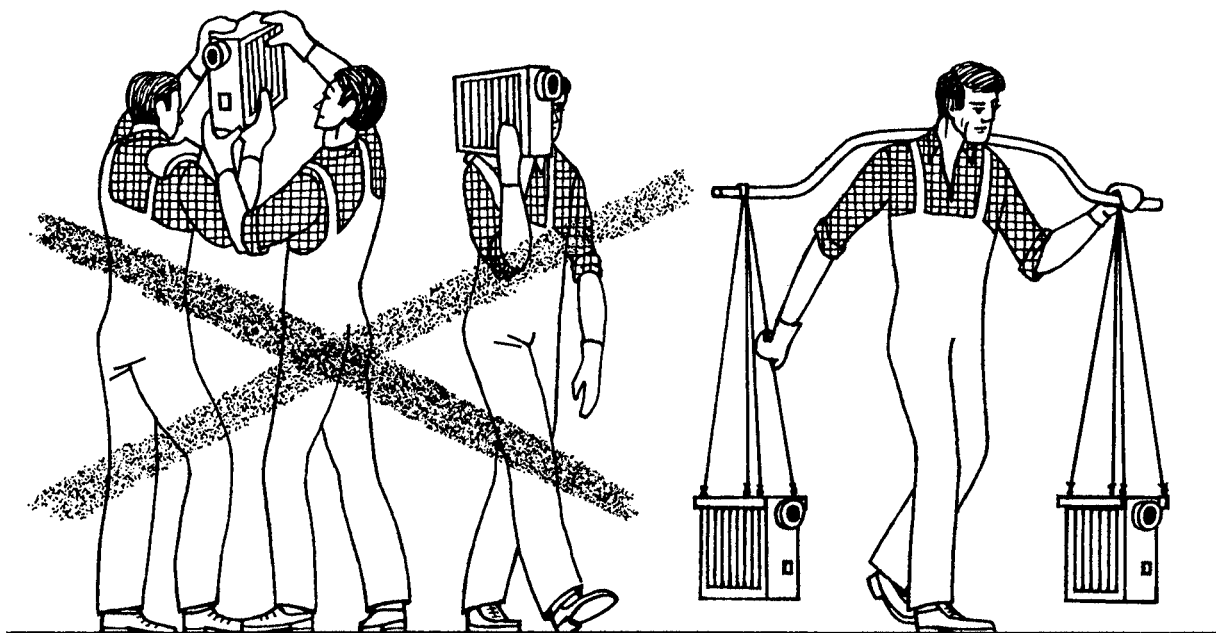
Figure 39

Use of a yoke for carrying loads. Minimum elevation makes the work more efficient and safer.

In designing methods of manual carrying, we should keep in mind the fact that the higher the load, the bigger the percentage of energy is spent on lifting and less on actual transport. The logical conclusion is to *make work more efficient by using methods with a minimal elevation of the load over ground level.*

You can easily produce simple devices like single- or double-handle tongs (figures 40 and 41). Keep in mind the benefits of minimum load elevation. These devices will help improve efficiency and reduce physical strain, minimise the risk of accidents and eliminate direct contact of workers with the load (in the case of acid batteries, hot iron bars, etc.).
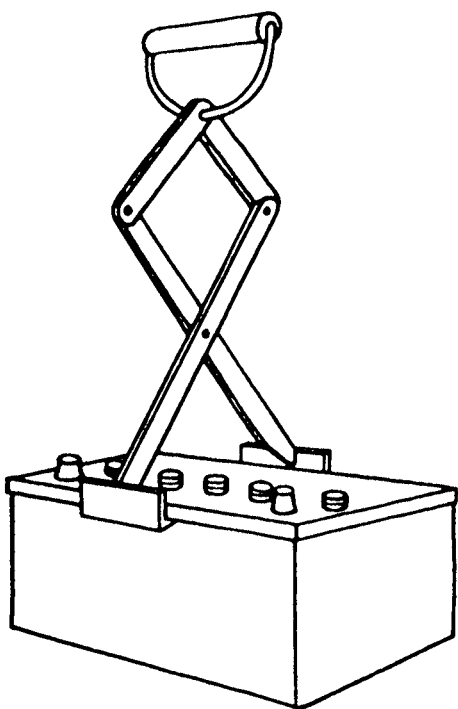
Figure 40

Single-handle tongs.
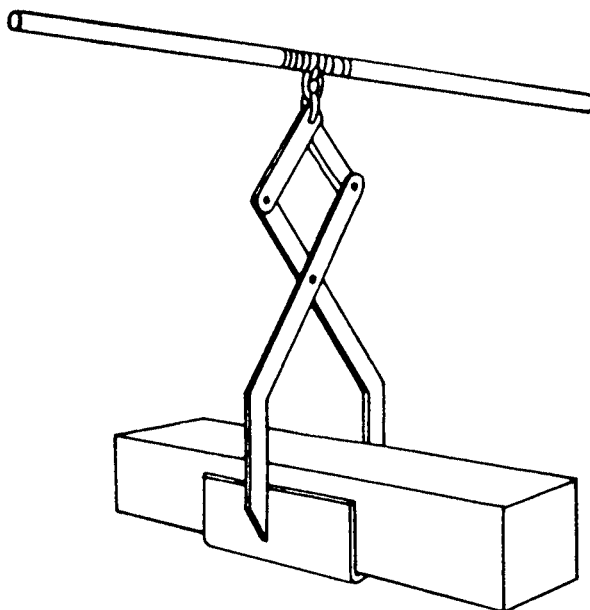
Figure 41

Double-handle tongs for heavy or dangerous items.

27
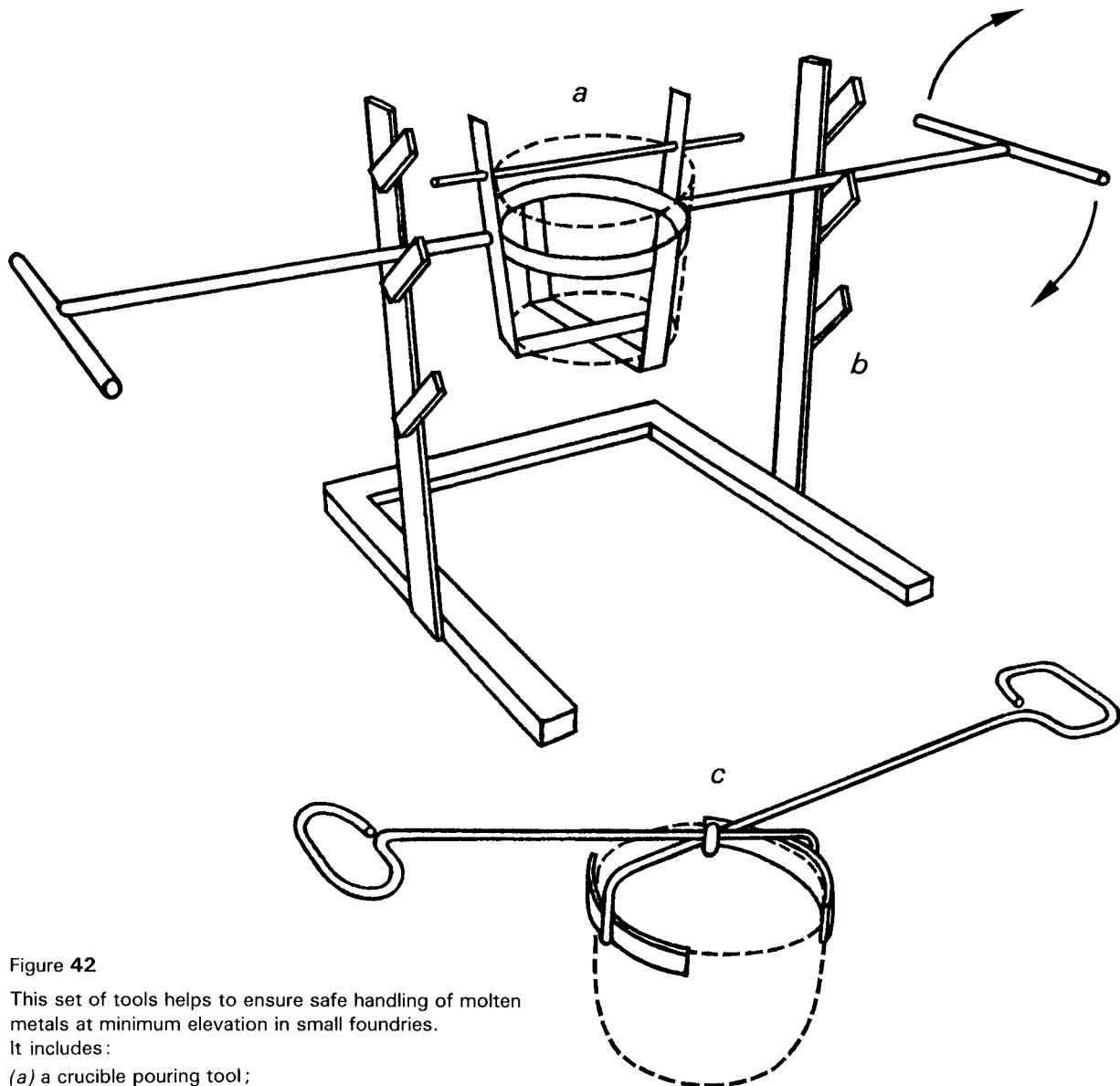
Figure 42

This set of tools helps to ensure safe handling of molten metals at minimum elevation in small foundries.
It includes:

(a) a crucible pouring tool;

(b) a crucible pouring rack;

(c) a one-man crucible lifter.

Move materials at working height

Unfortunately, we cannot always avoid the need to lift heavy goods. Quite often it is necessary to raise loads so that they can be machined or assembled. In such cases we have to see that materials are moved through the production cycle at working height. This minimises the time and energy lost in raising and lowering.

One possibility is to install a suspended or floor-mounted transport system of appropriate height, where heavy loads are moved manually or by gravity between work-stations (figure 43). Another solution is to employ mobile work-stands

(figure 44). Goods in production are fixed on specially designed trolleys and manually moved along the production area. Correct height of the trolley and provision of a rotatable top make it a good substitute for a stationary work-stand. It can be moved to different machines or work areas. This means that parts do not have to be brought to the product — the product moves to the parts.

This system helps:

— to improve the efficiency of materials handling;

— to have greater flexibility in layout and product flow;

— to reduce the risk of accidents.

28

Figure **43**

A passive conveyer line for moving heavy motor castings at working height.
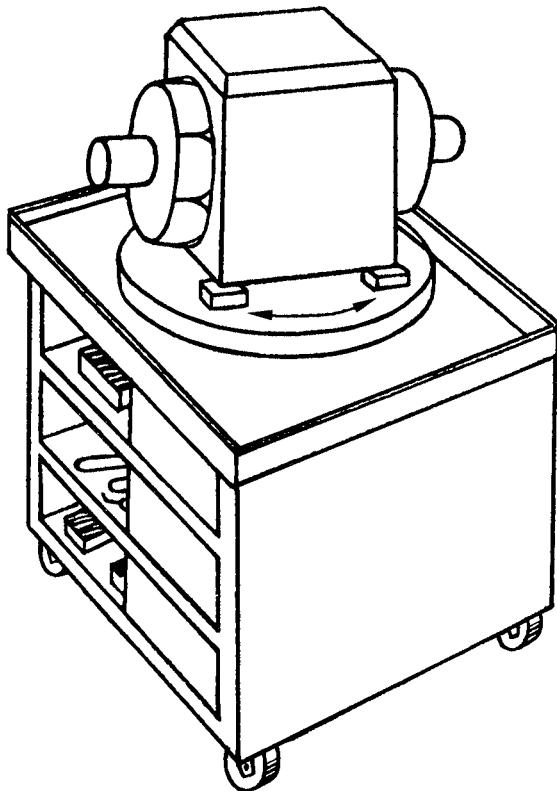
Figure **44**

A mobile assembly work-stand equipped with a rotating top and storage for tools and parts.
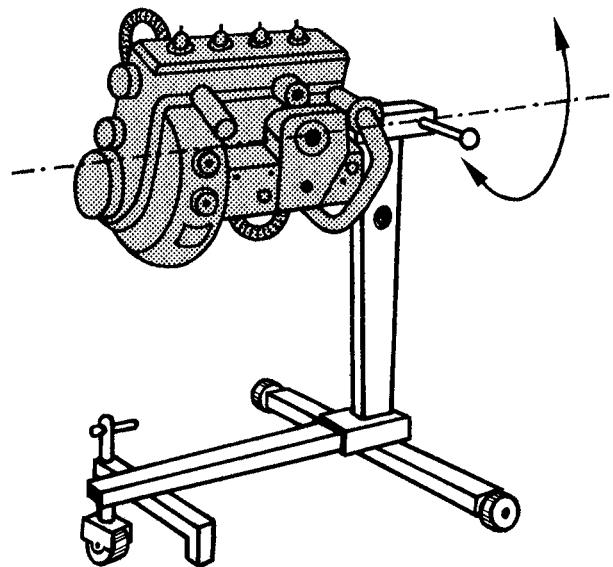
Figure **45**

An engine assembly stand. It allows a full 360° rotation of the engine and locks it securely in any position.

Make lifting more efficient and safer

A heavy load suspended in the air is always a danger, especially in a small overcrowded workshop. Preference should always be given to floor-based lifting devices which use the minimum necessary elevation. The figures which follow illustrate such devices.
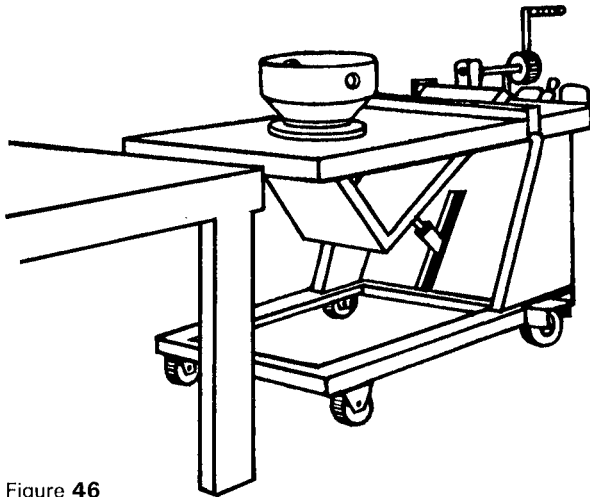
Figure 46

A manually powered device for lifting heavy castings to working level.
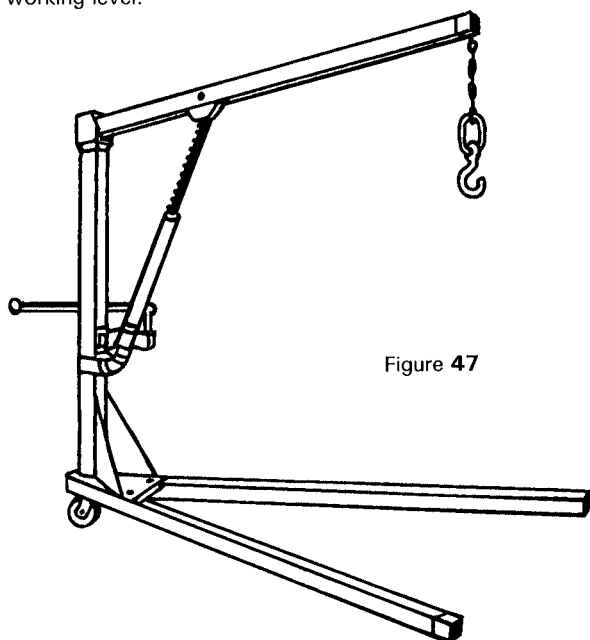
Figure 47
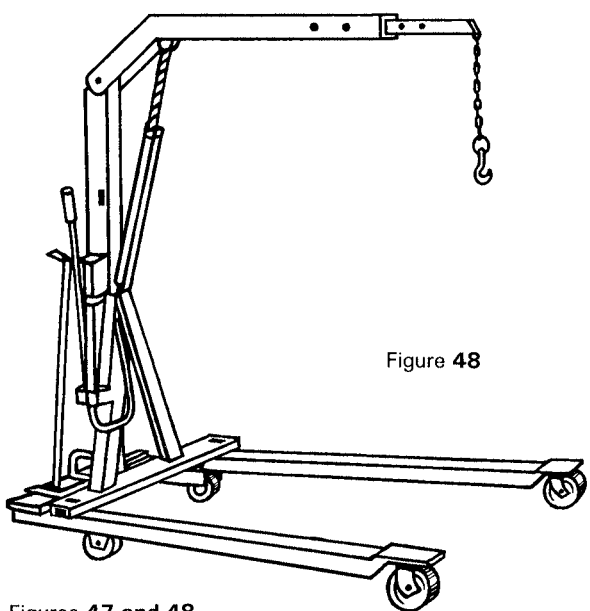
Figure 48

Figures 47 and 48

Manually powered hydraulic floor cranes with different load capacities, with a solid (figure 47), or telescopic (figure 48) boom.

Overhead cranes and hoists bring hazards to the workshop which may result in serious accidents.

Remember that:

- no lifting machinery should be used unless it has been tested by the maker or some other competent person and a certificate specifying the safe working load has been obtained;
- the maximum safe working load should be plainly marked on all lifting tackle;
- lifting machines, chains, ropes and other lifting tackle require regular maintenance and periodic inspection;
- it is important to consult legislation, regulations or the inspectorate for detailed safety regulations.

In addition, *always keep the elevation of the load as low as possible.*

a   *b*   *c*
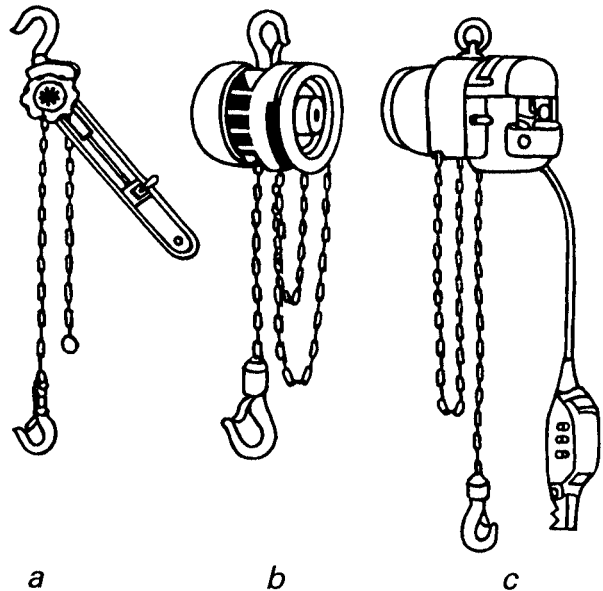
Figure **49**

(a) A *lever hoist* is simple to operate and extremely versatile. *(b)* A *chain hoist* with a self-activating load brake. *(c)* An *electric chain hoist* with butterfly control switch for efficient handling of lighter loads.

It has been shown above that it is not economically or socially justified to tolerate manual lifting of heavy loads. *Manual lifts should be considered as a last resort in special cases when the application of mechanical means is not feasible.*

In organising lifting work, remember that lowering and raising the body weight in taking weights up from the floor (figure 50) increases the energy expenditure by 50 per cent when compared with lifting a weight from 0.5 m. That's why we always recommend platforms for loading and unloading heavy items.

a
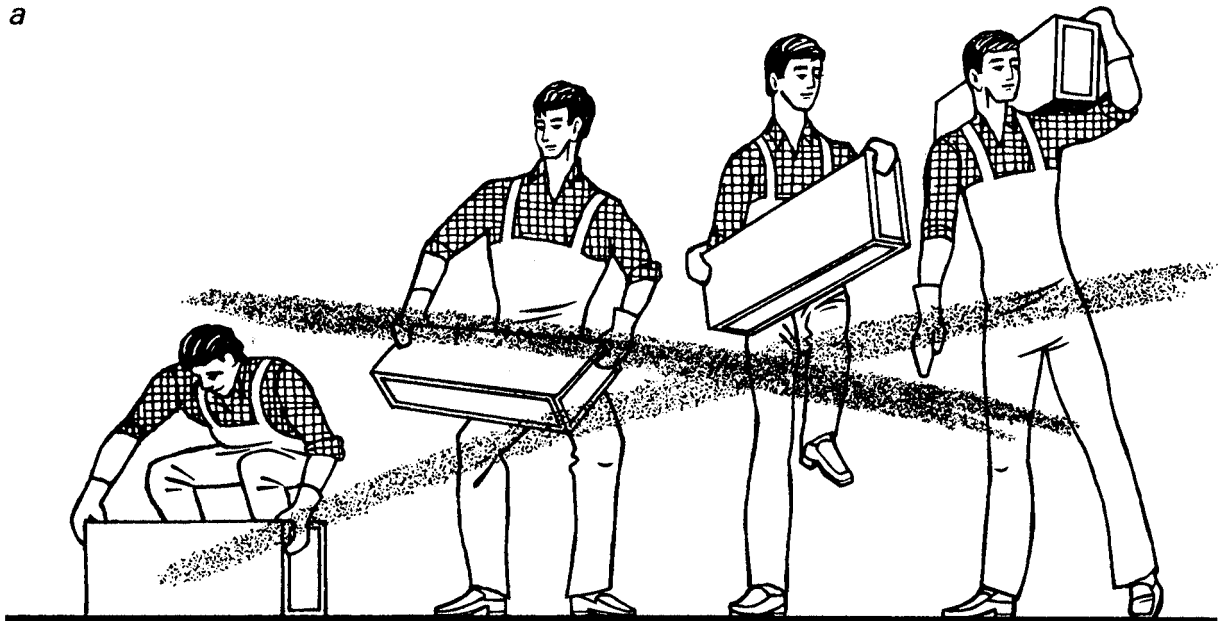
b
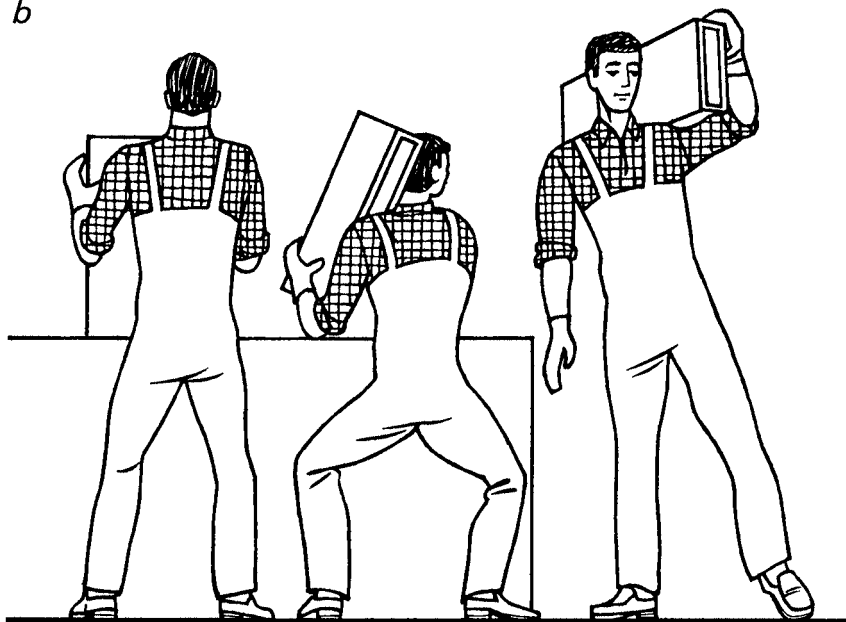
Figure 50

Lifting of heavy loads (a) from the floor and (b) from a platform.

You can help your workers to avoid back injuries by teaching them the correct lifting technique (figure 51). The idea is to keep the back straight and to raise the load, using the muscle power of the legs and the grip of the hands.

Handling of smaller weights should not be associated with lower productivity. It has been proved in practice that maximum efficiency is usually attained with weights below 20 kg. The physical capacity of a woman is about *one-third*

lower than that of a man and her reach is also considerably shorter. Women should not be assigned jobs involving lifting heavy weights above shoulder level.
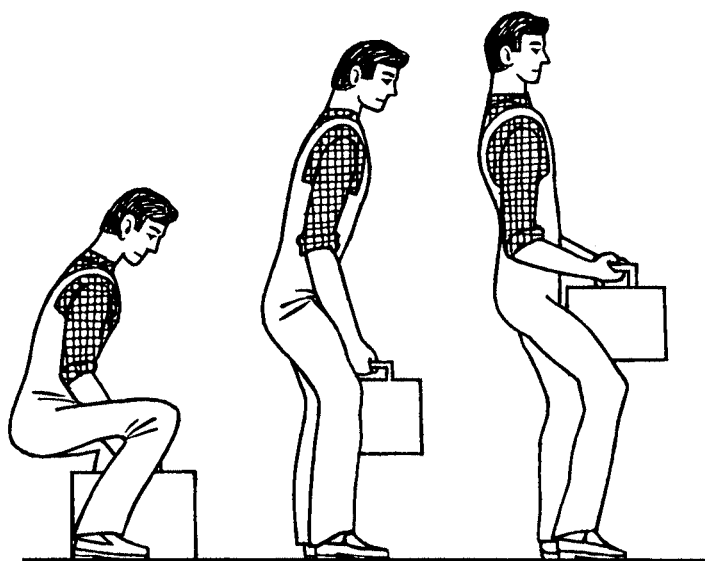
Figure **51**

1. The feet must be far enough apart to give a balanced distribution of the weight.
2. The knees and hips should be bent, and the back kept as straight as possible, with the chin tucked in.
3. The arms should be held as near to the body as possible. This helps to sustain the load by allowing friction between the load and clothing.
4. Lifts should be made smoothly, no jerks or snatches should occur.

Summary
Rules for efficient materials storage and handling

If in doubt, take it out

Avoid placing materials on the floor

Save space by introducing multi-level racks

Provide a "home" for each tool and work item

The more you use it, the closer it should be

Use mobile storage

Make your equipment easy to move to where it is needed

Don't lift loads higher than necessary

Move materials at working height

Make lifting more efficient and safer

Work-station design

A well-designed work-station is important for productive work. Workers usually repeat similar operations a great many times. If they can do so quickly and easily, productivity will be higher and quality will be better.

A work-station is a place which a worker occupies when performing a job. The place may be occupied all the time or may be one of several places where work is done. Examples are work-stands or work-tables for machine operation, assembly or inspection.

Each work-station presents a unique combination of workers and tasks. It is important to design the work-station with both workers and tasks in mind so that work is done smoothly and without unnecessary disruptions.

Four rules are described below which will help you to raise productivity through better work-station design. In each case, you should be able to design improvements in your own factory using careful observation and common sense. The cost of such improvements is usually very low; the benefits are often important.

Keep materials, tools and controls within easy reach

Time and effort are saved by placing materials, tools and controls (such as switches, levers, etc.) within easy reach of the worker. Long reaches mean a loss of production time and extra effort. "The more you use it, the closer it should be" applies to the work-station as well as to the factory as a whole.

The distance which can be reached easily without leaning forward or stretching is quite small (figure 52). Any object that is frequently grasped or used should be located between 15 and 40 cm from the front of the work-surface.

When materials are supplied in boxes or bins or on pallets or racks, these should be placed within easy reach and at an appropriate height. If several
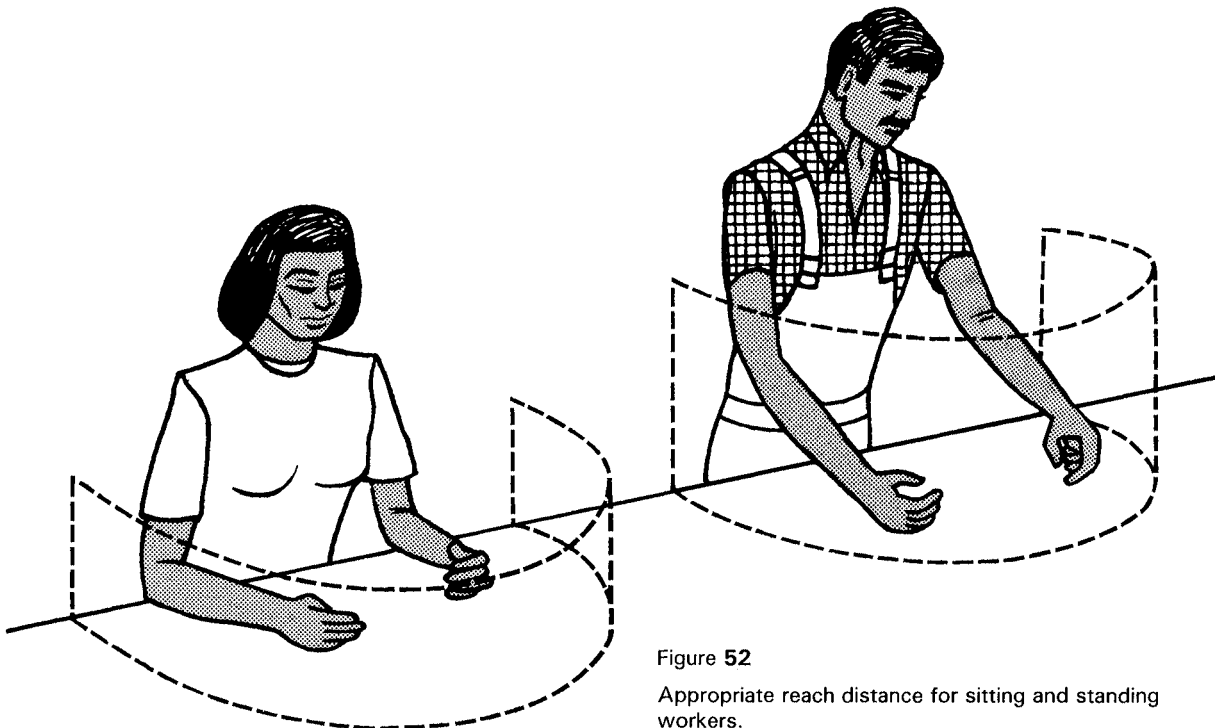
Figure **52**

Appropriate reach distance for sitting and standing workers.
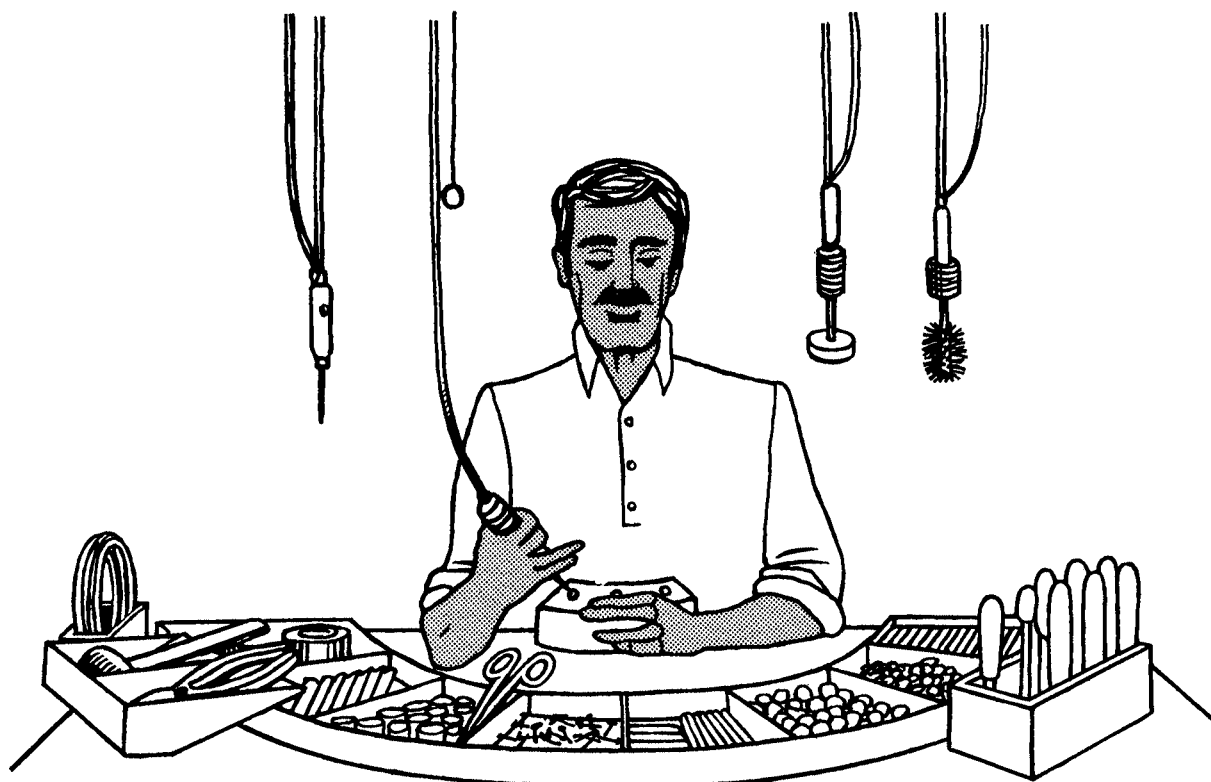
Figure **53**

Placement of tools on the work-table.

Work surface height
should be around
elbow level

Work surface
thickness
5 cm max.

Thigh
clearance 20 cm
minimum

65-72 cm

Leg clearance 40 cm
at knee level,
60 cm
for the feet

Seat height
36-45 cm
(adjustable)
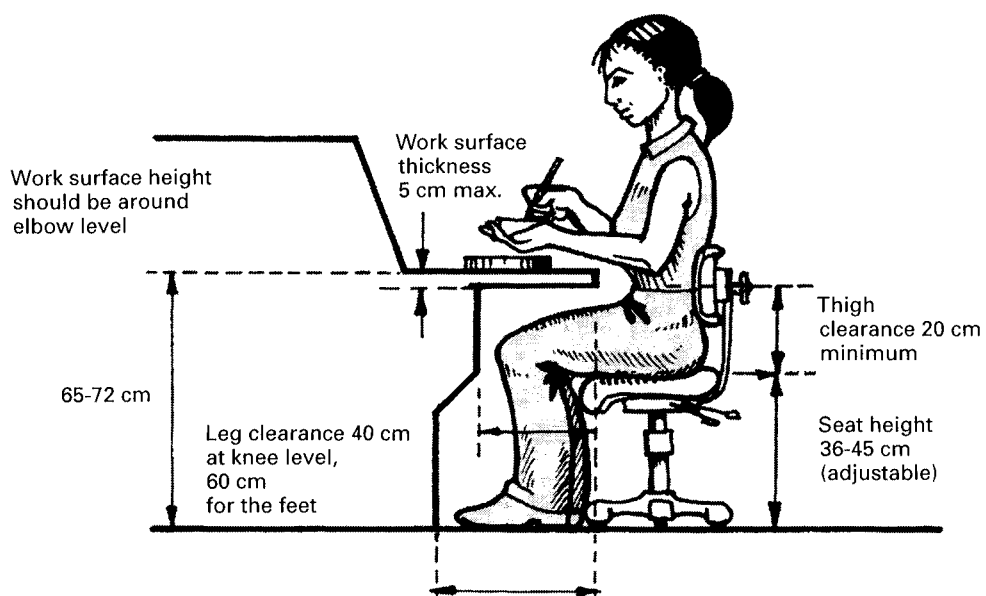
Figure **54**

Recommended dimensions for most seated tasks.
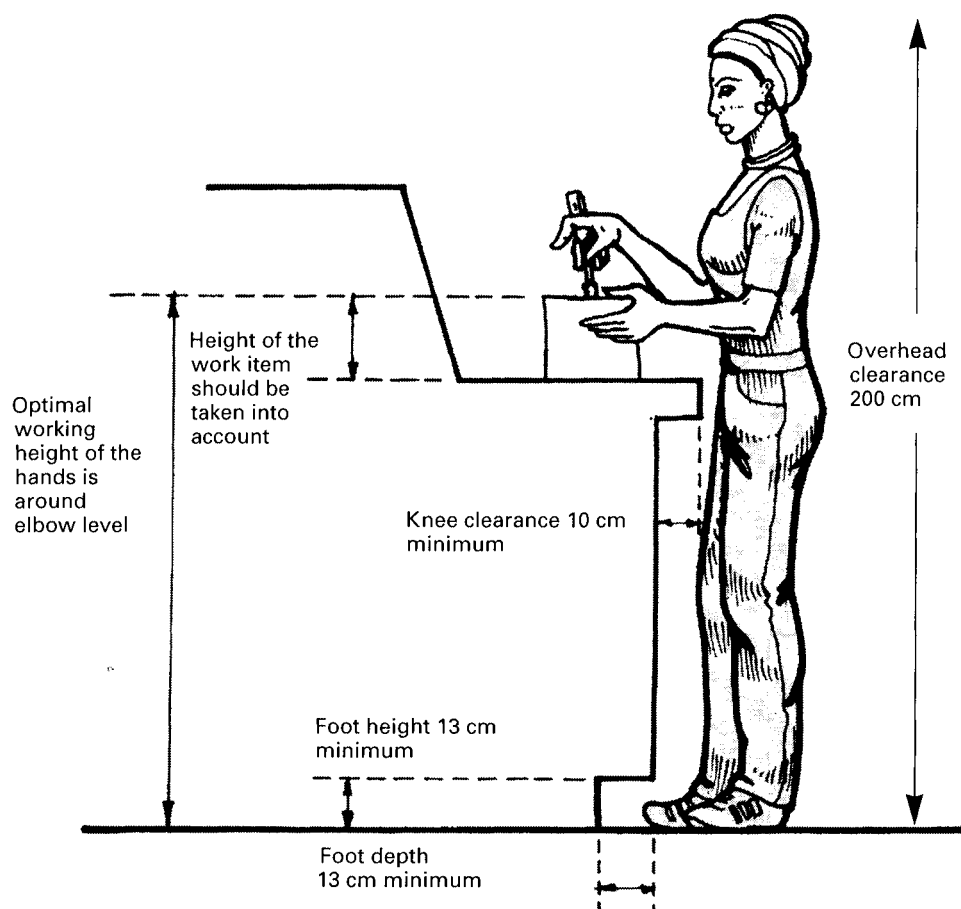
Figure **55**
Recommended dimensions for standing work.

different kinds of material are used, it is often useful to put them in bins placed in front of the worker or on a work-table next to the worker.

Tools or materials used only occasionally (a few times per hour, for example) may require leaning forward or stretching aside, or may even be placed outside the immediate work area without much loss in productivity. The important items are those used regularly as part of a short work cycle (figure 53).

Improve work posture for greater efficiency

When a difficult work position is required, work not only takes longer but also leads quickly to fatigue. For example, operations with the arms raised tire the shoulder muscles rapidly. Operations while bending forward or twisting the body can easily cause back strain. The operation time gradually increases and the worker becomes more likely to damage goods or have accidents.

The following measures help to avoid difficult work positions:

- provide a stable, non-wobbling work-surface on which work items can be firmly placed;
- place materials, tools and controls where they can be reached easily by the worker without bending or twisting the body;
- use platforms so that short workers can be at the proper work height;
- provide good chairs of correct seat height and with a sturdy backrest;
- provide enough leg space to allow easy leg movement.

Recommended dimensions for standing and seated work are given in figures 54 and 55.
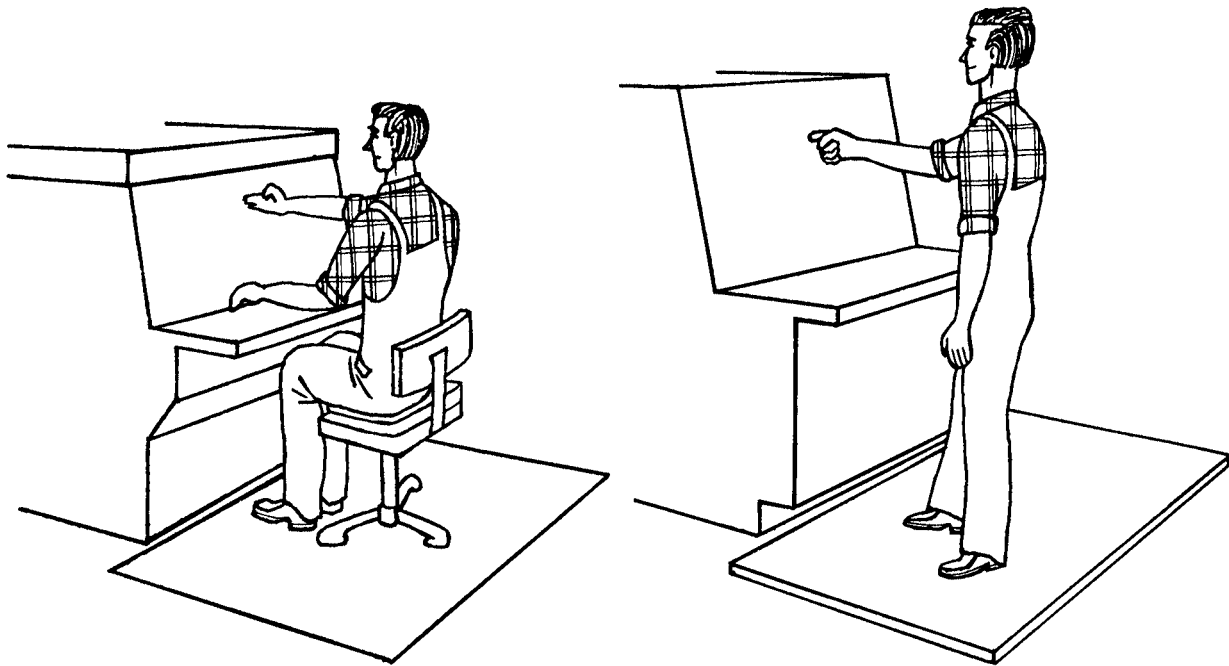
Figure **56**

Leg space and foot space for both sitting and standing workers.

Note also the minimum clearances required for the legs, as indicated in figure 56.

The height of places where work is done with the hands is also an important factor. The *elbow rule* should be applied to determine the correct hand height (figure 57). Most work operations are best performed around elbow level.

In the case of seated work, an exception should be made for precision work. In this case, the object can be raised slightly above elbow level to allow the worker to see the fine detail. In the case of standing work, the hand height should be a little lower than elbow level in some cases (figure 58). For example, in light assembly work or packing of large things, the hand height should be about 10-15 cm lower. When the use of very strong muscular force is needed, an even lower height is appropriate so as to allow the use of body weight.

Work-surface height or seat height should be adjustable according to each operator's size, for example by using a lift table or a seat with adjustable height. Similar adjustments can be made by placing wooden platforms or stands under tables, work-surfaces or work items. Footrests can also help.

It is desirable to assign work tasks so that the worker can alternate standing and sitting while at work. If the main tasks are done at standing

work-stations, then good chairs should be provided for occasional sitting. If the main tasks are done in a sitting posture, then opportunities should be provided for occasional standing, for example to collect materials from storage.

Use clamps, jigs, levers and other devices to save time and effort

Any work operation requires effort. It is important not to waste it just to hold a work item. In many cases, the work can be done more skilfully and efficiently when the hands are free from such efforts. For example, when a lot of force is applied to hold an unstable work item or to raise a heavy tool, effort is wasted.

There are a number of ways to reduce the effort required to operate tools or machines. All these measures allow the worker to use the energy and time saved for productive work (figure 59). Examples are:

— the use of leverage for moving or lifting materials or operating controls;

— the use of jigs, clamps, vices or other fixtures to hold work items while work is done;

— the use of gravity to save effort, such as the use of counterbalances and the use of chutes or rollers;
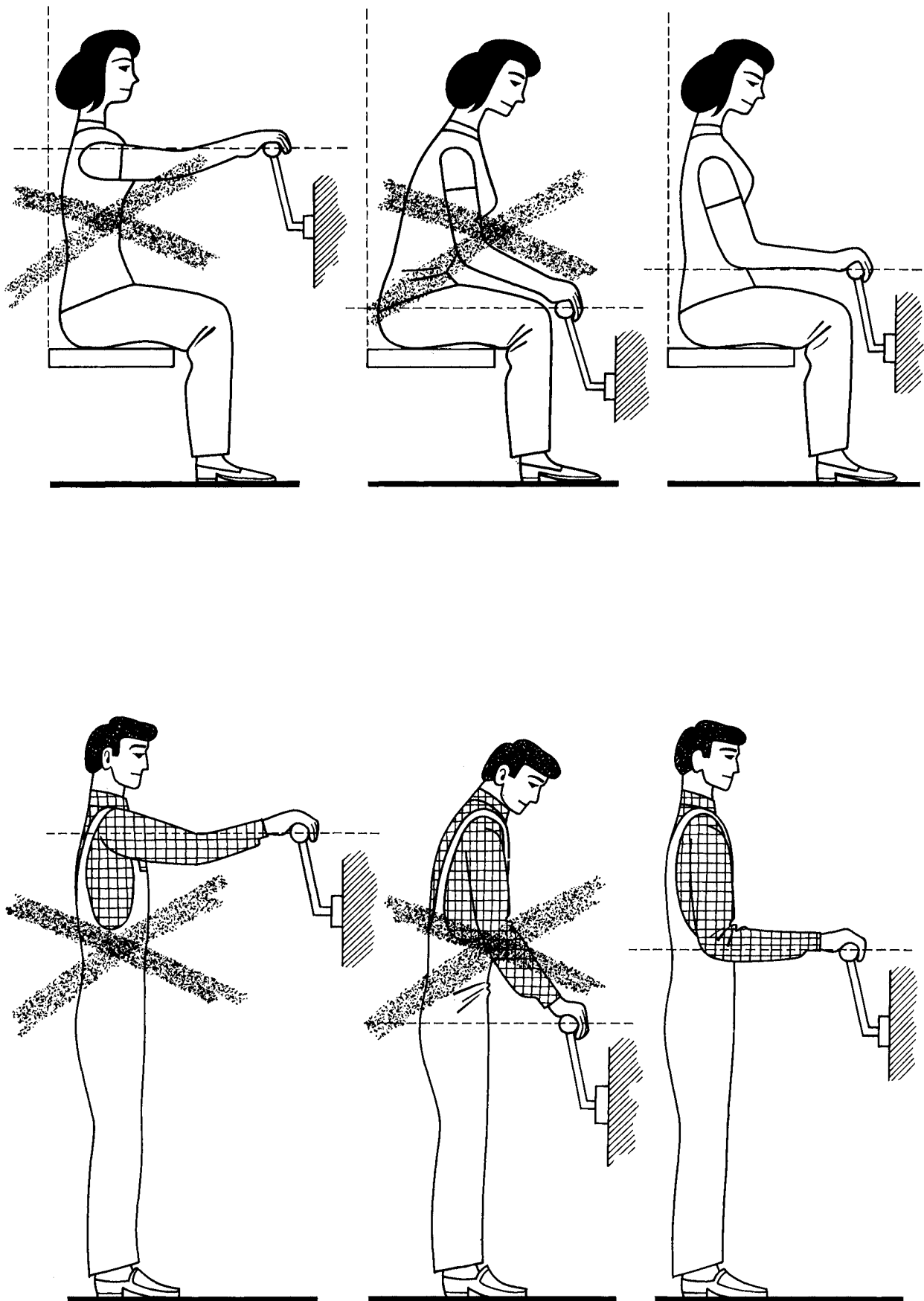
Figure 57

Elbow rule for hand height.
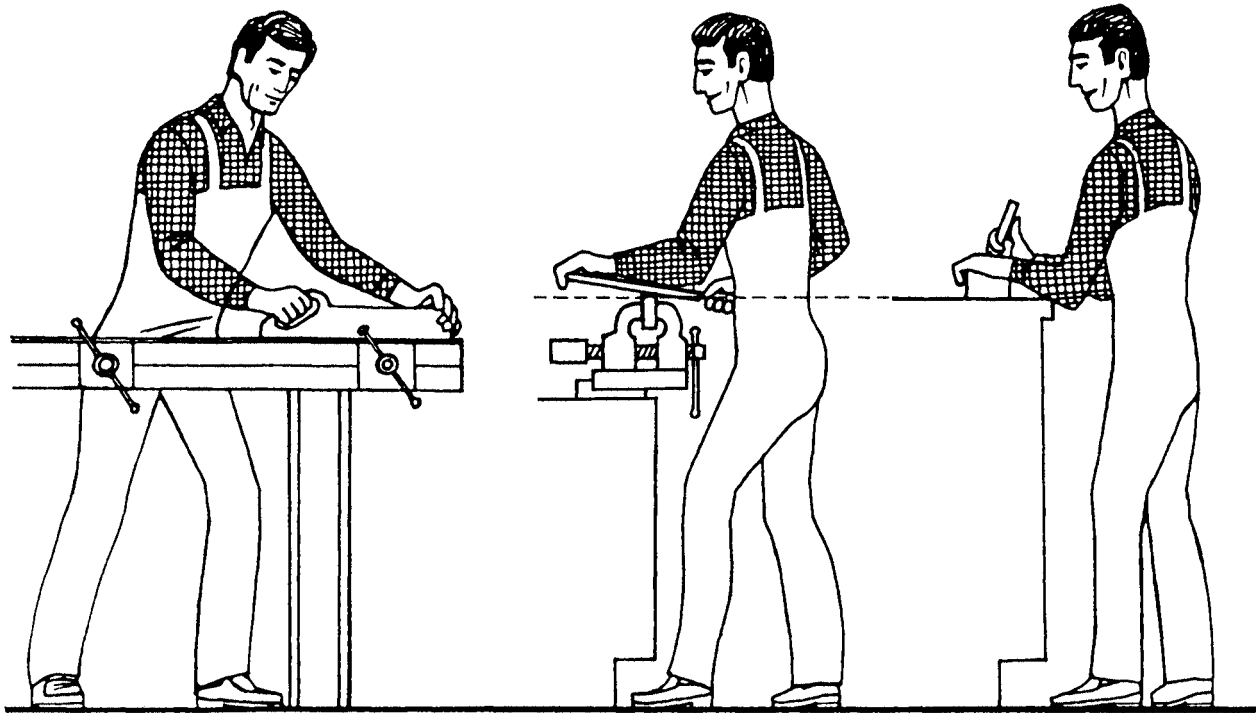
Figure **58**

The working height can be at elbow level or a little lower depending on the type of standing work.

- minimising vertical movement when work items are moved from one place to another;
- the use of suspended tools which are easily grasped and moved;
- the use of tools adjusted for easy grip and easy handling.

It is always useful to make motions short, easy and balanced. Repetition of simple motions of a short cycle period, however, should be avoided. It is difficult to continue simple repetitive tasks during the whole workshift. In that case, it is useful to combine different kinds of work operation for each worker.

It also should be remembered that smooth, rapid work motions are hindered when the working space is too narrow. This is especially so when there are areas where the hands or feet may come in danger while at work. So it is important to provide enough space around the work position so that the worker can move around without hitting against obstacles or entering dangerous areas.

Improve displays and controls to minimise mistakes

Products and machines are often damaged by mistake. Accidents are also often ascribed to human mistakes. An effective way to avoid such mistakes is to ensure that each worker can see and identify clearly what he or she is working on. This is a basic condition for good work and for avoiding mistakes. The following points are important:

(a) keep things which are seen, touched or controlled (visual displays, materials, switches, etc.) within easy sight of the worker;

(b) make displays and controls easily distinguishable; and

(c) use good lighting (Chapter 7 covers this subject).

Use a specially designed or
universal jig or fixture
instead of holding an unstable
work piece by hand.
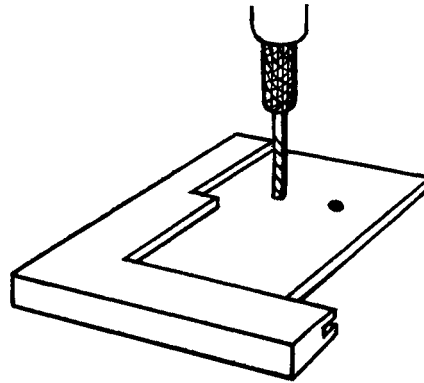
Clamps and vices can hold different
sizes and shapes of work pieces steady
during work and can free hands as well.
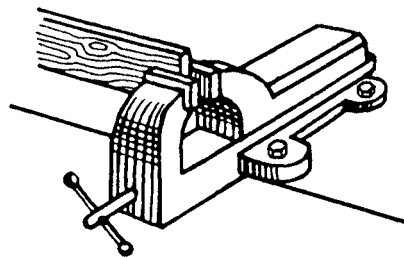
Minimise vertical movement or use
chutes or other devices to save
the worker's time and effort.
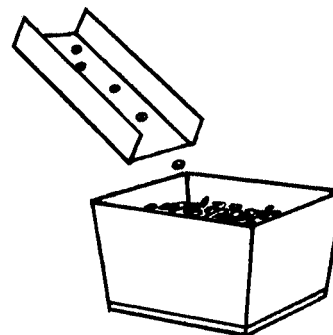
Suspended tools are less tiring
to use. They also save the time
lost in picking up and putting
down the tool.

Figure **59**

Examples of releasing the hands from unnecessary tasks so that more productive work can be done.

0-20°

30°

70°

15°~30°

➤ Area for displays referred to from time to time

➤ Optimal view for frequent monitoring (10-30°)

➤ Displays shown together with controls
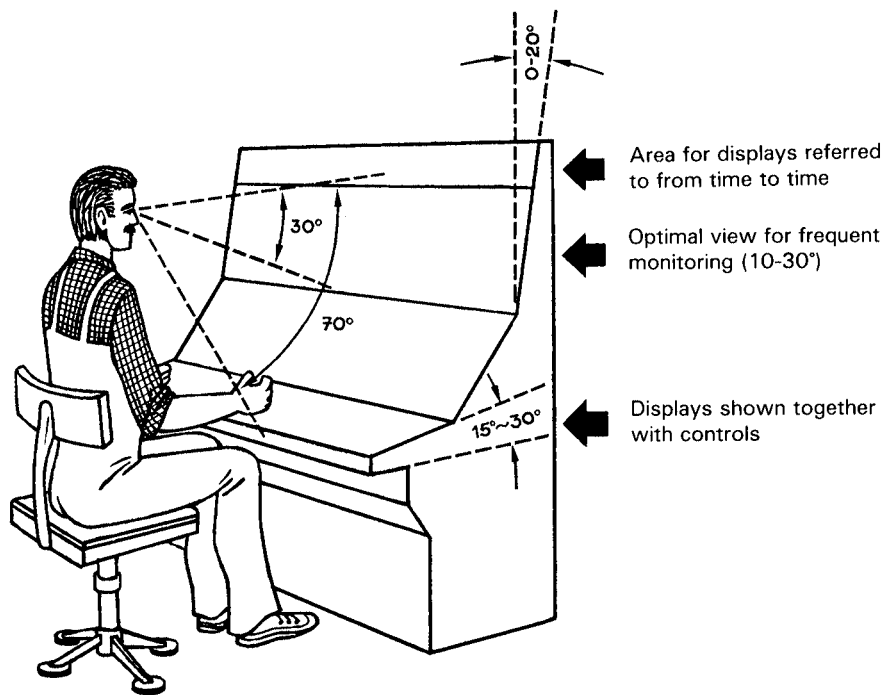
Figure 60

Different display areas in a typical visual layout for a worker.

Label clearly what operation is meant

Place controls in easy-to-identify sequence

ON ON ON

OFF OFF OFF

FAN 1 FAN 2 FAN 3

A B C

a b c

Mutually related dials and controls should be grouped together

Make clearly identifiable which control corresponds to which

ON ON ON ON

OFF OFF OFF OFF

red yellow blue green

EMERGENCY

CUT-OFF

red

Use different shapes, sizes or colours so as to make it easy to distinguish one from another

Make the emergency switch easily visible

Figure 61

Arrangement of dials and switches to minimise mistakes.

40
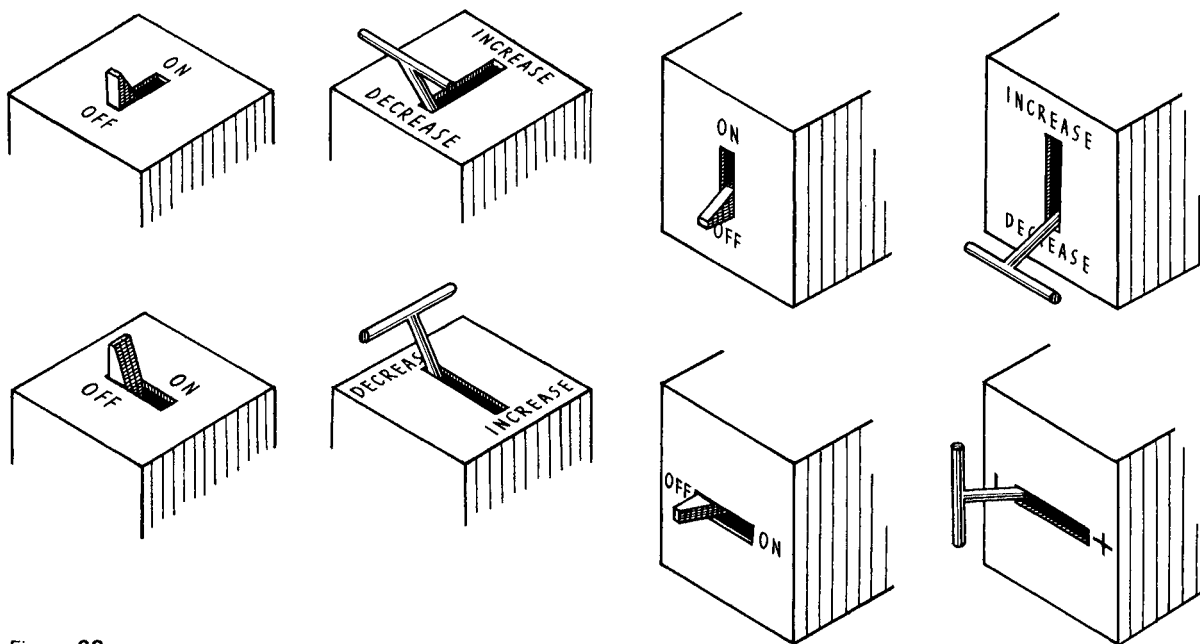
Figure **62**

Direction of controls which are easy to understand for most people.

Good location of frequently used displays is important. Such displays should be placed at an appropriate distance (about 50-70 cm from the eye for those which should be clearly seen) and within the natural line of sight (10-30° downward from the eye level). A typical visual layout of displays is given in figure 60.

Distinguishability is as important as location. For example, a stop switch should be clearly distinguishable from a start switch, an emergency signal from a normal-condition signal. This is helped by:

- using standard layouts for switches, gauges, etc. (grouping mutually related displays and controls using the same on-off directions, placing displays and controls according to easy-to-identify sequences, etc.);

- attaching clearly visible, simply worded labels; and

- using different sizes, shapes or colours for different kinds of switches or signals.

In order to improve displays (signals, dials, gauges and other visual devices), it is useful to make it clear what action is expected. An emergency signal should be outstanding in its position and size and should be red in colour. A switch for machine X should be placed near a gauge for machine X or in a position easily understood as related to machine X. Further, displays should be arranged so that indicator positions requiring action are easy to see. Examples are given in figure 61.

Sometimes workers are confused about the direction of operations. This happens with on-off switches or increase-decrease controls. These directions must be made easy to understand according to common sense and local customs (figure 62).

Summary
Rules for design of efficient, comfortable work-stations
Keep materials, tools and controls within easy reach
Improve work posture for greater efficiency
Use clamps, jigs, levers and other devices to save time and effort
Improve displays and controls to minimise mistakes

5

Productive machine safety

Machines are essential to modern production. However, along with increased productivity, they have brought hazards into the workplace. Proper control of machine hazards has traditionally been seen as costly and a constraint on productivity. Moreover, it has been observed that the workers may remove guards or refuse to wear personal protective equipment while working with or around machines. It is not surprising that machine safety is a low priority in many enterprises.

This chapter will demonstrate that many negative attitudes concerning machine safety are unjustified. It is often possible to eliminate a machine hazard while at the same time increasing production. Even when guards are necessary, they need not be costly or reduce productivity.

Machine dangers exist at several distinct locations: at the point of operation, where the power is transmitted to machines and around any other moving parts. This chapter will concentrate on the point of operation, which is usually more difficult to protect and is related to productivity. The other hazards, however, should not be neglected.

Give your machines a productivity check

Walk through the plant and take note of the following:

(a) Are there any delays or bottlenecks caused by specific machines?

(b) Do any machines operate slowly because of feeding or ejection?

(c) Is there fear or hesitation caused by dangerous machines or processes?

(d) Are there situations where machine guards have been altered, removed or destroyed?

If you have answered yes to any of the above questions, the remainder of this guide will assist you in dealing with the problems of machine productivity and safety.

Eliminate the hazard; or install guards; or, as a last resort, use personal protective equipment – always in this order

You certainly do not want an accident to occur: they are always linked with financial losses as well as human suffering. However, avoiding accidents in a workshop where many potential hazards are present is not an easy task. You need a well-developed strategy.

The best idea of all is to remove the hazard entirely. Does this sound impossible? This chapter will show you a number of ways in which you can completely eliminate a hazard while increasing productivity. You should always try to find a way to do this, both because it is best for safety and because it gives you the highest return for the time and money you invest.

If you cannot eliminate a hazard, place a guard around it. However, guards must be very carefully designed or they may get in the way. Have any guards in your factory been removed?

It is well known that just providing personal protective equipment does not ensure that it will be used. Even if you put a lot of effort into persuading your workers to use personal protective equipment you cannot be absolutely certain that it will be used properly at all times. We therefore strongly recommend that you use personal protective equipment as a last resort. If you must invest in personal protective equipment, make sure you monitor its constant and correct use.

Remember:

First: Remove or substitute the hazard with a less dangerous machine or process.

If this is impossible: Erect guards around the hazard.

As a last resort: Provide personal protective equipment until the hazard can be eliminated or guarded.

Purchase safe machines

When a new machine is ordered, care should be taken to specify a machine which is safe by construction. Dangerous parts should be situated in a position where they cannot harm the worker. In particular, points of operation should be free from danger.

Manufacturers or sales personnel may recommend a machine without guards to reduce costs. Catalogues may offer unsafe versions at a lower price. Such machines are usually illegal and can cause you many problems once they are installed. You can save yourself a lot of trouble and expense by choosing the right machines.

As you will learn later in this chapter, automatic or mechanical feeding and ejection devices can eliminate risks while greatly increasing productivity. You should always consider ordering a machine with such devices, because the devices are not expensive relative to the total cost of the machine but they make a big difference in production.

You should also make sure that you have a manual for the machine and that any operating instructions and labels are in the correct language and readily available to the worker.

Use feeding and ejection devices to increase productivity and reduce machine hazards

The productivity of many types of machine, especially presses and punches, is limited by the rate at which the product can be fed into the machine and removed from the point of operation.

When feeding or ejection devices are not used, the speed of production will be influenced by the speed of the worker, the complexity of the task, the type of guard and necessary safety measures. Without automatic or mechanical feeding and ejection, the worker will be required to place the stock, remove his or her hands for the machine cycle, remove the stock and clear the stock from the machine. Only about 20 per cent of the time will be used for actual machine production. And this does not take into account the removal and replacement of point-of-operation machine guards if they are not automatic. With feeding and ejection devices, productivity can be greatly increased.

However, safety measures must still be considered with feeding and ejection methods. Extreme care must be exercised during machine set-up, when feeding and ejection systems are set up or adjusted, when misfeeds are removed and during lubrication and maintenance. In addition, care must be taken to evaluate properly the dangers of any new feeding or ejection devices.

Types of feeding and ejection device

There are a number of different types of machine feeding and ejection device. We will discuss a few simple ones that can be constructed locally.

The basic idea of manual feeding is to make the operator perform the task without his or her hands entering into a dangerous zone. The simplest form of such feeding devices is a *plunger* (figure 63). The plunger has a die (a slot or nest) into which the stock is placed outside of the point of operation. When the plunger is pushed into the point of operation, the machine is cycled.
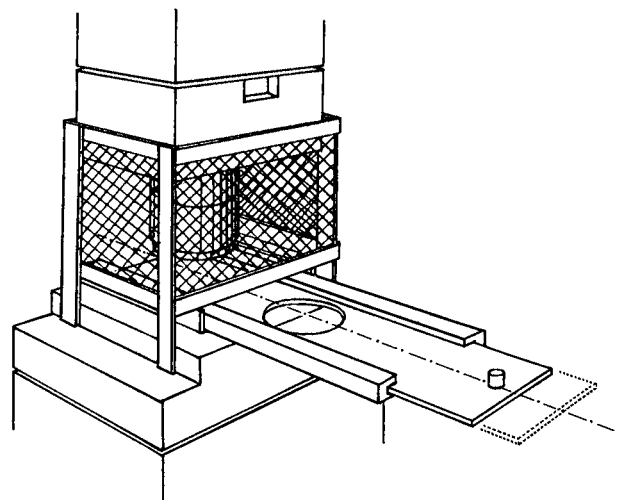
Figure **63**

Power press with plunger feed.
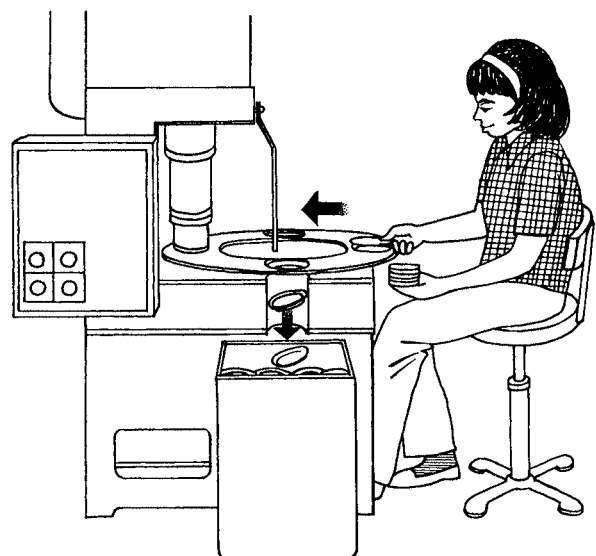
Figure **64**

Power press with carousel feed.
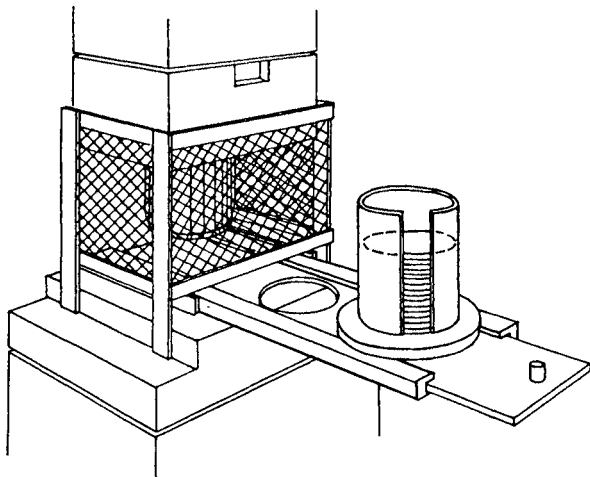
Figure **65**

Power press with plunger and magazine feed.

Figure **66**

Power press with chute feed.

A *carousel type of feeder* (figure 64) based on the same principle can considerably increase the productivity of press operators. As can be seen in figure 64, the feeder provides automatic ejection and collection of finished stock.

A *gravity feed magazine* (figure 65) can be incorporated into the plunger device, thus saving the worker from having to place new stock at each cycle.

It is easy to see how much time can be saved by a plunger feed with a magazine compared with manual insertion of stock.

There are many other ways to benefit from "free" gravity. In some cases a *simple inclined chute feeder* (figure 66) can be used to move the stock into the dies. Note that in the illustration, a guard protects the operator from the point of operation.

This easy-to-make gravity feeder (figure 67) can double the productivity of grinding operations.

There are many other forms of feeding and ejection system ranging from the very simple to the very complex. Some of the easiest to design and install are semi-automatic and use chutes, dials and plungers. Ejection may be accomplished by using a mechanical device, compressed air, or a device that is part of the feeding system.

a

b
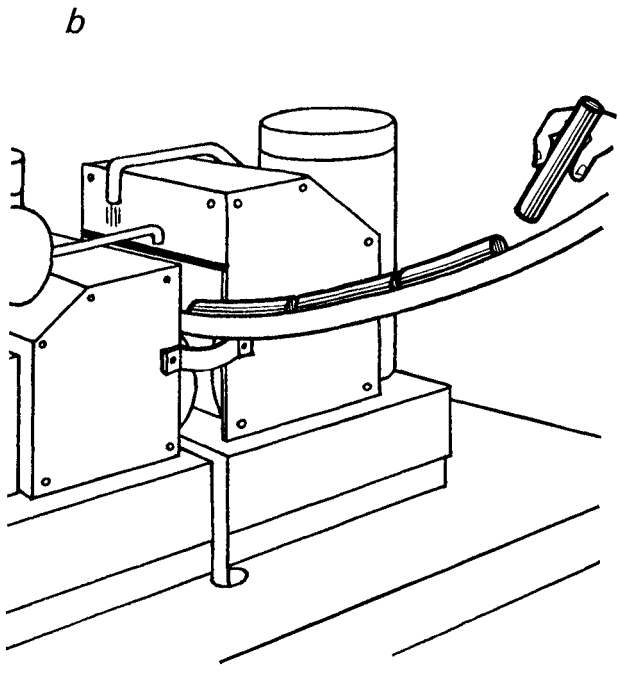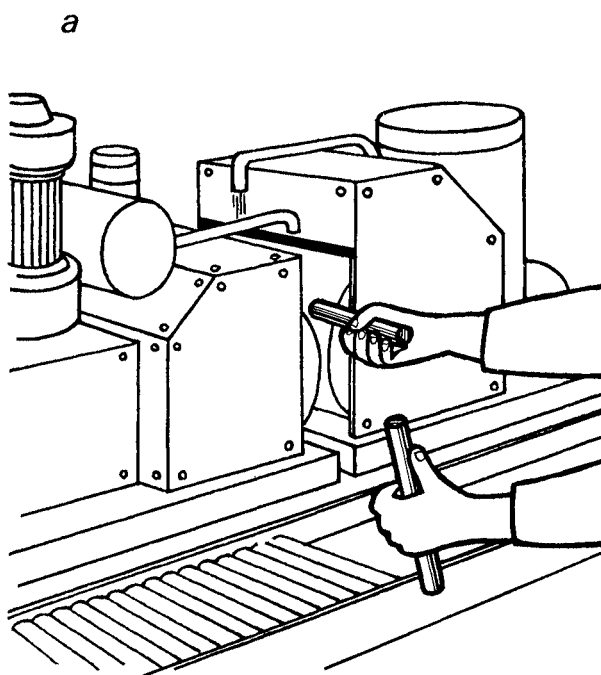
Figure **67**

Steel pin grinding machine. *(a)* Hand feed. *(b)* Gravity chute feed.

Machines have different types of action and production requirement. They also have different types of danger. Rotating shafts, wheels, rollers, pulleys and gears can catch clothing or skin and literally pull the worker into a machine. When one part rolls against another, a "nip point" is created where hands or clothing can also be caught (figure 68). The back and forth movement of machines, reciprocating motion, may catch a worker between the moving machine or stock and a stationary object. Direct contact with cutting operations, punching operations, shearing and bending can also lead to serious accidents. It is important to match guards both to the requirements of the machines and to the specific nature of the hazards involved.

Figure **69**

An interlock guard with a shut-off device.

Figure **68**

Nip points.

Types of machine guard

Fixed guards are simple guards attached directly to the machine or to a stable surface such as a wall or floor. They should be made of strong material and provide protection against flying fragments. Fixed guards at the point of operation should be accompanied by feeding and ejection systems so as not to limit production. Fixed guards should be removable only by using tools.

Interlock guards are at times combined with fixed guards or covers. They may interrupt the electrical or mechanical cycling of the machine if the guard or cover is opened or removed (figure 69). They may also block access to the point of operation just prior to the work cycle (figure 70). Great care must be taken, when a process has inertia, to see that it takes more time to open the guard than the process takes to stop.

Adjustable guards are guards that can be adjusted to suit the size of stock being introduced into the point of operation and still provide a high degree of protection (figures 71 and 72).

Figure **70**

Pedal activation of an interlock guard.
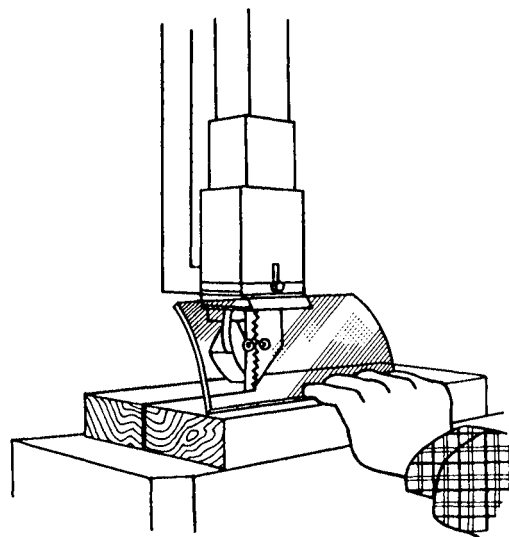
Figure **71**

Adjustable guard for a bandsaw.
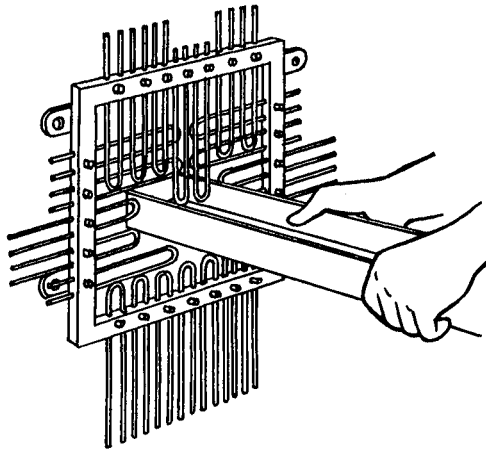
Figure **72**

Adjustable guard on a power press.

Two-hand controls. Accidents often happen because workers are expected to insert a work-piece with one hand while operating a switch with the other, and if their timing is ever off, the machine will cycle with their hand inside. A possible solution is to design controls so that two switches or levers must both be operated at the same time by different hands. The worker's hands must then be outside the machine before it operates.

However, it is not easy to design control buttons or other devices which cannot be operated with one hand, taped or jammed on, pressed with the knee or otherwise circumvented. It is therefore necessary to monitor that such devices are properly used.
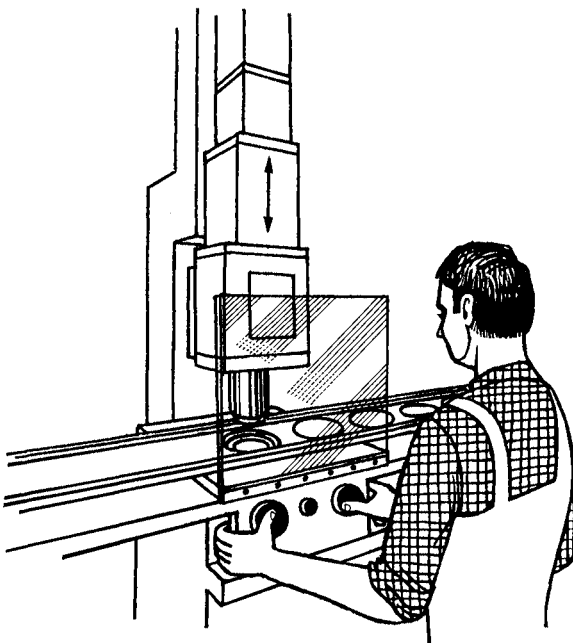
Figure **73**

A machine with two-hand controls.

Designing machine guards

Here are some helpful points for designing and building machine guards. Guards frequently can be built on the premises at low cost.

- Complete enclosure is preferable to a partial enclosure. A partial guard should be avoided.
- Guards should fit the danger areas as closely as possible. Caution: A moving belt rubbing against a fixed guard can not only damage the belt but may also be a potential source of fire ignition.
- Guards should be combined with feeding and ejection where possible.
- In order not to reduce productivity, guards should be able to be quickly opened and closed for simple maintenance tasks. A hinged guard that is designed to interfere with production if it is opened for maintenance will encourage replacement before operation.
- Guards should leave the operation easy to see.
- Any guard that reduces productivity should be redesigned.

Maintain machines properly

Even with guards in place, a poorly maintained machine can be dangerous. It will also have more breakdowns and quality problems. Proper maintenance is not lost production time, it is an investment in higher productivity and lower repair costs.

Maintenance should also include machine guards. Frequently a worker will remove a guard to clean a machine, change a die, or perform maintenance tasks and lubrication. A guard is also frequently removed because the visibility at the point of operation may be decreased by the guard and the worker cannot monitor the quality of the product. These guards should be inspected, cleaned and replaced. If necessary they should be redesigned.

A machine maintenance programme, carried out by qualified personnel, will reduce the frequency of repairs and reduce the need of the worker to remove guards. The programme should also include daily cleaning of areas necessary for visual monitoring.

When machines are being repaired or when maintenance tasks are being performed, the control mechanisms of the machines should be locked and have a tag stating "DANGER, DO NOT OPERATE".

If no other method of protection is available, use personal protective equipment

The very last resort, if the hazard cannot be eliminated and the worker cannot be protected by properly designed guards, is the use of personal protective equipment.

However, there are times when the hazards on the job are such that personal protective equipment should be routinely worn.

If personal protective equipment is necessary, only equipment that meets nationally defined standards for specific hazards should be used. As with other equipment, personal protective equipment must be maintained according to manufacturer's instructions, and when it is damaged or worn, it must be replaced.

Summary
Rules for making machines safer and more productive

Give your machines a productivity check

Eliminate the hazard; or install guards; or, as a last resort, use personal protective equipment — always in this order

Purchase safe machines

Use feeding and ejection devices to increase productivity and reduce machine hazards

Use the right type of guard

Maintain machines properly

If no other method of protection is available, use personal protective equipment

6

Control of hazardous substances

Hazardous substances of one form or another can be found in almost all small and medium-sized enterprises. There are simple and inexpensive ways to control most of the problems. Improvements often result in cost savings and productivity benefits.

A polluted working environment is often harmful to production. High levels of dust, oil, paints and other sprays, etc., interfere with efficient production, require extra inspection and cleaning operations and may spoil materials or final products. There is excellent potential for increasing productivity and quality.

Exposure to many chemical substances causes fatigue, headache, dizziness and irritation of eyes and air passages, resulting in a reduction of productivity and quality and increased absenteeism and turnover of staff. When conditions are improved, labour output goes up.

Many problems of chemical hazards can be solved at little or no cost and there are often savings in materials and energy. This chapter does not cover all problems where protection is required by laws and regulations. Some identification, measurement,

evaluation and control measures may need to be carried out by specialised professionals. Contact the local inspectorate or labour institute if you need help.

Replace a dangerous substance with a less dangerous one

Many small enterprises use organic solvents for cleaning and degreasing metal and other materials. Organic solvents are dangerous and expensive.

It may be possible to replace organic solvents with less dangerous substances.

For example in cleaning, oil and grease can normally be removed with a soap-based cleaning solution. A 5-10 per cent solution of soap will normally be less expensive and less dangerous than an organic solvent (figure 74).

SOAP

Final cleaning

THINNER

CAUSTIC SODA
Corrosive

Degreasing with dangerous thinner

Degreasing before painting
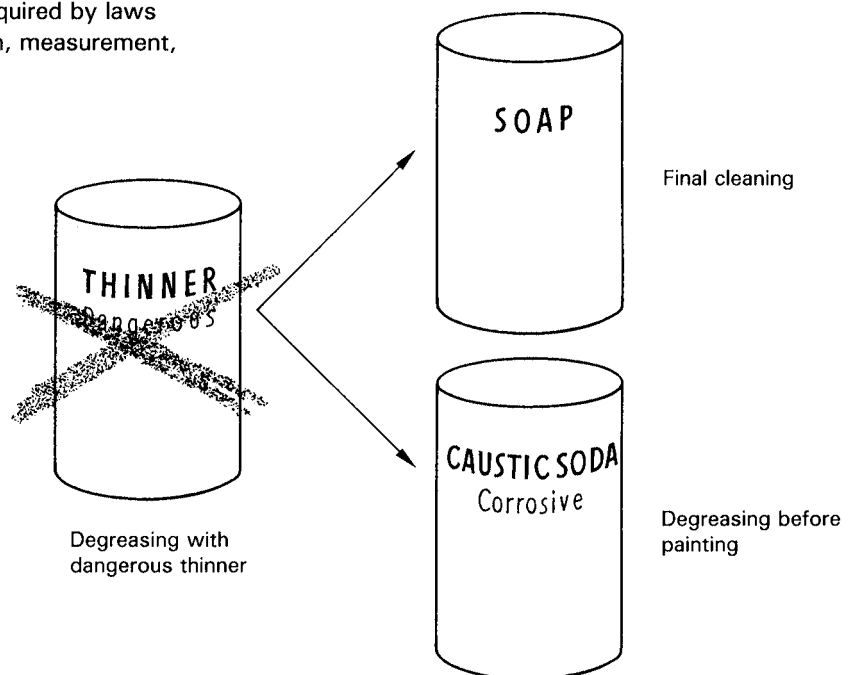
Figure **74**

Substitute soap or alkalis for organic solvents.

Degreasing bath

Mixing machine
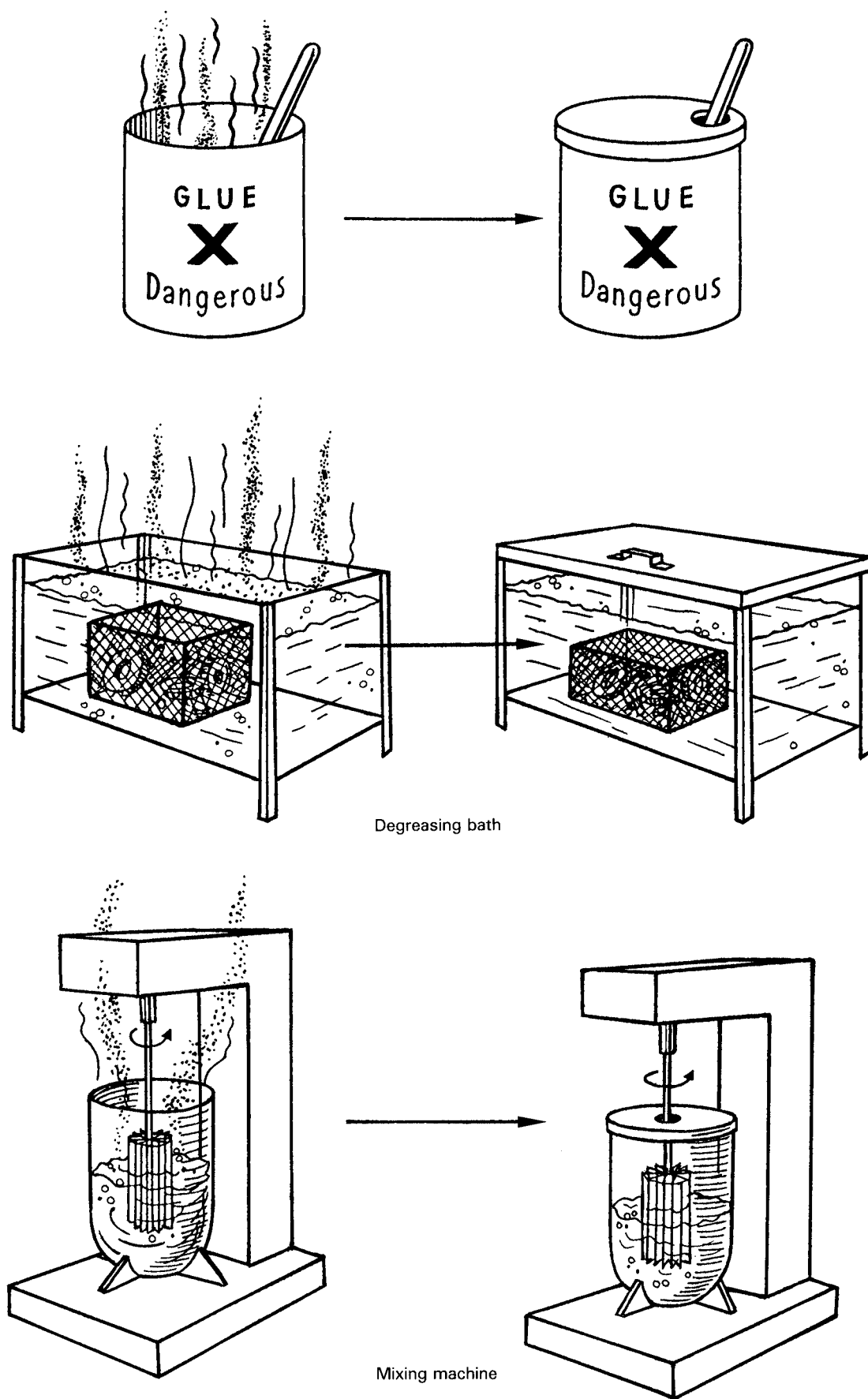
Figure 75

Lids can significantly reduce evaporation.

More complete degreasing can be achieved by using an alkaline substance such as caustic soda (sodium hydroxide) or calcium hydroxide. A solution using one of these substances will normally degrease metal surfaces sufficiently to allow paint to be applied without problems.

To avoid rust, cleaned products should be dried properly and each unit should be stored separately.

Cleaning and degreasing with soap and alkalis will often be less dangerous and less expensive than with organic solvents. Less ventilation is needed (except when alkalis are heated). Respirators are not normally needed, though goggles and gloves should be used with alkalis.

Use lids, covers, maintenance and isolation of processes to control hazards and reduce losses

Substances evaporating from open containers or dripping from leaky containers or pipes are direct losses that raise your costs. They also can threaten workers' health.

Fumes from organic solvents, paint or glue can be controlled by using specially built lids to reduce dangerous and wasteful evaporation (figure 75). Enclosure by means of covers also reduces the amount of dust from machines such as lathes and shapers, grinders or mixers.

Poor machine maintenance can also create unnecessary risks and losses. Dripping oil from a lathe or other machine could get on workers' skin and clothes and create a risk of eczema and skin cancer. Such spillages also constitute a loss of expensive oil.

Some risks can be reduced by isolating the processes in a separate room or an enclosed area. Exposure is limited to a few workers who can be given special protection.

Save energy used to overheat chemicals

Hot liquids evaporate and concentrate potentially dangerous substances in the air. This occurs when cleaning/degreasing baths containing organic solvents, alkalis and acids are heated; when glues and coating materials are melted; and when electroplating is done. These processes are frequently carried out without knowledge of the appropriate maximum temperature levels. Overheating increases workers' exposure to dangerous chemicals and means that more energy is used while expensive chemicals evaporate.

A thermostat can help you to maintain the lowest appropriate temperature (figure 76). If the use of a thermostat is not feasible, a thermometer can be used together with manual temperature regulation.
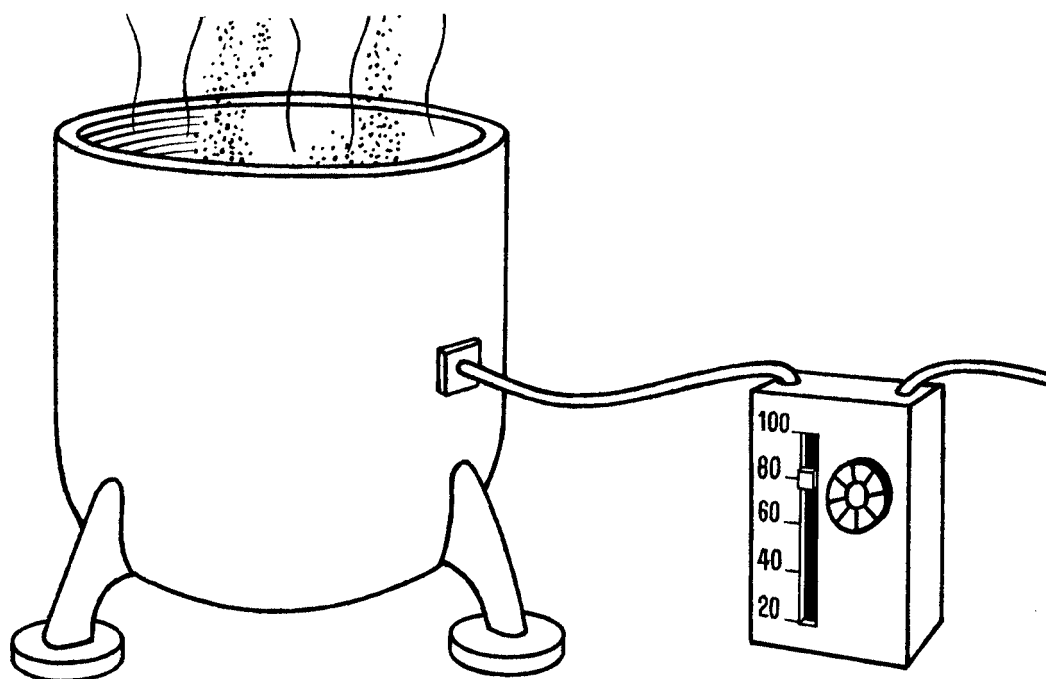
Figure **76**

A thermostat can reduce energy consumption and evaporation of dangerous substances.

Clean properly – don't spread dust

Dusts originate from grinding, sawing, mixing, packing, spinning and other manufacturing processes. The size of dust particles and the hazards vary.

Dust increases wear and tear on machinery, which thus requires more maintenance. It may also negatively affect the quality of raw materials and finished products. Dust entering the respiratory system can damage the workers' lungs. Some dusts can also be absorbed through the skin.

Dust should be removed regularly. Most dust should be eliminated at the source by exhaust and ventilation devices (such as those connected to grinding machines and circular saws). Residual dust should be removed daily. More comprehensive cleaning should be carried out as often as necessary. This cleaning should include walls, storage racks and other areas where dust accumulates. Dust on windows, walls and lamps will significantly reduce the lighting in the workplace.

Warning: Do not sweep or blow dust away. Sweeping the floor or blowing dust from work-benches and materials with compressed air are commonly used cleaning methods which are dangerous and of little value. Dust containing very small particles does not fall immediately to the floor after being raised by sweeping and blowing. A 0.001 mm particle will only fall 1 m in 3.5 hours in static air. This means that a particle remains airborne most of the working day and can be inhaled (figure 77). Frequently, dust cannot be seen in the air, but the next day it can be found covering the floors, work-benches, machinery and materials.

Effective methods of controlling dust include using a vacuum cleaner and a water spray. When dust is moistened it can be easily removed with a broom or by water pressure.

Make local ventilation cost-effective

Local ventilation should only be considered as a means of reducing chemical hazards when other means have failed. Many enterprises spend a substantial amount of money to install ventilation systems to control dangerous substances. In some cases expensive ventilation systems are purchased and show poor results. Frequently, low-cost measures will achieve equal or better results. A few very practical ideas can be employed.

Use fans properly

Fans may be utilised to remove dangerous substances from the workplace. Contaminated air can be pushed or blown outside through an opening (figure 78). In some cases dust can be blown into a
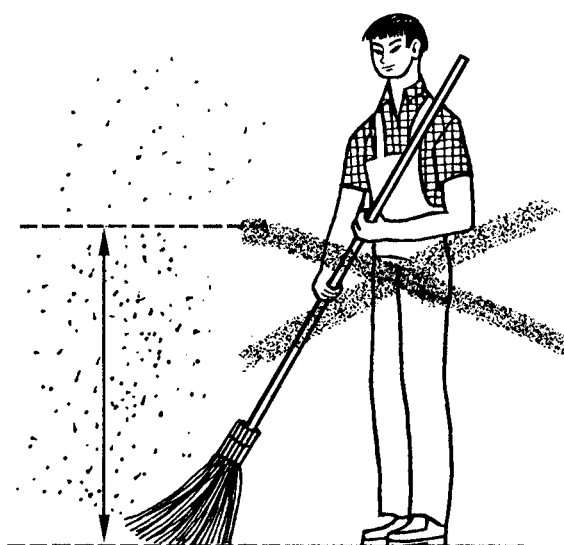
Figure **77**

It will be a full working day before all the small dust particles have fallen to the ground. That's why the use of vacuum cleaning is strongly recommended.

Good

Wrong

Wrong
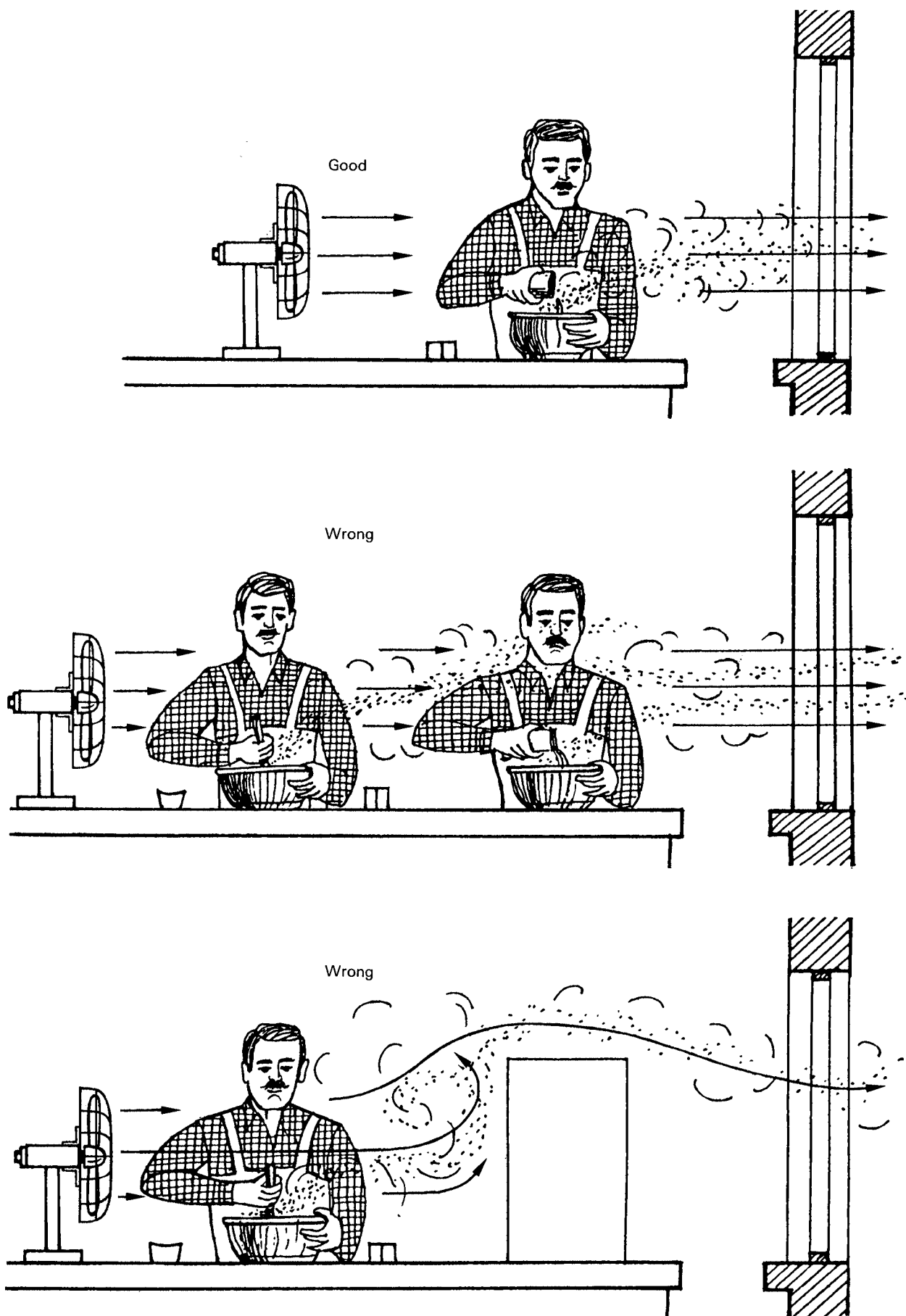
Figure **78**

Use of fans to remove contaminated air.

collection hood (figure 79). A few points should be considered:

- There should be no obstacles between the fan and opening. Anything in the way significantly reduces the desired effect.
- The air speed should be low to reduce turbulence.
- Contaminated air should not pass workers on its way to the opening.
- Air expelled from the workplace should not affect people outside the enterprise.

Use push and pull ventilation

The capability of exhaust devices, fans or ventilators to remove polluted air is very limited (figure 80). Exhaust systems used in operations such as spray painting, degreasing and welding are often inadequate.
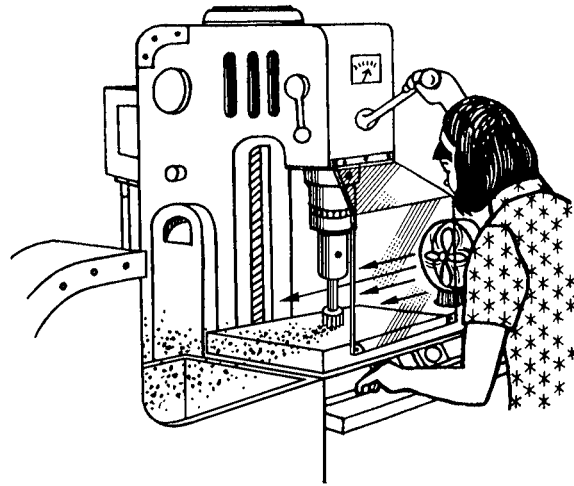
Figure **79**

Sawdust can be collected using a hood (shown on the left side of the picture).
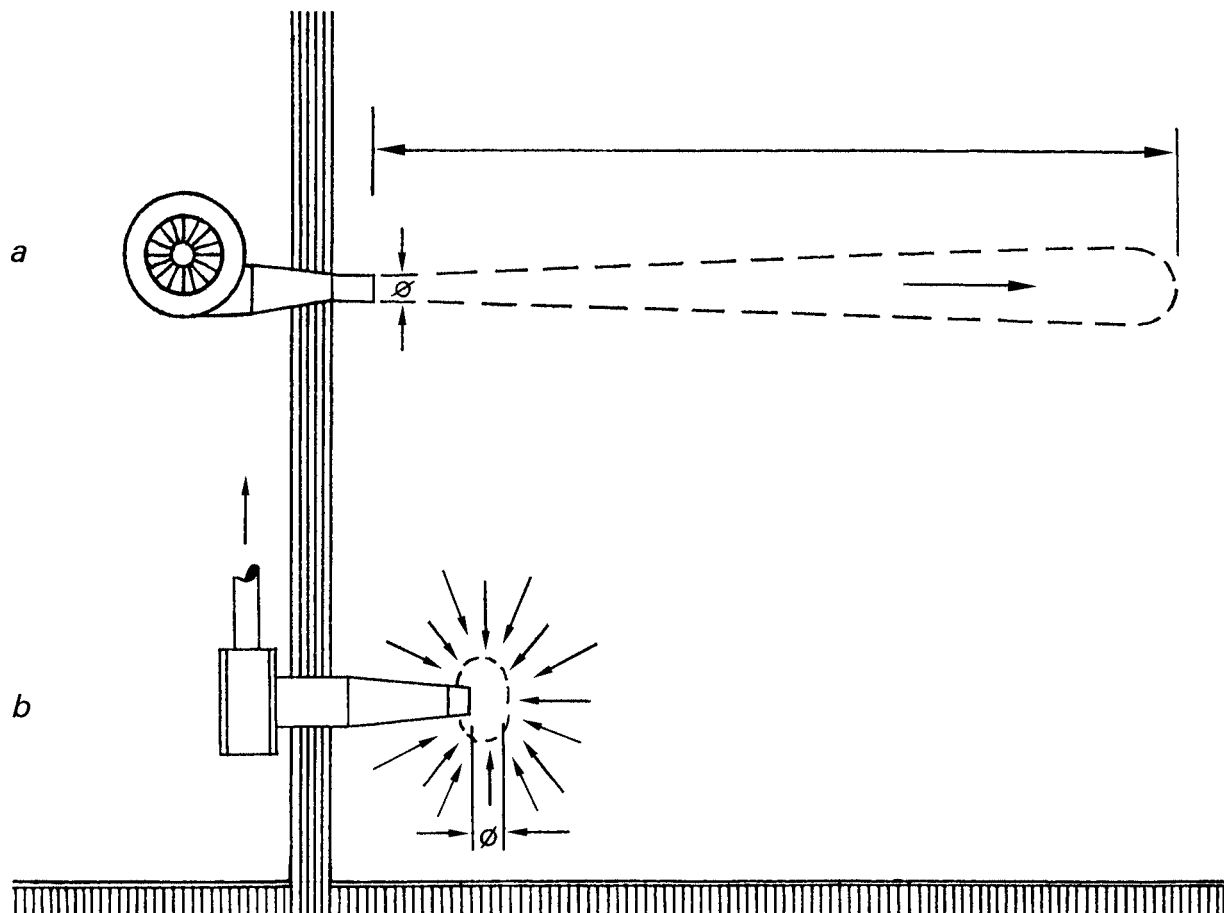
Figure **80**

The difference between pushing and pulling air. In *(a)*, air *pushed* by a fan or blower still has a useful effect quite far from the outlet. In *(b)*, a fan of the same power which *pulls* air is effective only up to one-tenth of the distance from the outlet covered by *(a)*.

54

These systems can be improved by using a small
fan to push air in the direction of the exhaust fan.
The push fan should have a limited capacity (10-20
per cent of the capacity of the exhaust fan will be
sufficient). A higher capacity fan will only create
turbulence and reduce the effect (figure 81).
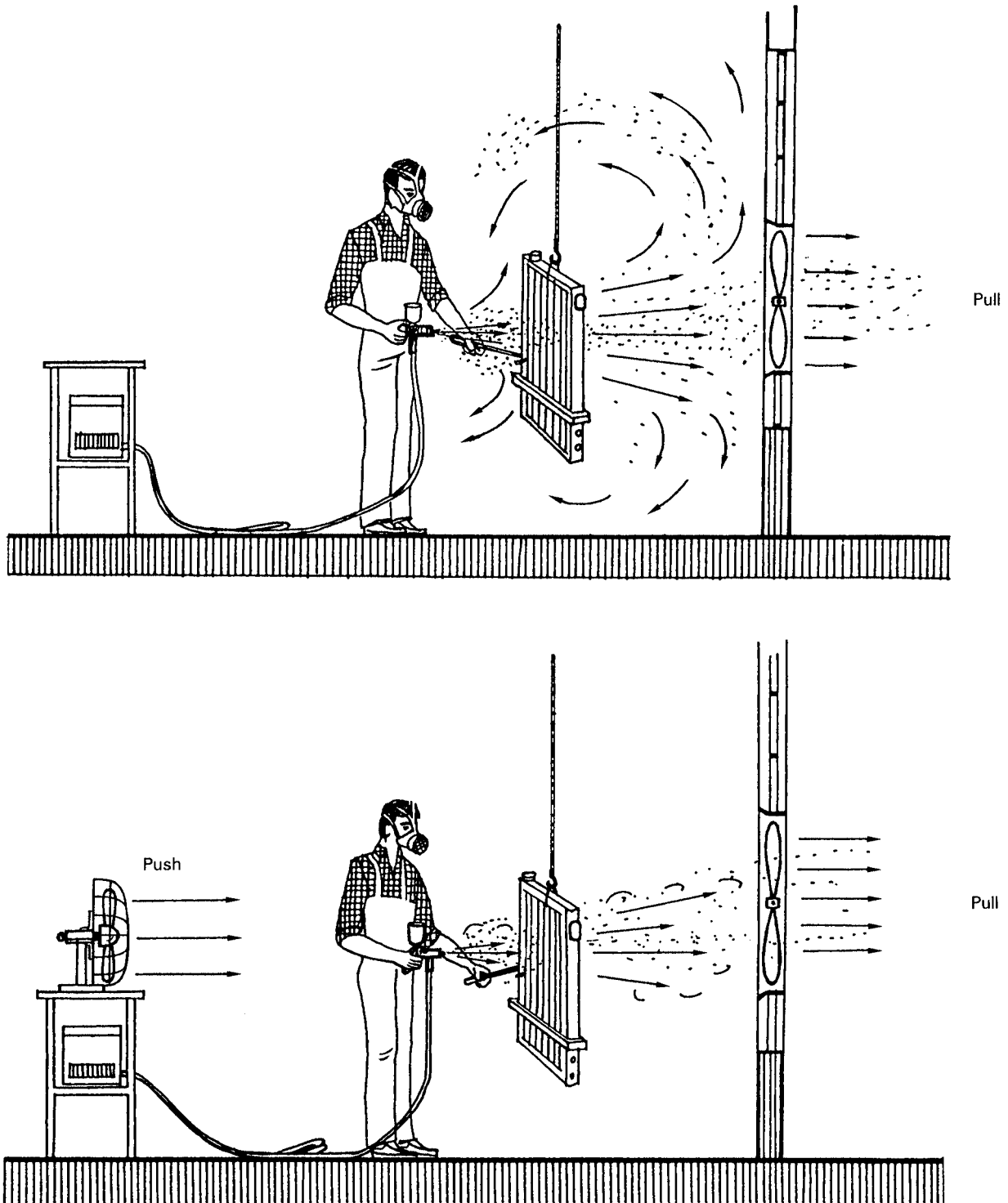
Pull

Push

Pull

Figure **81**

Push and pull ventilation.

Use natural air flow

Air temperature influences air movement. Even a few degrees difference can result in considerable movements of air. Heat sources such as boilers, ovens, and furnaces will move air upwards. If a process is releasing dangerous vapours, this natural air movement should be used to remove the vapours. Ventilation systems working against warm air currents will not work properly (figure 82).

Natural air flows such as wind blowing through or around buildings should also be used to advantage. See Chapter 9.
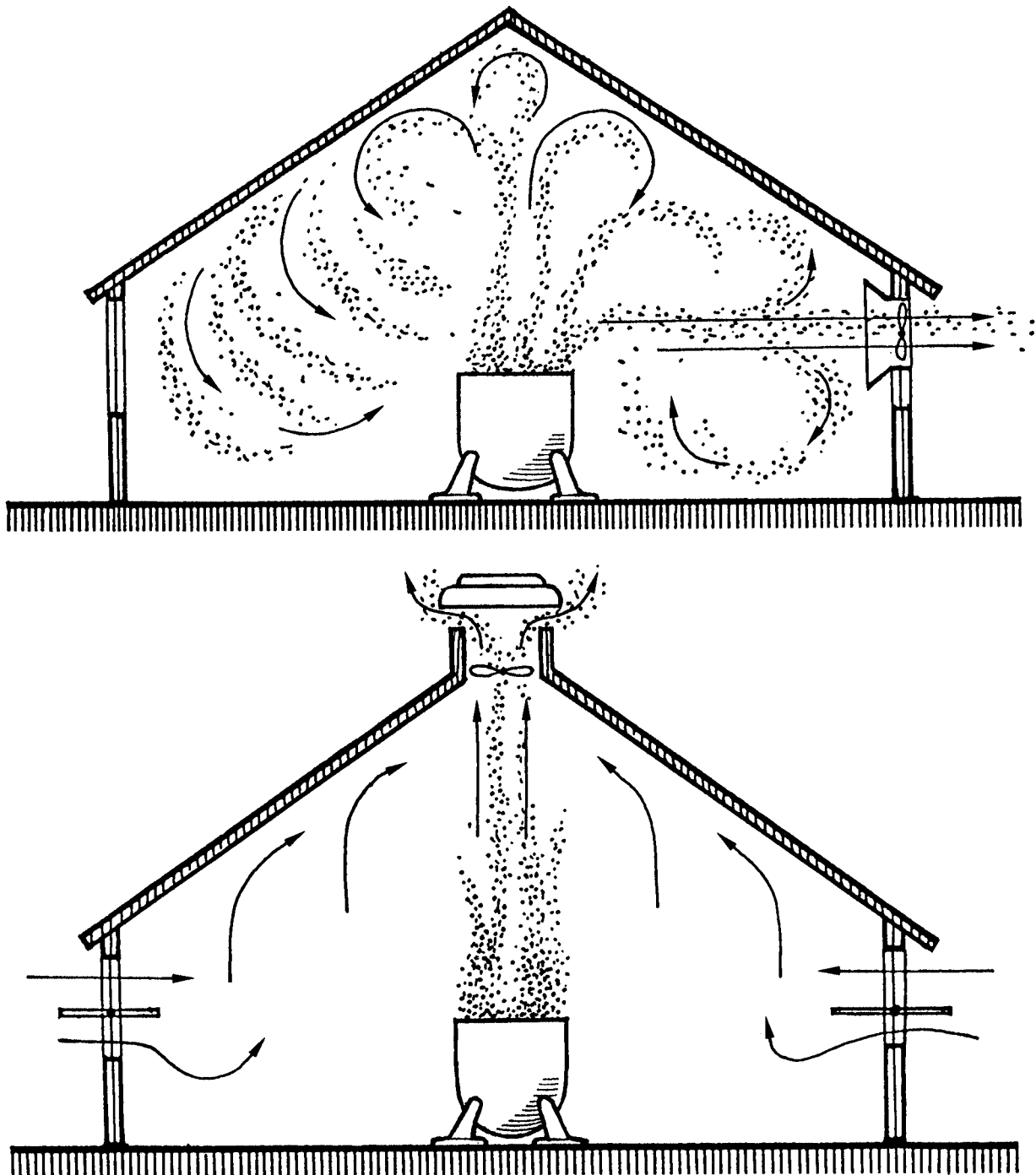
Figure **82**

Use natural air flow for ventilation.

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As a last resort, use personal protective equipment

You learned in Chapter 5 that the best strategy is to eliminate the hazard, and if this is impractical to guard (or enclose) it. However, personal protective equipment (PPE) is very often the response chosen to deal with problems with hazardous substances, even though PPE is very expensive, uncomfortable, and workers often refuse to wear it. Even expensive equipment can be useless if it is improperly chosen, maintained or used. PPE should therefore be introduced only when all other means have been exhausted. A few guide-lines can help to ensure that PPE will work effectively and that the money invested is not wasted. Most problems are related to respirators.

- Choose the appropriate protective device according to the specific hazard. The PPE supplier should be able to assist. It is critical to choose the appropriate filter with respirators. Do not use dust filters to protect against vapours. Organic solvent vapours from spray painting, degreasing and similar activities will pass directly through the dust filter (figure 83).
- Choose respirators which fit snugly. There is almost no protection if the respirator is leaky.
- Change the filter regularly. Filters protecting the worker from vapours should be changed every day or more often if needed.
- Wearing filter respirators is very strenuous due to the breathing effort required. The worker will tire more quickly and work performance will

decrease. Therefore, filter respirators should not be worn more than three hours a day. If a longer time is required a respirator supplied with compressed air should be used.
- Maintain respirators regularly. Clean and check valves and rubber edges regularly.
- Change damaged gloves. Rubber or plastic gloves should be worn to avoid skin contact with organic solvents, corrosive agents and other substances. It is important to note that some liquids can penetrate rubber and plastic. Inappropriate or worn-out gloves which allow chemicals to penetrate can be more dangerous than no gloves at all.

As you can see, PPE can mean a lot of trouble and expense for poor results. If it is your only way to obey the law, use it and use it properly. But if you can find a better alternative, you will save money and perhaps save your health and your workers' health as well.

Don't eat at the workplace or bring home dangerous substances

The most serious exposure to dangerous substances is often related to poor welfare facilities. Eating in the workplace has been the cause of many cases of lead poisoning because of contamination of fingers and food. Cases of lead poisoning and asbestos-induced lung cancer have been found among family members, because workers have carried lead or asbestos fibres home in their hair and work clothes. These facts emphasise the importance of good canteens, washing and changing facilities. See Chapter 8.

Figure **83**

A common dust filter for inert dusts, as shown in *(a)*, cannot be used as protection against vapours. A respirator with a changeable filter for vapours and dangerous dusts, as shown in *(b)*, should be used.

Summary
Rules for low-cost chemical hazard control

Replace a dangerous substance with a less dangerous one

Use lids, covers, maintenance and isolation of processes to control hazards and reduce losses

Save energy used to overheat chemicals

Clean properly – don't spread dust

Make local ventilation cost-effective

As a last resort, use personal protective equipment

Don't eat at the workplace or bring home dangerous substances

Appendix to Chapter 6

A short introduction to common dangerous chemical substances

Organic solvents

Organic solvents are widely used in industry. They are used to dissolve grease, oil, paint, plastic, glue, and similar substances. They are also used for the cleaning and degreasing of machinery and metal surfaces. They evaporate very fast and can be recognised by their smell and their capacity to dissolve other materials. Common names are thinner, white spirit, naphtha, xylene, toluene, trichloroethylene, acetone.

Organic solvents can be inhaled and absorbed through the skin. Acute effects include fatigue, headache, dizziness and irritation of skin, eyes and air passageways. They can also cause serious long-term effects such as:
- skin diseases;
- chronic brain damage (loss of memory and intellectual capacity);
- abortion and damage to unborn children;
- cancer.

There should be no skin contact with organic solvents. When there is a smell of organic solvents in the air, preventive control measures should be taken. All workers, and especially young and female workers, should be protected against exposure to organic solvents.

Corrosive substances

Acids and alkalis are the two common groups of corrosive substances. They are mainly used for cleaning purposes in small enterprises. Other uses include electroplating, battery manufacturing and processing of chemicals. Common acids are hydrochloric acid, sulphuric acid, phosphoric acid, nitric acid and acetic acid. Common alkalis are caustic soda, ammonium chloride, household ammonia and many chlorinated cleaning products.

Corrosive substances do not generally evaporate as easily as organic solvents. If it is possible to smell them in the workplace, immediate action should be taken because their vapour is a major threat to the lungs and air passageways. Workers who have had a heavy exposure to vapours from corrosive substances should be taken to a hospital immediately, since oedema (swelling) which can be fatal may occur after several hours.

The results of exposure to corrosive substances include irritation of the skin and itching. Skin contact and especially contact with the eyes should be avoided.

Dusts

Many substances can be found in the air as dusts. They can be solid particles, fumes, smoke or liquid particles. A common effect of all kinds of dust is irritation of the respiratory system, which in the long run may develop into chronic lung disease. The concentration of dust is too high when it is clearly visible. Control measures should be taken.

Organic dust from vegetable and animal sources can be a major threat to workers' health. The major types of organic dust originate from cotton and other vegetable textile fibres; coffee or tea; sugar and sugar-cane; grain; hair, feathers and bonemeal; and wood. Textile fibres cause a lung disease called byssinosis. Wood dust causes cancer of the nose. A common result is allergic reactions in the respiratory system similar to asthma.

Mineral dust containing crystalline quartz is also a very dangerous type of dust. After years of quartz exposure, the worker develops a disabling and sometimes fatal lung disease called silicosis. Mineral dusts from ore, coal, sand, concrete, ceramics, bricks and gravel will normally contain crystalline quartz.

Asbestos is another extremely dangerous type of dust. It is a fibrous material used for insulation, asbestos concrete products (roof plates, pipes), brakes, clutches, fittings and packing. After long exposure, asbestos can cause a lung disease similar to silicosis called asbestosis. Even more frequently, asbestos causes fatal cancer of the lungs and other internal organs.

Metal dusts and fumes are a serious problem. Common toxic metals are lead, chromium, copper, cadmium, manganese and mercury. They can be found in smoke from furnaces or from welding and soldering, in dust from ore or refining, in paint spraying and in dust from grinding metal or paint with metal-based pigments. Metals can cause a wide range of health problems. The more important ones are chronic bronchitis and other diseases of the air passageways; problems of the central nervous system (lead, manganese); and damage to the kidneys (chromium).

Lighting

It is well known that we receive 80 per cent of all information through our eyes. Although the human eye is very adaptable and can allow a worker to work with an absolute minimum of light, bad lighting leads to low productivity and poor quality as well as eye strain, fatigue and headaches for the worker. It has been confirmed by numerous studies that better lighting pays off through higher efficiency. Improvements in lighting conditions conducted in a number of industries have very often resulted in 10 per cent productivity growth and reduction of errors by 30 per cent.

Better lighting does not mean that more light bulbs must be bought and more electricity used. Natural lighting is often better than artificial lighting. The way lighting is arranged and maintained is equally important. For example, a change in the visual background can enable a worker to perform a task efficiently which otherwise would require tripling the lighting level.

You will learn from this chapter how to attain better lighting. There is a good chance that it will be without an increase in the electricity bill, and you may even pay less. But in any case, your business as well as the workers will definitely benefit from these improvements.

First of all, before starting to do anything, we have to decide whether the existing lighting facilities need improvement. Lighting requirements are dependent on three main factors:
- the nature of the task;
- the sharpness of the worker's eyesight;
- the environment in which the work is done.

For example, a watchmaker needs much more light than an operator in a machine shop. An older worker may need twice as much light as a younger one.

These factors make it difficult to calculate the required level of lighting using instruments and tables. However, we can learn much from going around the workplace, observing the workers and asking them about their visual problems. If workers adopt an awkward posture, with their eyes very close to the work, it is very likely that there is a problem. If there is a naked light in the worker's field of view, it definitely reduces efficiency.

Your programme of improvements may not have much impact if the workers' eyesight is insufficient. One study conducted in a factory discovered that 37 per cent of workers wearing glasses needed a new prescription and 69 per cent of those without glasses needed them. The same may be true for your company. That is why we suggest that you conduct an eyesight test for workers. Even if some of the workers do not follow advice about acquiring glasses, you will be aware of the problem and possible reasons for low efficiency.

With these ideas in mind, six rules are provided below which will help you to improve lighting at your factory.

Make full use of daylight

Natural light is the best and cheapest source of illumination, but very often small enterprises do not make full use of it. Measure the surface area of your shop-floor and your windows and skylights. If you do not have at least one-third as much window surface as floor surface, you are probably not benefiting fully from natural light. Be careful, however: windows and skylights provide heat as well as light in hot weather (and cause heat loss in cold weather).

When thinking about new windows and skylights, remember that *the higher the window, the more light it gives*. Skylights can give double the light of a low window, even if the low window was not blocked by machines or storage arrangements. If your factory doesn't have a skylight, consider replacing one roof panel with a translucent plastic panel.

Lack of *regular cleaning* can result in the loss of 10 to 20 per cent of light, if not more. Special care should be taken about skylights, which are difficult to reach, so no one cleans them.

Well-chosen *paint and finishes* on the ceiling, walls and equipment can help to cut a lighting bill by one-quarter. At the same time, this helps to produce better visual conditions and a pleasant, cheerful working environment which encourages high standards of cleanliness and housekeeping. Gains are achieved from: lower losses of reflected

light, better light diffusion and reduction of brightness contrast. In order to spread reflected light diffusely and evenly throughout the interior, *ceilings* should be made as near white as possible. The matt finish of whitewash is very good. To avoid harmful glare, don't use bright, shiny, gloss paint for *walls*. Pale colours are better than white. A slightly darker colour below eye level is helpful. *Equipment* such as machines, work-benches and desk-tops should normally be darker than walls, and their colours should be different from walls and floors so they can be seen easily.

Unless you have a full skylight system, you are likely to have a problem of unequal light distribution over the work area. Take this into account and change the *layout* of benches or machines in order to minimise shadow zones. Work-stations with high lighting requirements should be moved closer to the windows and possibly be grouped together for the provision of additional lighting.

Avoid glare

Glare means especially bright points or areas within the field of vision. Glare is often a reason for low quality and productivity. It causes a reduction in the ability to see, discomfort, annoyance and eye fatigue. Visibility can be considerably improved by elimination of glare without increasing light intensity.

There are two types of glare: direct glare and reflected (indirect) glare.

Direct glare is caused by a light source within the field of view (figure 84).

To reduce glare from windows:

— use blinds, curtains, louvers, shades, trees or vines;

— change the windows to translucent instead of transparent;

— change the orientation of work-stations. The workers, instead of facing the light source, should have their sides or backs towards the window.

To avoid glare from lamps:

— no naked light bulbs or tubes should be in the view of the worker;

— deep shades and shields should be employed. The inside edge of the shades should be painted a dark matt colour;

— shades should be mounted either low enough to ensure that all bright surfaces are completely hidden, or high enough to ensure that they are well outside the normal field of view (figure 85).

Figure **84**
Direct glare.
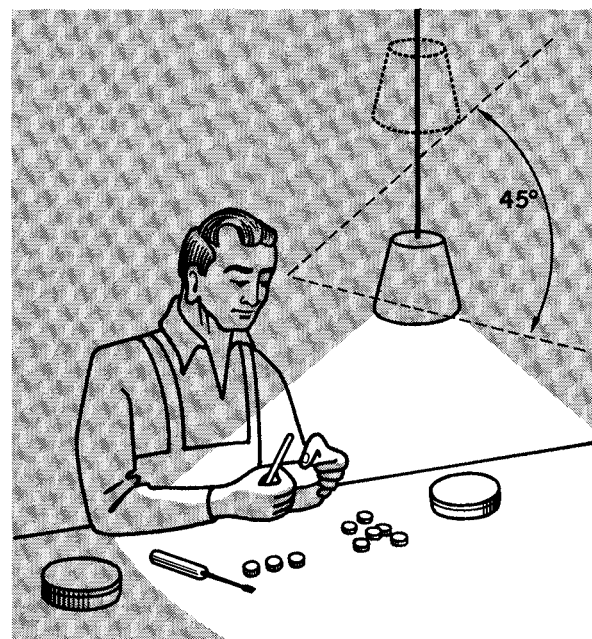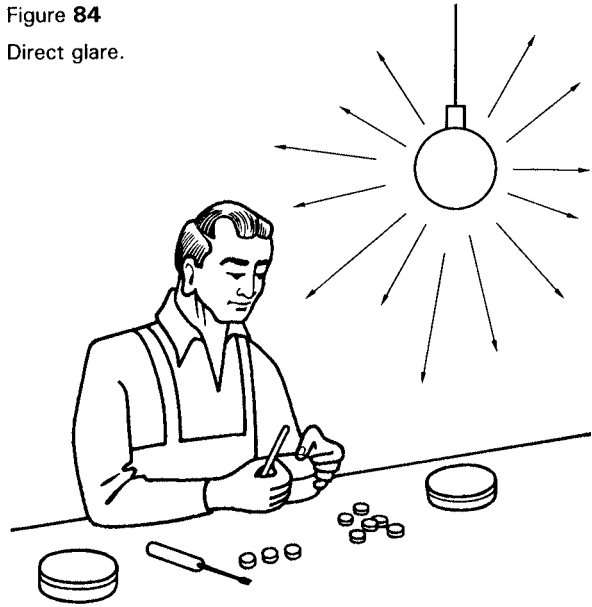
Figure **85**
A shaded lamp should be placed at the appropriate height.

Reflected (indirect) glare. Even if we are protected from direct glare, we can still be bothered by reflected glare (figures 86 and 87). To reduce the distraction from light reflection on polished surfaces such as the sides of a machine, we can:

— change the position of the light source;

— lower the brightness of the source;

— make the immediate background brighter by placing a light-coloured surface behind the task.
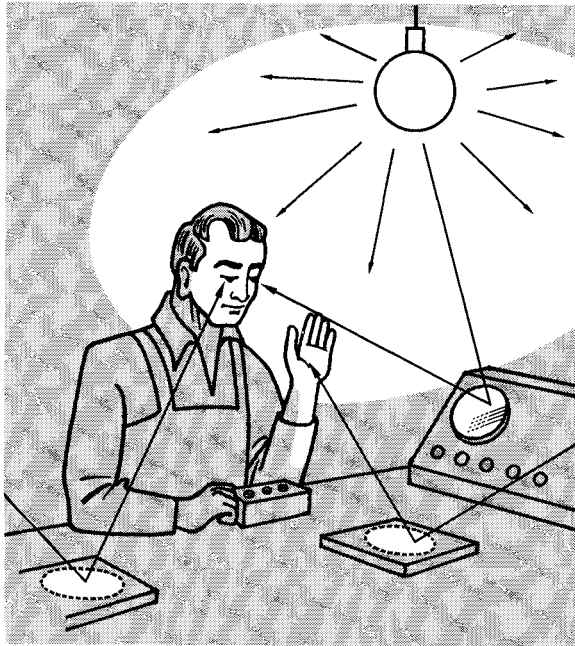
Figure **86**

Reflected (indirect) glare.

(a) Before
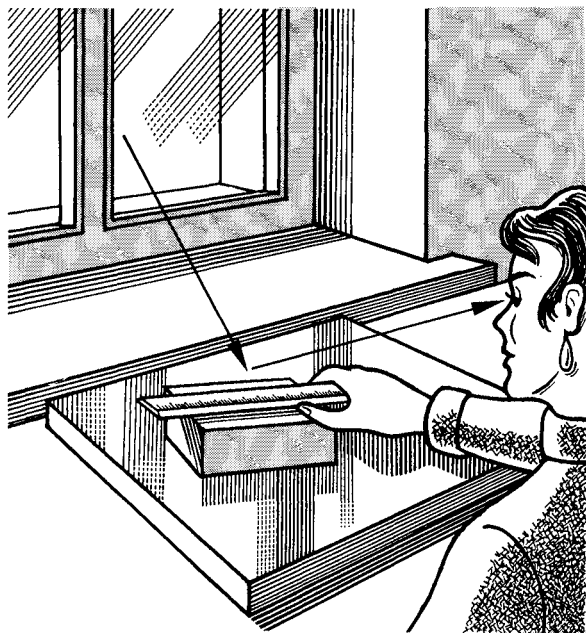
Figure **87**

Glare reflected from a polished surface reduces visibility.

(b) After

Figure **88**

Elimination of distracting details with the help of a screen.

Choose an appropriate visual task background

Visual tasks that demand close, continuous attention are performed with much less strain if their background is free from eye-catching distractions. Elimination or screening of potential distractions contributes very much to efficiency and safety (figure 88).

A person engaged on critical assembly work may be seriously distracted by the hand movements of a second worker sitting opposite. A partition up the centre of the work-bench can be a solution. The partition should be low enough to allow visual contact (figure 89).

Figure **89**

A low partition helps to avoid visual distraction.
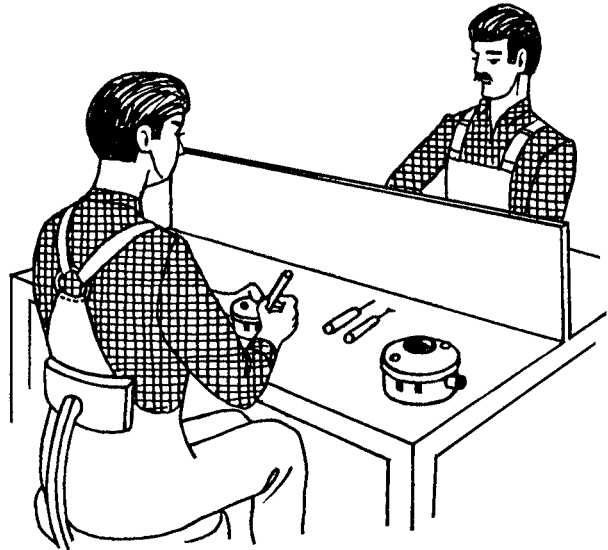
Figure **90**

Backlighting.

When the work-piece is small and held close to the eyes a plain background is particularly important. To see clearly the outlines of flat items, use a sheet of light-diffusing glass or plastic which is lit from behind by lamps or reflectors (figure 90).

Here is some general guidance for selecting an appropriate work background:

Material	Appropriate background colour
Steel, cast iron	Cream coloured
Bronze, copper	Grey-blue
Light-coloured wood	Dark
Aluminium, tin	Cream coloured
Dark wood	Grey-blue
Ground castings	Light

Avoid prolonged work in an isolated pool of light in the middle of a darkened interior. In such a case, the eye has to readjust every time the worker looks away from the brightly lit workpoint. The result: fatigue and low productivity.

Find the right place for light sources

By changing the position of lamps and the direction of light falling on an object, it is possible to improve visibility dramatically without increasing the quantity of illumination. Figure 91 demonstrates how a light can be repositioned for better visibility.

Figures 92 to 94 demonstrate the importance of finding the most appropriate light direction in order to:

- distinguish an object from its background;
- reveal its shape;
- reveal its surface texture;
- enable any marking on its surface to be seen easily.
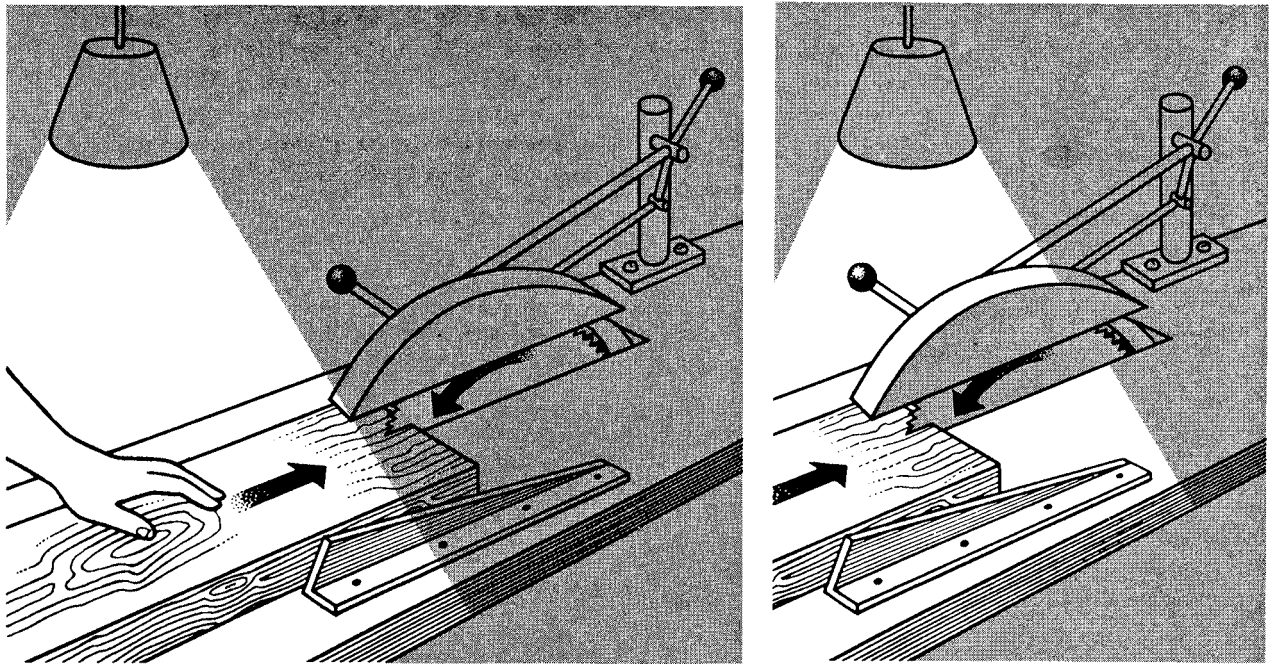
Figure **91**

Repositioning of a light source to improve safety and efficiency.

Figure **93**

Light from the side and above. This is better but much of the work item is still in shadow.
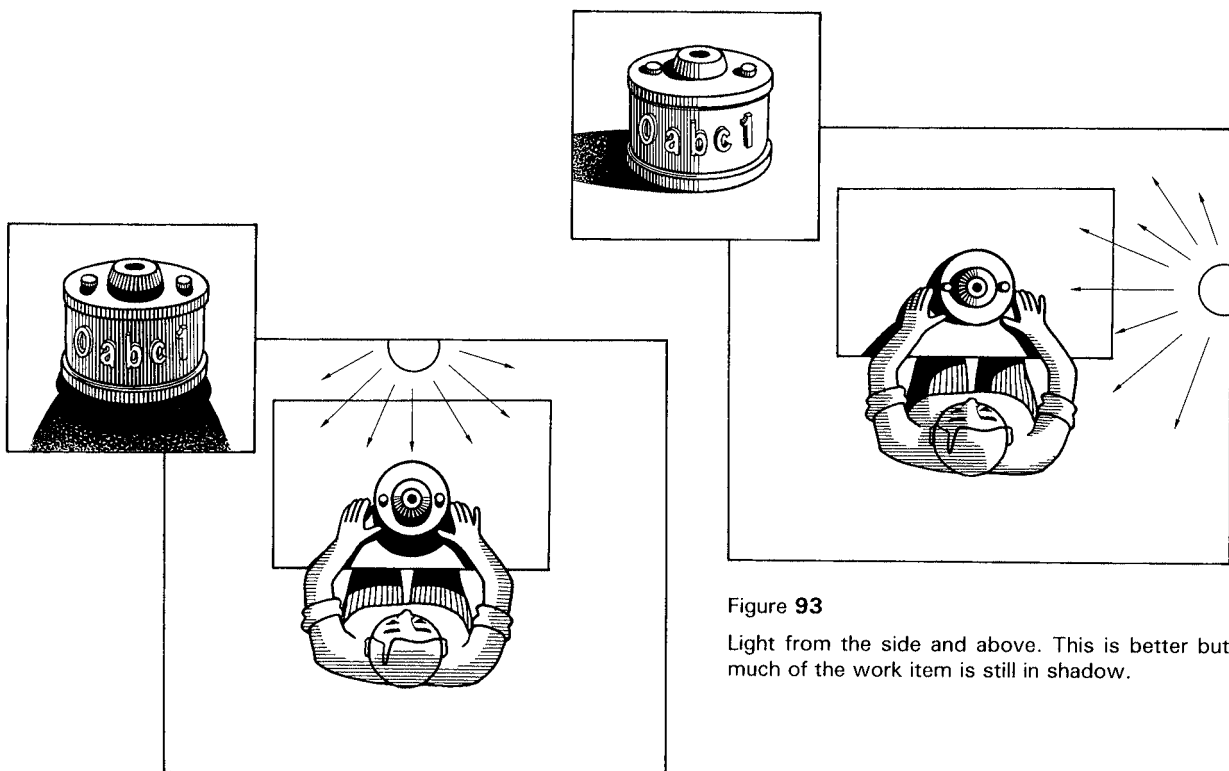
Figure **92**

Light from above and behind. The object is difficult to see and there is often a glare problem.
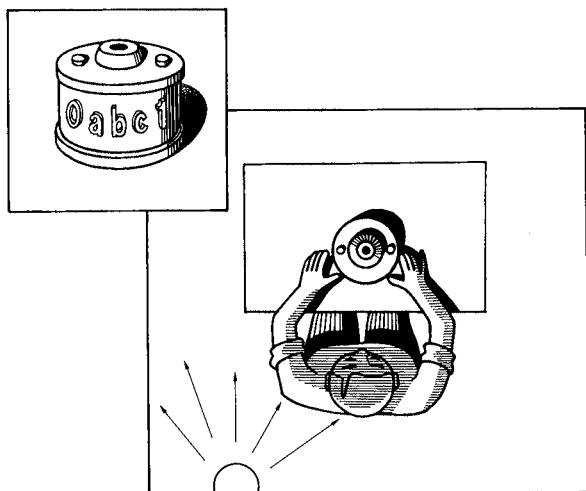
Figure **94**

Light from over the shoulder. The shape, surface texture and marking are well distinguished.
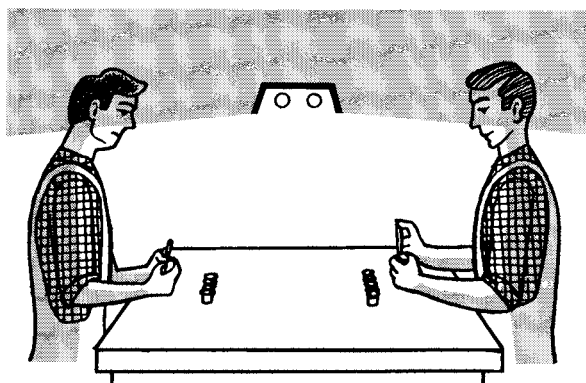
Figure **95**

Bench lighting for work with small objects.
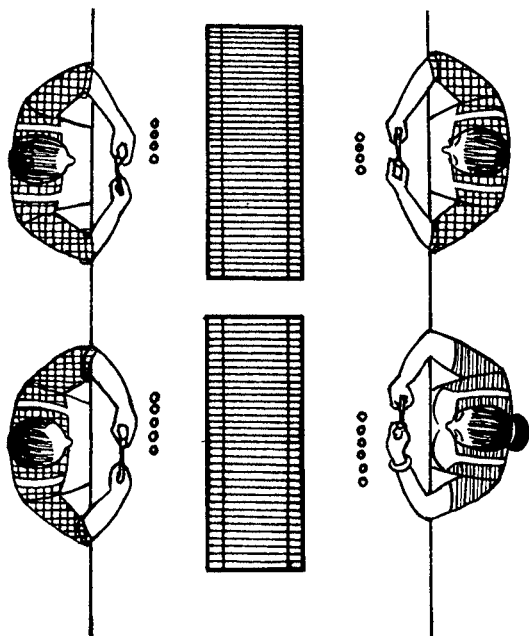
The best light usually comes over the shoulder. However, the most appropriate direction for light also depends on the type of work and the arrangement of work-surfaces. Here are some examples of different practical arrangements for long, narrow work-benches with workers on both sides.

For work with flat or small items keep the edge of the lampshade below eye level.
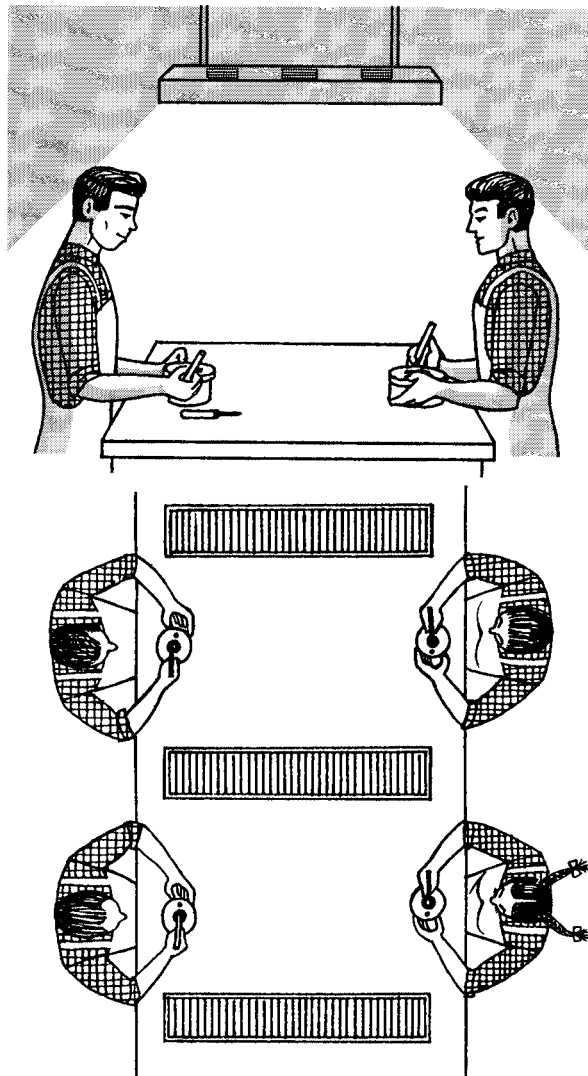
Figure **96**

Bench lighting for work with larger objects.

For work with bigger work items, place the light units just above head level and perpendicular to the work-bench (figure 96).

Figure 97 shows a variation on the above arrangements under which the proportion of light coming from the front, on the worker's left, is increased.

For the above cases, lighting units with two long fluorescent tubes can be recommended. Two switches should be provided on each unit so that the workers can select different lighting levels.
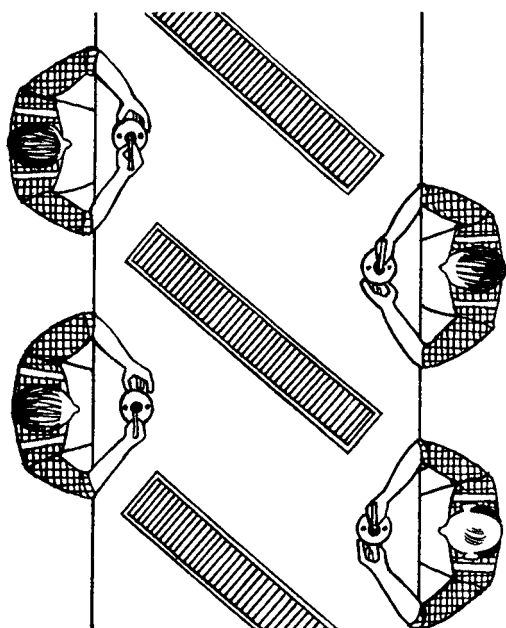
Figure 97
Bench lighting variation.

Avoid shadows

Shadows make it difficult to work. It is hard to see into a shadow (figure 98), because the eyes will adjust to the surrounding light. Sharp shadows on the work-surface are a source of poor work quality, low productivity, eyestrain, fatigue and sometimes accidents.
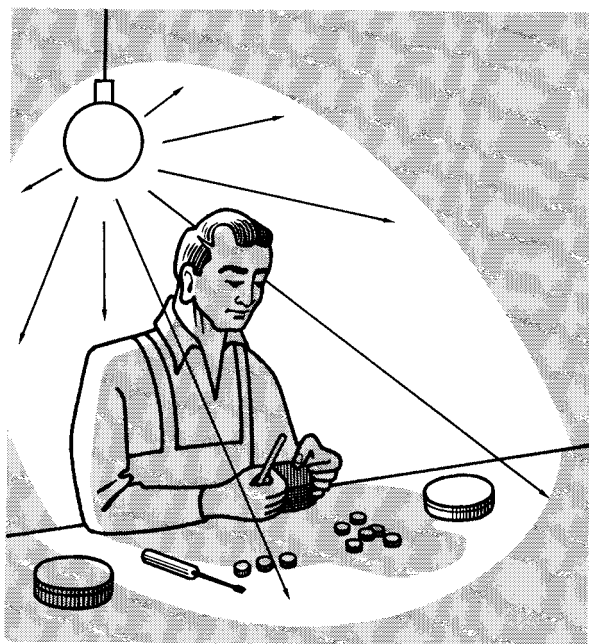
Figure 98
Sharp shadows make it difficult to work.
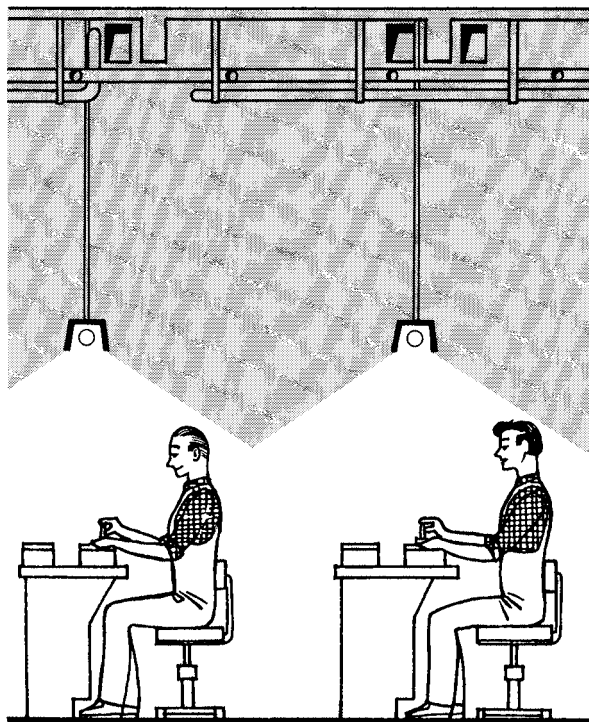
Figure 99
Direct light.
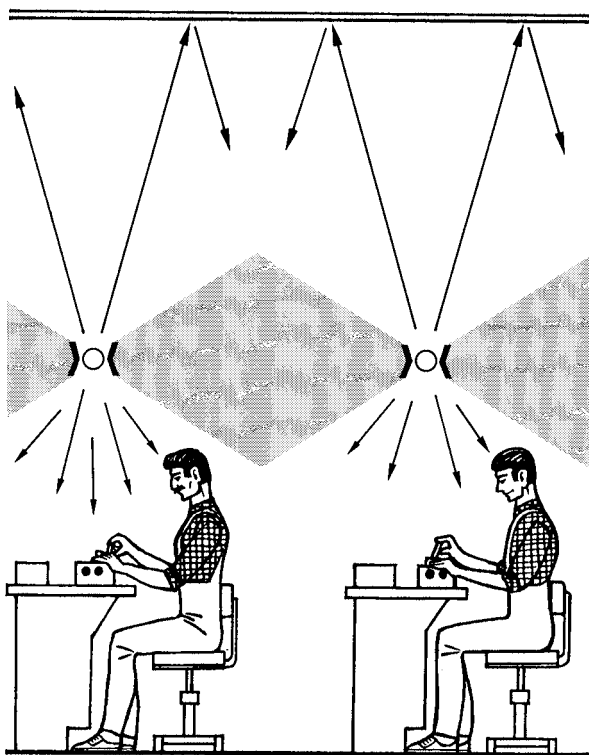
Figure 100
A mixture of direct and reflected light provides the best visibility.

Many of the suggestions made so far will help to avoid shadows. If you have made improvements in any of the following areas, you have already reduced shadows:

- more and cleaner windows and skylights;
- light-coloured, matt-surfaced ceilings, walls and equipment;
- layout which avoids shadow zones;
- groups of lights for groups of machines;
- use of reflected light to avoid glare;
- avoiding isolated pools of bright light;
- better light direction.

There is more you can do. For example, you can often improve the quality of lighting considerably by allowing from 10 to 40 per cent of light to escape upwards. In this case, light will be much better dispersed due to reflection from the ceiling (figure 100). The ceiling should be reasonably low and not obstructed and should be painted white.

The openings in the tops of industrial lighting units (as shown in figure 101) allow ceiling illumination, better lamp ventilation and lower dirt accumulation than closed-top units.

For general lighting, it is often true that the higher the lights, the better the uniformity and dispersion of light (see figure 102).
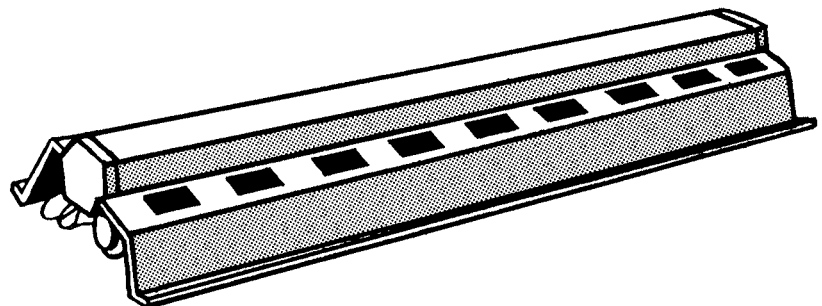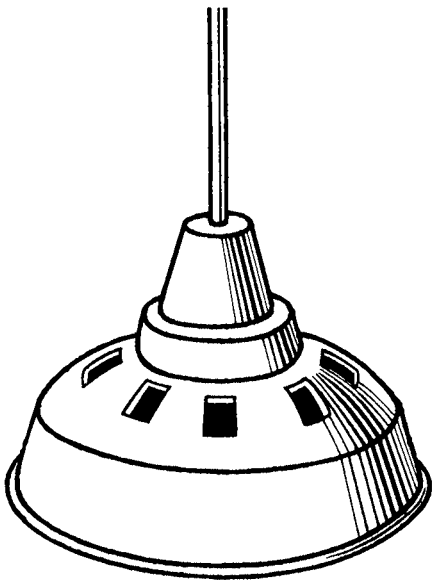
Figure **101**

Lighting units with upward openings.
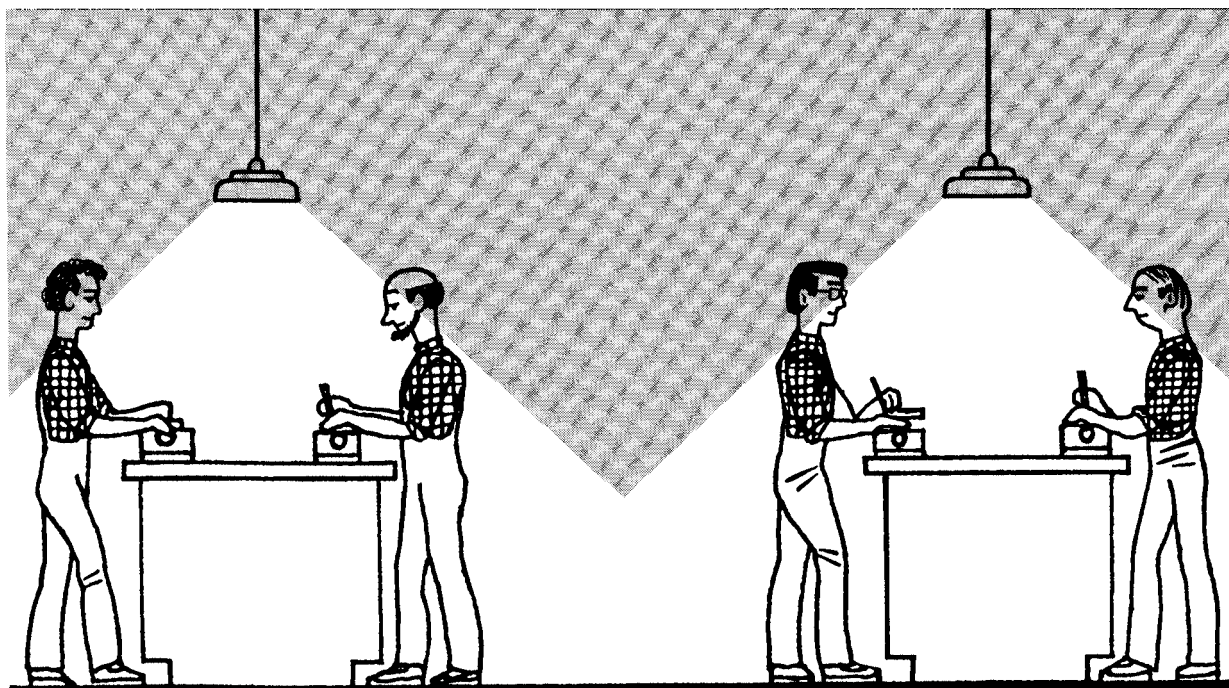
(a) Before
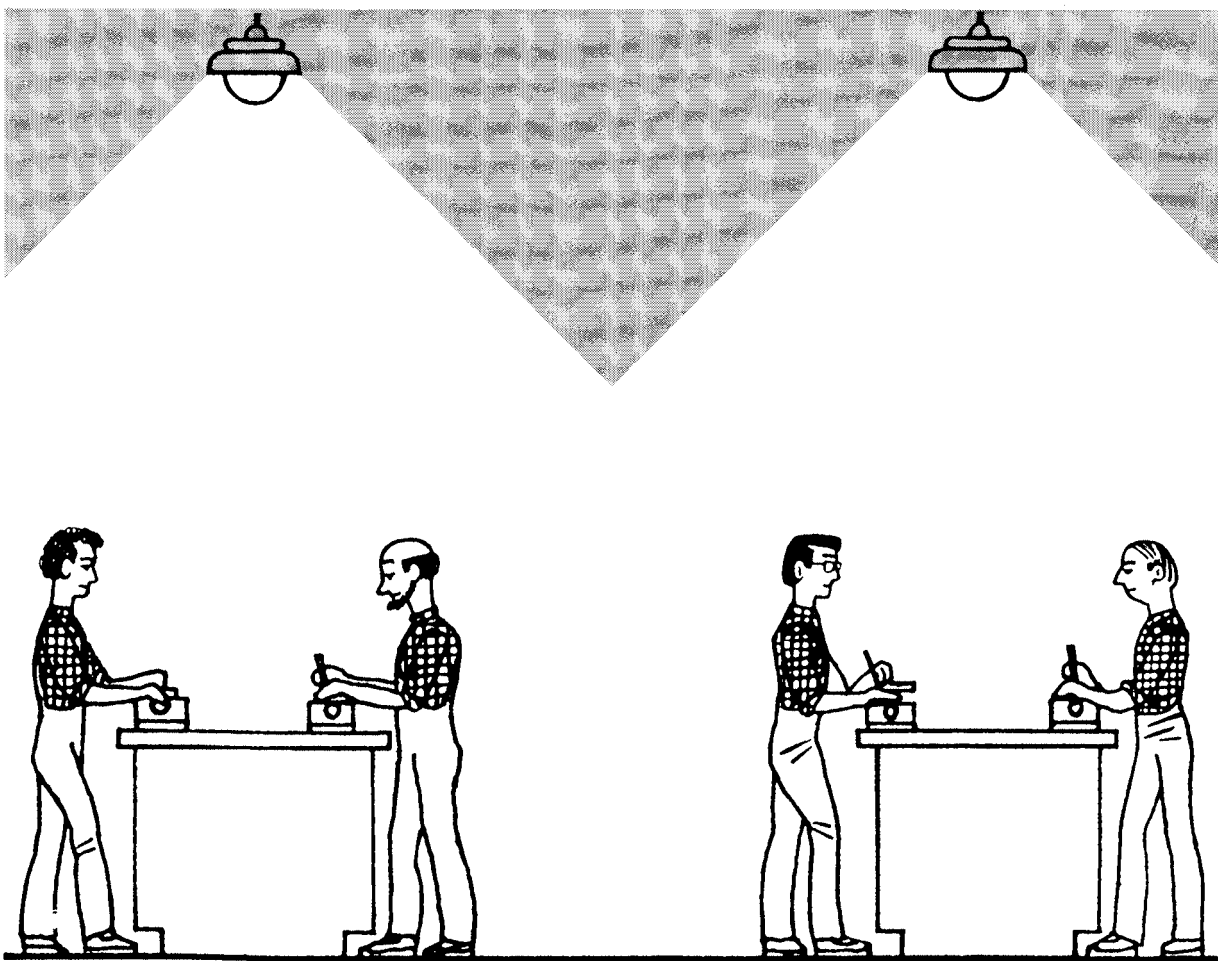
(b) After

Figure **102**

Higher lighting gives better dispersion.

If only artificial light is used, the spacing of the lights is very important. Figure 103 gives guidance on how to attain more even lighting conditions.

As was mentioned at the beginning of this chapter, the specific light requirements at workplaces would differ very much depending on the nature of the task as well as on the sharpness of the worker's eyesight. To compensate for the difference, local lights should be used. Properly arranged local lights not only contribute in quality and productivity but also help to keep lighting expenses low.

Ensure regular maintenance

Even with the best new lighting installation, it is essential to establish a proper maintenance routine. You may be surprised to learn that without maintenance, *in a few months' time the actual level of illumination could be half of the initial level.*

There are a few main causes for loss of illumination.

- Dust or other deposits on lamps. The need for regular cleaning of lamps is often overlooked because dust collects relatively slowly and evenly. Dust which may be absorbing a large proportion of the light is often difficult to detect. The table shows that the type of fitting makes a big difference. If you decide to use a

closed-top reflector or fitting, clean it every month.

	Months			
	3	6	9	12
	% of illumination loss			
Closed-top fitting	18	25	35	40
Open-top fitting	8	12	15	18

- Output from bulbs and fluorescent tubes falls steadily throughout their life. For example, a fluorescent lamp can lose 25 to 30 per cent of its initial output before it burns out. That is why one should consider introducing a system of lamp group replacement at the same pre-determined time. Lamps which are removed need not be scrapped; they may be used in places such as corridors or little-used stores. Some of them can be kept to replace lamps from the next batch which fail early.

- Dirt on windows, skylights, ceilings and walls. A 20 per cent increase in illumination or more can often be gained by regular cleaning of all windows and skylights inside and outside. It is also important to clean ceilings, walls and other interior surfaces.
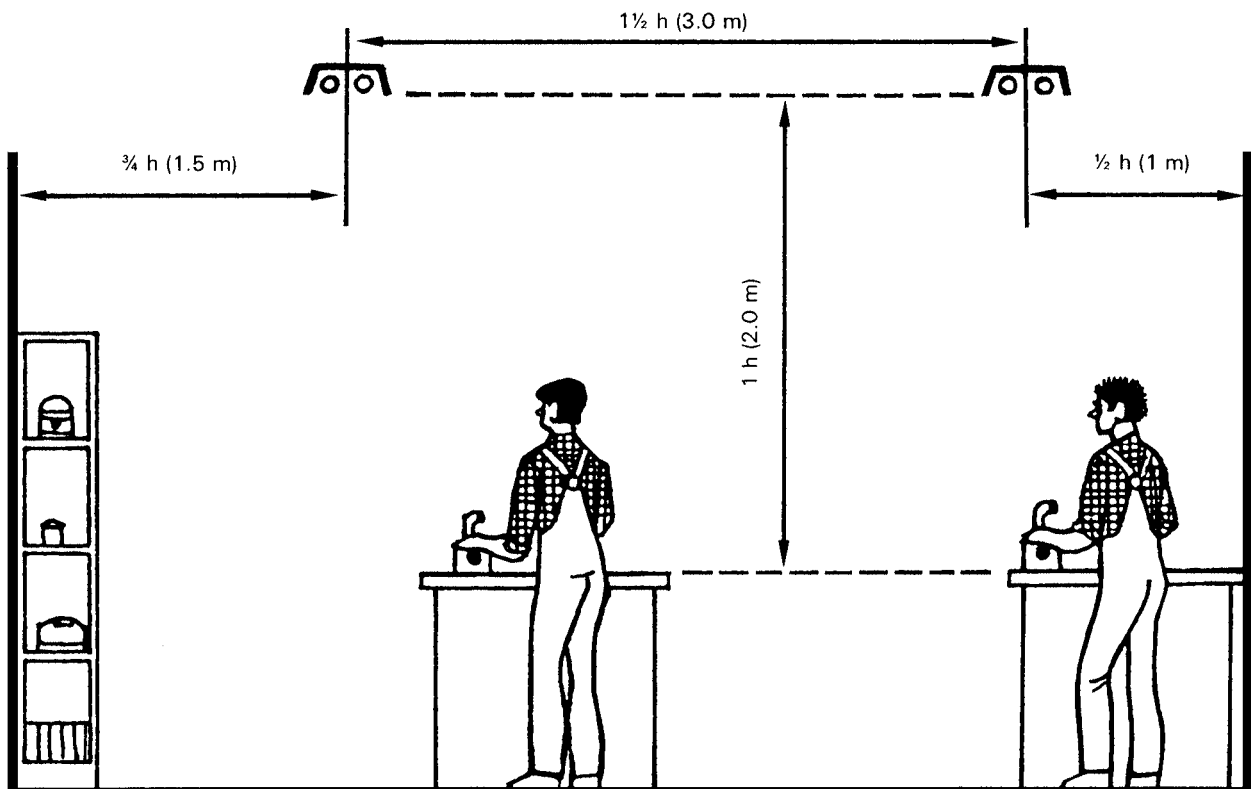
Figure 103

Recommended spacing for industrial type lighting units. The distance from the work-surface to the light fixture is h. When there is a passageway next to the wall, the fixture should be ¾ h from the wall. When work is done close to the walls, the fixture should also be closer.

Summary
Rules for better lighting without an increase in the electricity bill

Make full use of daylight

Avoid glare

Choose an appropriate visual task background

Find the right place for light sources

Avoid shadows

Ensure regular maintenance
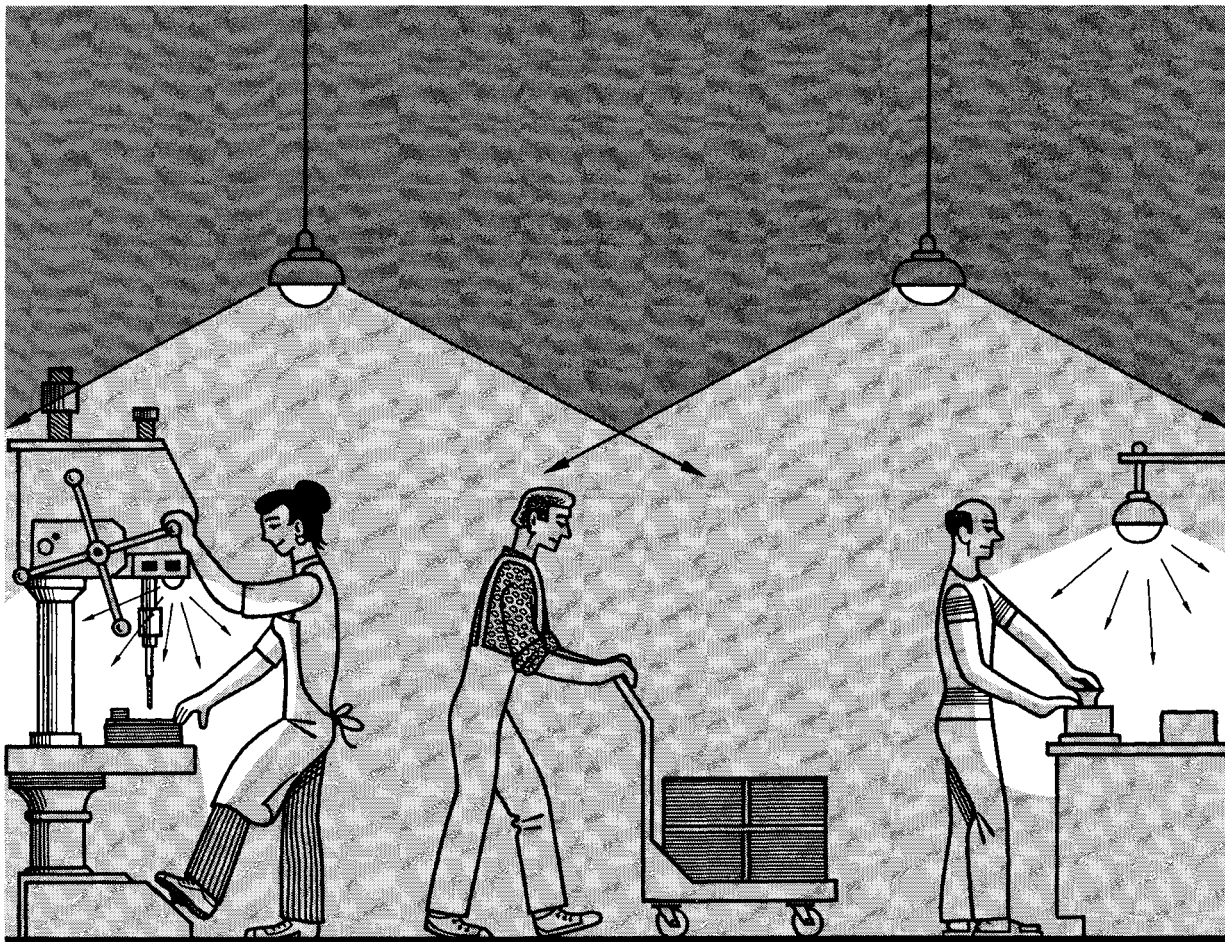
Figure **104**

Combination of general and local lights help to meet specific requirements of different jobs.

8

Work-related welfare facilities

Work-related welfare facilities are often ignored. Who cares about toilets, first-aid kits, lunch rooms or lockers? What do they have to do with the hard realities of production?

One answer is that your workers care. During each working day, workers need to drink water or some other beverage, eat meals and snacks, wash their hands, visit a lavatory and rest and recover from fatigue. This can be difficult or easy, unpleasant or comfortable, a health risk or an aid to hygiene and nutrition. The essential facilities in your factory show whether you care about your workers as much as you care about your machines. Worker dissatisfaction can be costly.

A more positive reason for better facilities is that extra efforts are often appreciated far beyond the time and money invested. Work-related facilities help workers to overcome problems which are important to them. Let your workers express their priorities for improvements and ask them to take responsibility for the work which is required. You may be surprised at the results.

The small enterprise can be a community where workers are loyal, industrial relations are smooth and morale is high. It can also be a place where workers look for the first opportunity to leave and care little about the owner's success. Which kind of enterprise do you want?

Make sure essential facilities serve their purpose

Fatigue and disease are enemies of efficient work. Essential facilities are more than just a legal requirement. They can do much to reduce fatigue and maintain health. It is important that the quality of such basic facilities is high: otherwise they can spread disease instead of preventing it.

Drinking water

Drinking water is essential for all types of work. Especially in a hot environment, each worker can easily lose several litres of water per shift. If not provided with drinking facilities, workers become thirsty and gradually dehydrated. This greatly increases fatigue and lowers productivity.

Water kept close to workers will minimise the time lost in going to get a drink. Place water containers near each group of workers, or provide taps or fountains with clean water in a central place. However, drinking water should not be placed in washrooms or toilets, near dangerous machines or other hazards or in places where it can be contaminated by dust, chemicals or other substances.

Whenever there is doubt about contamination, water must be thoroughly boiled or properly filtered or treated. Before starting to use a new water source for drinking purposes, it is very advisable to have it tested. Piped water can be used only when a hygienic water supply is guaranteed. Precautions are needed to make a clear distinction between potable and non-potable water taps. A "Safe Drinking Water" sign should be put up at each applicable tap.

Drinking water vessels should be made from materials that can be easily cleaned. Even if the vessels are filled with fresh water, the water inside, if kept for days, can become unhygienic. It should therefore be changed frequently.

It is also important to make sure that the drinking water is cool. If you cannot afford a water-cooler, place the water in the coolest place in the factory. It should not be left in the sun or in a hot place.

There are several types of arrangement for drinking water. Make sure that yours is appropriate:

- *Water bags or bottles,* for outdoor or isolated workers, are used when no other possibilities are available. They should be hung in a shaded place free from dust and with air circulation around them. They should be cleaned and refilled at least once a day.

- *Drinking water containers* are for production sites or temporary worksites. They should be attended by a designated person. Containers should be of impermeable materials. A cooling device would be an advantage. (Unglazed pottery can be used, due to its unique cooling effect, in dust-free places.) Containers should be provided with suitable covers, and kept in a cool place protected from the sun. The water must be changed frequently.
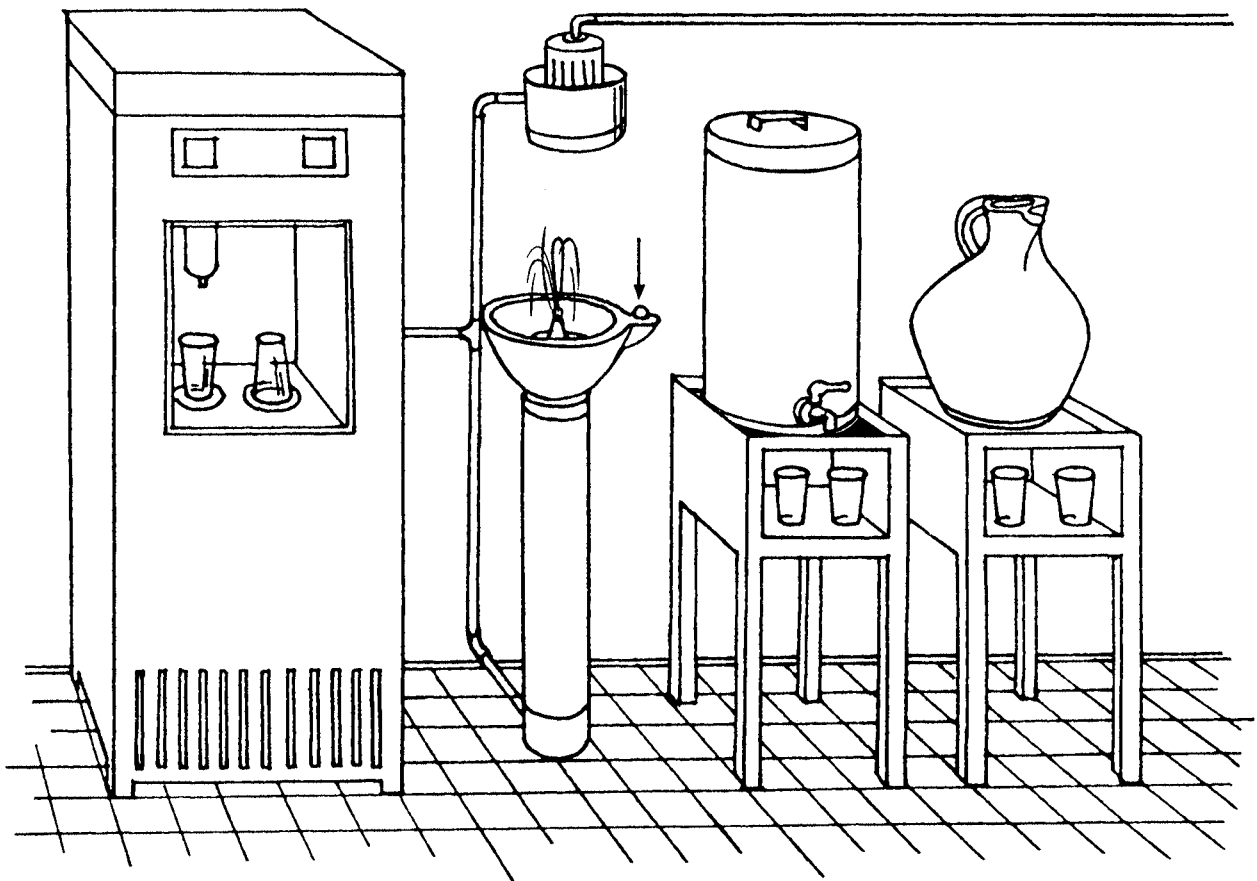
Figure 105

Ways of providing cool, clean water.

- *Drinking fountains* for production areas are very advantageous from the hygiene point of view. They can be fitted with a jet or bubbler outlet and/or a goose-neck or other outlet for filling drinking cups. The fountain should be free from sharp angles and designed to prevent unnecessary splashing. Water outlets should be above the rim or overflow level so that they will not be contaminated by waste water. The water outlet should be shielded in a manner that prevents the lips of a drinker from being placed against it.

To avoid the possible spread of infection it is preferable to use disposable cups or to provide separate cups for each worker and to arrange for regular washing. When containers are used, it is important to clean them regularly. Cleaning and any necessary maintenance should be assigned to a specific person.

Sanitary facilities

There are several reasons why an opportunity to wash is important:

- where chemicals or other dangerous substances such as heavy metals are used, washing is needed to prevent chemicals from

being absorbed through the skin or being eaten during snacks or meals. It is also important to prevent the worker from carrying the substances home;

- dirt and grime can also be ingested and cause sickness or disease, and they are in any case unpleasant and demotivating;

- washing is required for basic hygiene after using the toilet.

The need for toilets is obvious, even if it tends to be neglected.

Sanitary facilities are required by law. Your choice is either to make them appropriate or to let them become a source of complaints, resentment and difficulties. Neglect is the main source of problems with sanitary facilities, and neglect is not the kind of example you want to give.

Sanitary facilities which are sufficient in number and conveniently located help to avoid long walks, waiting and frustration. The law in your country must be followed, but the following are practical minima:

- one toilet for up to five men and two toilets for six to 40 men;

- one separate toilet for up to five women and two toilets for six to 30 women;

- one wash-basin for every 15 workers.

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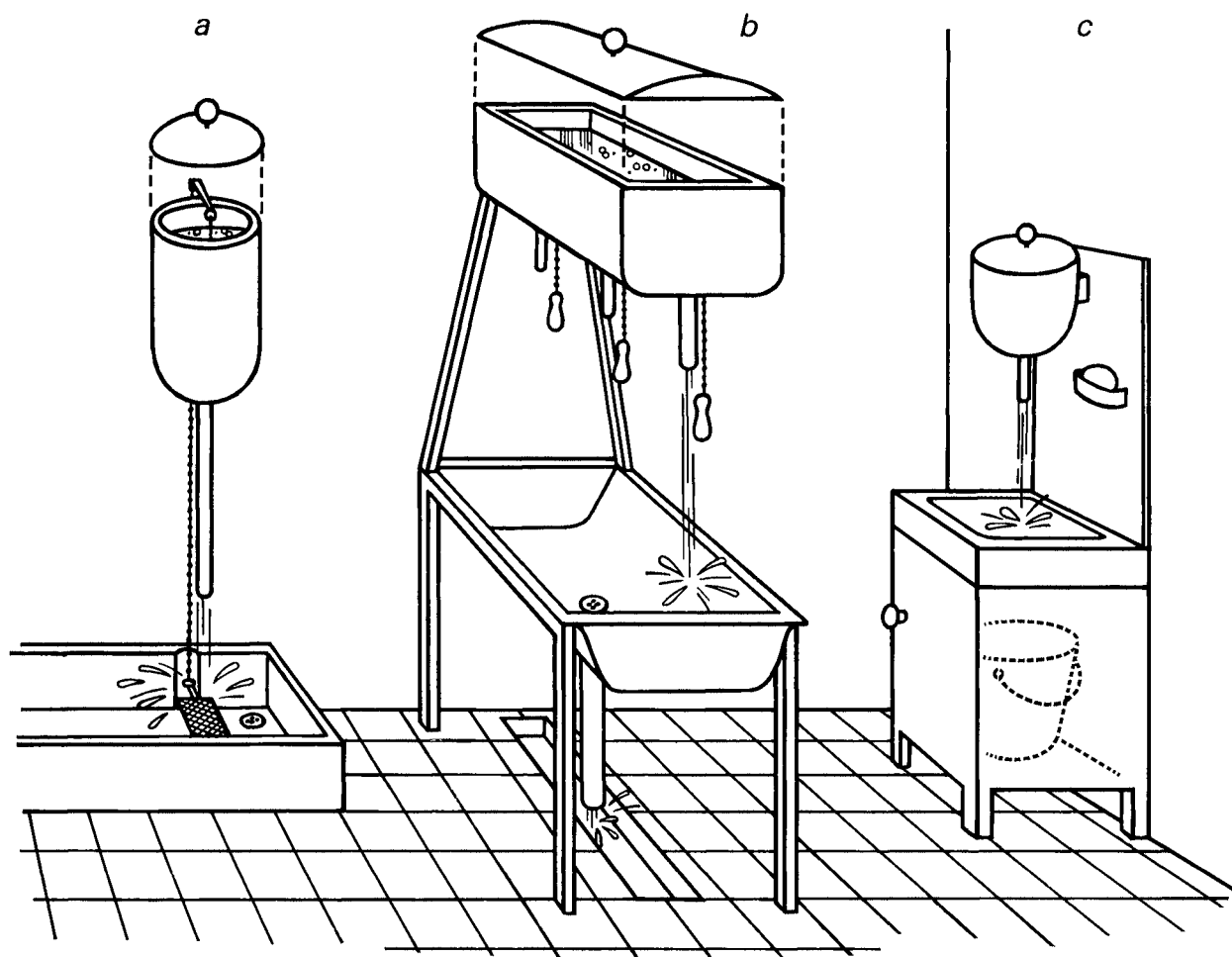
Figure **106**

Low-cost washing facilities used in places where there is no piped-in water supply.
(a) Foot washing device.
(b) and *(c)* Handwashing stands for groups and individuals.
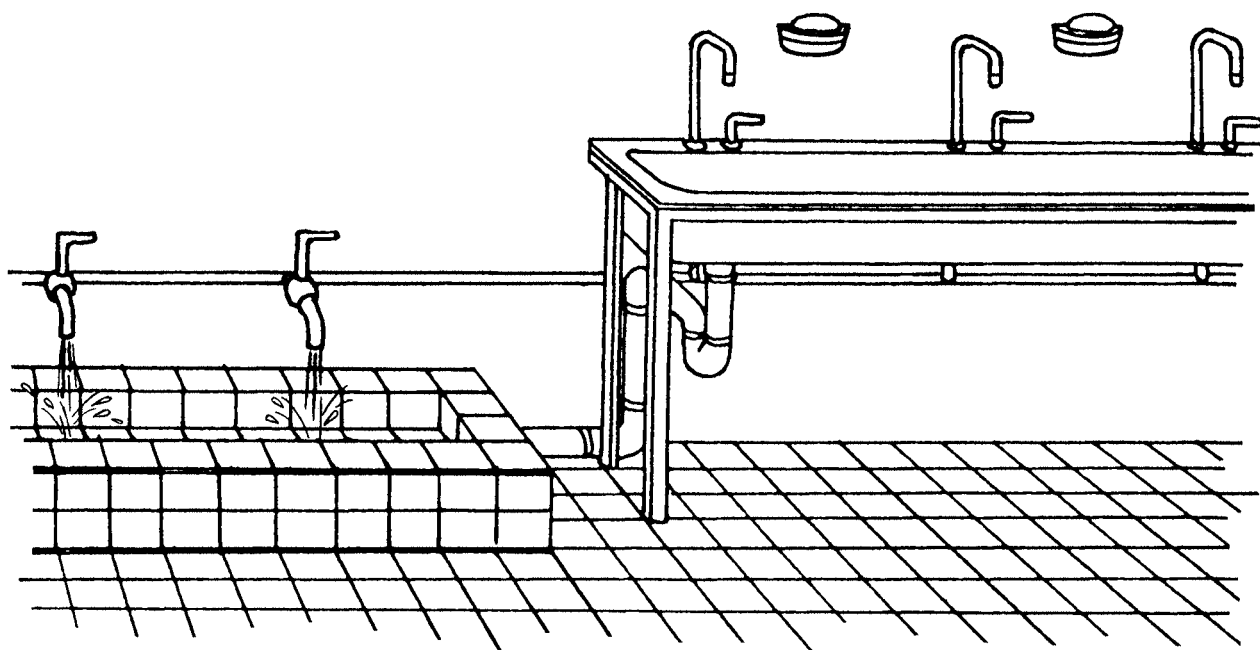
Figure **107**

Simple washing facilities.
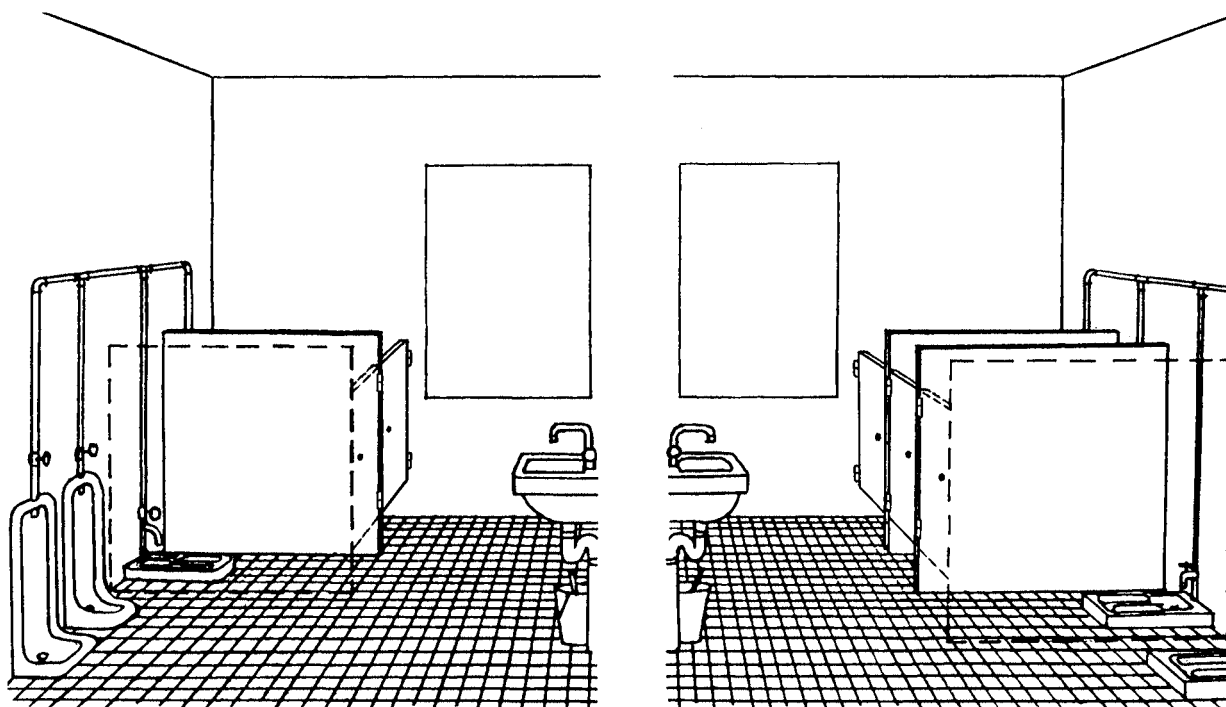
Figure **108**
Toilets with wash-basins for men and women.

To ensure quick and proper washing, soap must be provided. This can be ordinary cake soap, or a liquid or powder soap in a special dispenser. A degreasing cream such as waterless or solvent-free hand-cleanser may be required in certain types of factories.

Paper towels, roller towels (or individual towels for each worker) should also be provided. An alternative to towels is an electric hand dryer fixed to the wall. Mirrors and shelves at each washing point and wastebins will assist workers with their personal hygiene as well as help to keep the place tidy and clean.

The design of sanitary facilities makes a big difference in the cost and effort required for cleaning. You should design for easy maintenance just as you would for a machine. Avoid wooden floors and difficult-to-reach corners. Provide proper drainage. It is best to use tiles for walls and floors, or at least to make sure that surfaces are smooth and easy to clean. If you do not use tiles, choose the paint carefully. Porcelain is best for washbasins, toilets and urinals.

Be ready for emergencies

Accidents happen. Emergencies can include cuts and bruises, eye injuries, burns, poisoning, and electric shocks. Even in enterprises which seem safe, many types of injury (such as falls) can occur. Every enterprise should therefore have a well-stocked first-aid box and at least one person present at all times of operation who knows what to do in emergencies.

First-aid boxes should be clearly marked and located so that they are readily accessible in an emergency. They should not be more than 100 m from any worksite. Ideally, such kits should be near a wash-basin and in good lighting conditions. Their supplies need to be regularly checked and replenished. The contents of a first-aid box are often regulated by law, with variations according to the size and likely industrial hazards of the enterprise. A typical *basic kit* may include the following items in a dustproof and waterproof box:

- sterile *bandages, pressure bandages, dressings* (gauze pads) and *slings*. These should be individually wrapped and placed in a dustproof box or bag. You will need small, medium and large sizes. Be sure to have sufficient quantities, especially of the commonly used sizes. Small cuts and burns should not go untreated. You will also need medical *adhesive tape* (strip plaster) for fixing bandages and dressings;
- *cotton wool* for cleaning wounds;
- *scissors, tweezers* (for splinters) and *safety pins*;
- an *eye bath* and *eye wash bottle*;
- ready-to-use *antiseptic solution* and *cream*;
- simple over-the-counter *medicines* such as aspirin and antacids; and
- a *booklet* or leaflet giving advice on first-aid treatment.

Figure **109**

A basic first-aid box and instructions.

A portable first-aid kit may be useful when work is done outside the factory. It should contain cotton wool, adhesive dressing strips, sterile wound dressings, gauze bandages, triangular bandages, antiseptic cream, safety pins and small scissors.

First aid requires some training, but this is not difficult to arrange in most places. The names and location (including telephone number) of first-aiders should be put on a noticeboard. Workers in remote or isolated areas should be given additional training in first aid to take account of the probable long delays in obtaining medical aid in the event of an emergency.

The procedure for obtaining medical assistance in an emergency should be known by all workers. Small establishments without their own facilities should keep contact with a nearby clinic or hospital so that the time between the occurrence of an accident and medical assistance is very short, preferably much less than 30 minutes. Transport to the clinic or hospital should also be pre-arranged. An outside ambulance may be called in, if necessary. It is always desirable to have a stretcher.

Make sure that rest means recovery

Rest breaks

Workers usually start the day alert and productive, but their activity level decreases as the day goes on. Fatigue grows gradually before it begins to have strong effects. If the worker rests before he or she shows signs of being really tired, recovery is much faster. Short breaks taken frequently are much better than infrequent but long breaks. For most types of work, *workers will produce much more with breaks than they could working continuously.*

Workers may continue working until they feel very tired, so you should plan breaks. At least one ten-minute break in the morning and one in the afternoon, in addition to a longer break for lunch, is absolutely necessary. A five-minute break every hour is an excellent idea.

Rest areas

A good rest area also helps to reduce fatigue. Workers are not just idle during rest breaks, but recovering from fatigue and getting ready for continued productive work. Getting away from a noisy, polluted or isolated work-station helps them to relax and recover from fatigue. Rest areas should therefore be away from the work-station and free of disturbances. A simple canopy outside the factory may provide a shady rest area, especially if there are plants and breezes. Avoid bright sunlight: the eyes need to rest as well as the body. A table and chairs are needed and a place to lie down can also be a good idea.
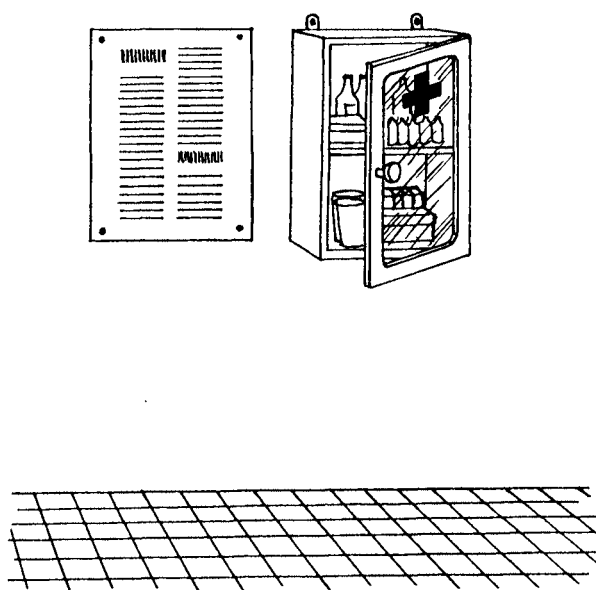
Figure **110**

A rest area.

Smaller enterprises have a great deal of difficulty in competing for high-quality labour. A common complaint is that as soon as workers are fully trained, they leave for the higher pay and better benefits of larger enterprises. You may find it difficult to compete in terms of wages, but you can accomplish a great deal at low cost if you pay attention to the needs of your workers. The small enterprise has the possibility of treating workers as part of a "family" and thus to gain their loyalty and support.

Workers' needs vary. You undoubtedly know whether your workers have problems with meals, transport or other work-related needs. Perhaps you have some experience with the way that work clothes, lockers or even an opportunity for sports after work are appreciated by workers.

Work clothes

If the working conditions require uniforms, special work clothes (including suitable footwear if necessary) or protective clothing, they should be provided by the employer. Neat and well-designed work uniforms decorated with the factory emblem can contribute to company loyalty and work discipline. Specially designed work clothes quite often help reduce accidents. Many serious accidents have occurred when loose garments became engaged in rotating equipment.

Lockers and changing rooms

Facilities for secure storage of clothes and other personal belongings, such as cloakrooms, coat-hooks, lockable lockers and changing rooms, greatly assist workers with their personal hygiene, appearance and tidiness, and avoid anxiety about the theft of personal possessions.

Storage facilities should be located where they will not impede work or obstruct light or ventilation. They should also be arranged in such a way that clothes and personal belongings can be kept safe from damage or theft. This can be achieved by placing storage facilities within cloakrooms or changing rooms or moving them as far as possible from the work-stations.

Changing rooms are particularly important where the duties of the workers require them to change from street clothes into uniforms or protective clothing, or where wet, dirty or noxious conditions require workers to change clothes. If possible,
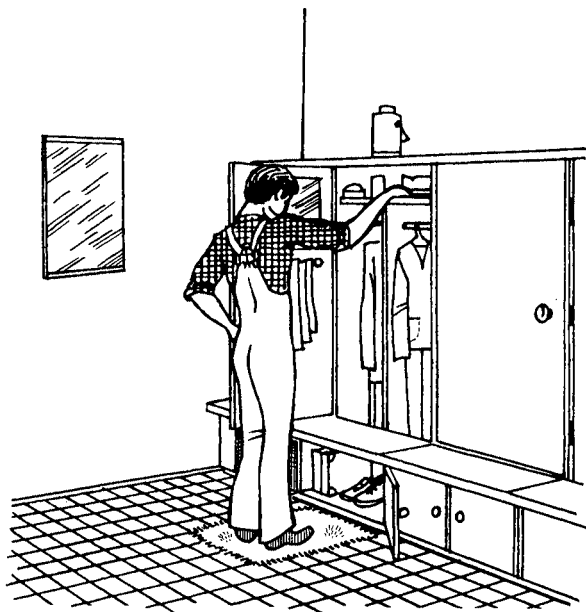
Figure 111

Personal workplace lockers.

separate changing rooms giving privacy for each sex should be provided. If there are only a few persons of each sex employed and separate changing rooms would be too costly, some privacy for each sex, such as screened-off areas, should be arranged.

Washing facilities such as washbasins or showers should either be placed within changing rooms or close by. Combined dining and changing rooms are not recommended on hygienic grounds.

Adequate seats, mirrors and rubbish bins in the changing room or close to the lockers will assist workers in giving attention to personal appearance and tidiness.
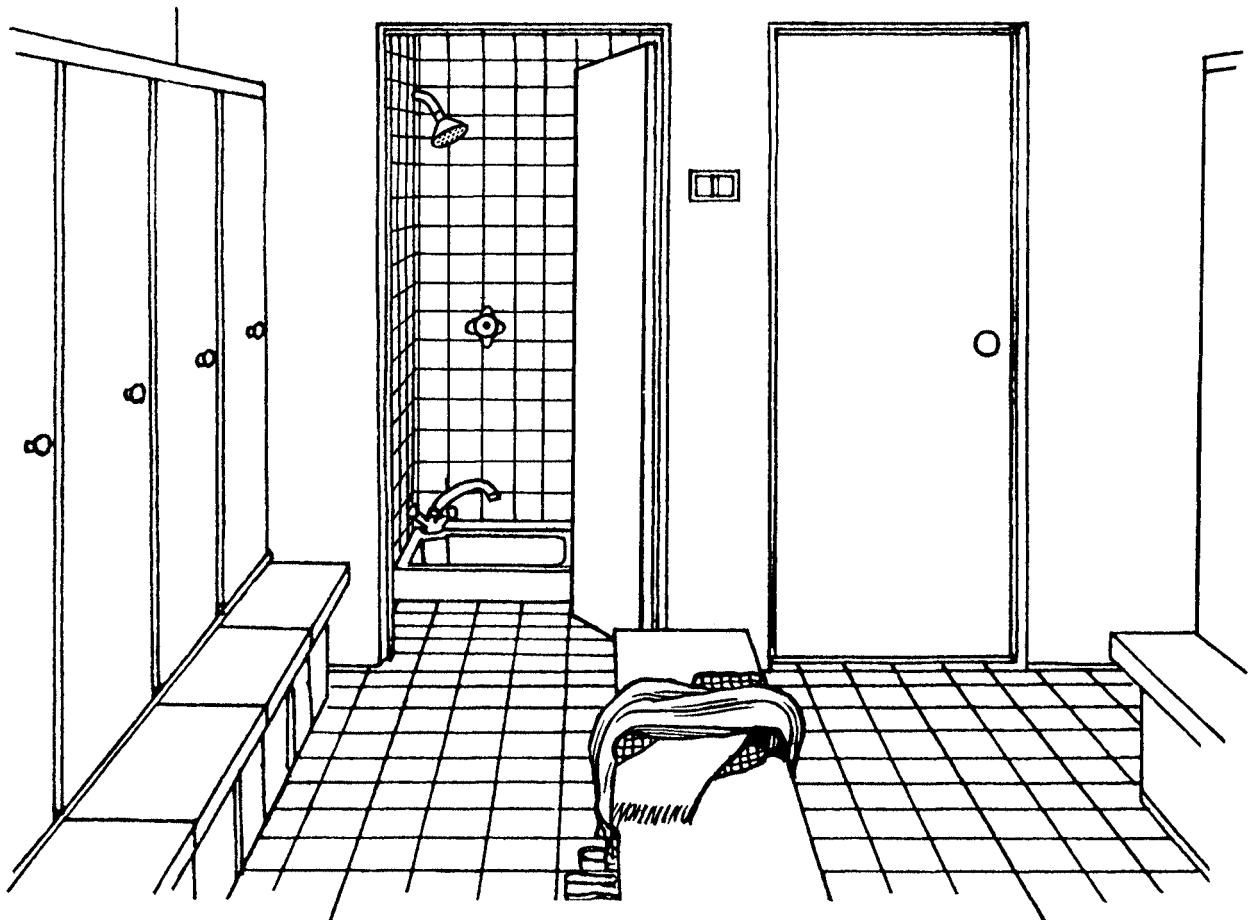
Figure 112

A changing room with lockers and showers.
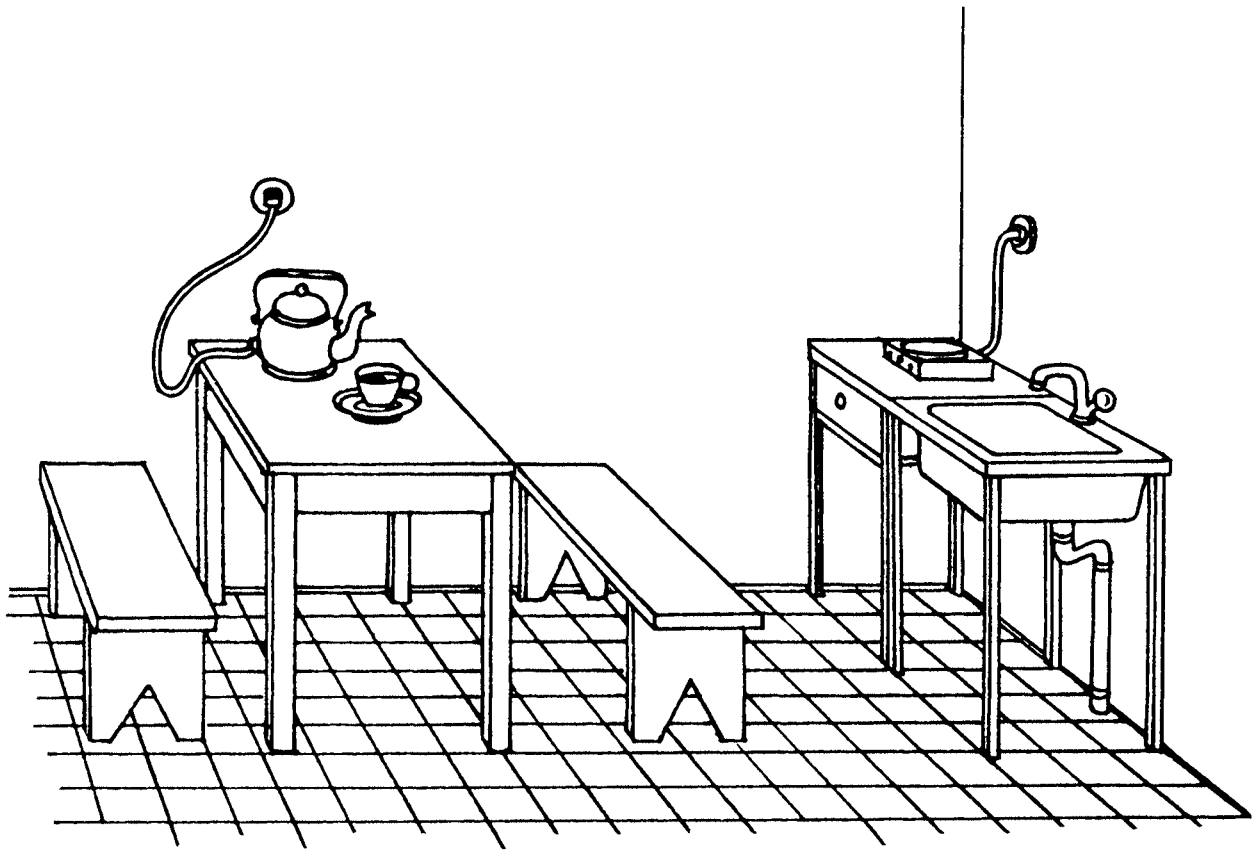
Figure **113**

An eating place with simple cooking arrangements.
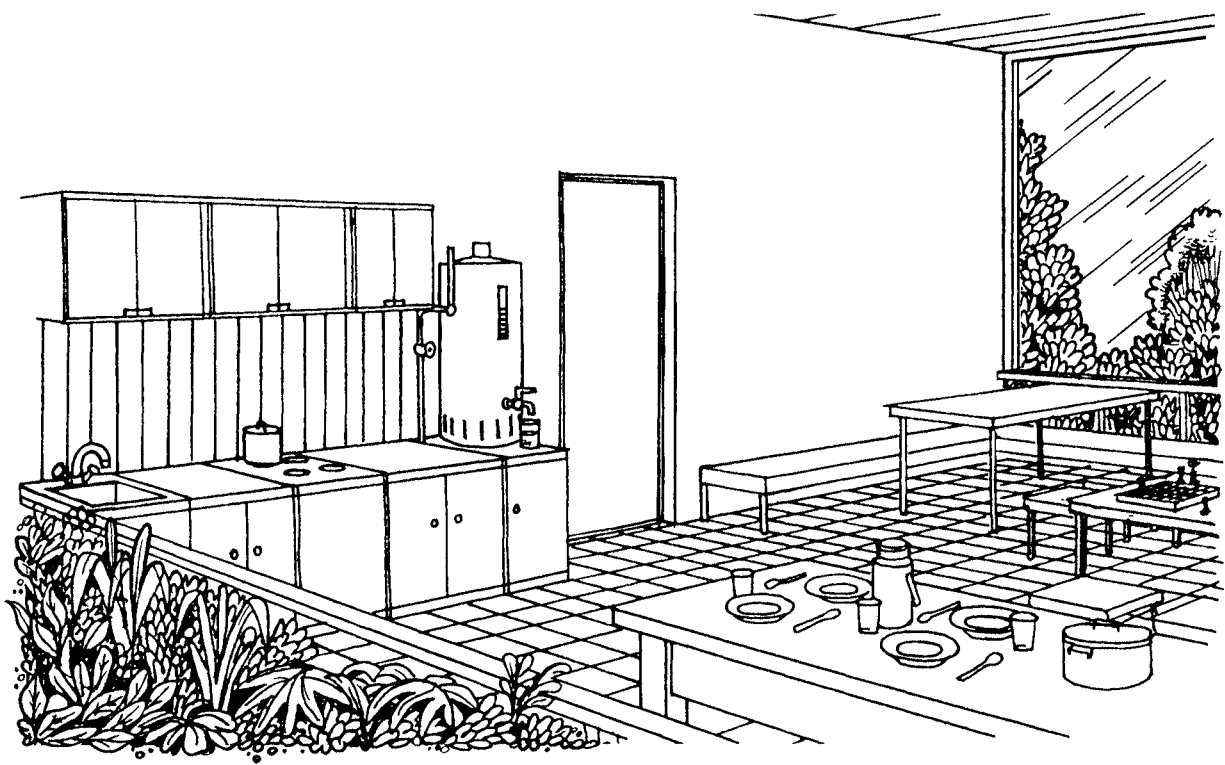
Figure **114**

An eating corner in a rest area.
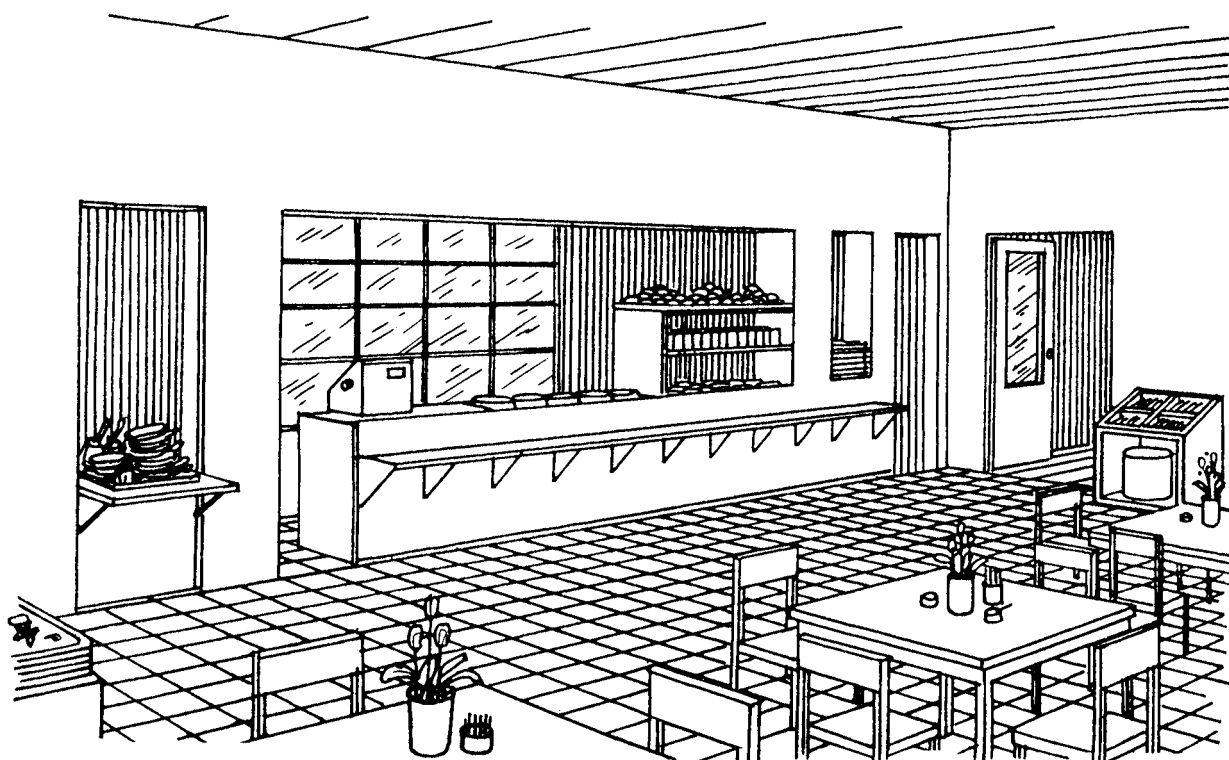
Figure **115**
A canteen.

Eating areas

Some smaller enterprises may not have the resources to start a canteen immediately. The first step for them is to provide an eating place or room in which the workers can eat food brought from home or bought from vendors. This lunchroom could include a small area where workers can prepare drinks or heat their food. It should be situated away from the work-stations to avoid any contact with dirt, dust or dangerous substances used during the work process and should be as comfortable as possible to enable workers to relax during meal-breaks.

It is advisable to set up this eating room or area in a way that it can be upgraded and later turned into a small canteen as the enterprise develops.

Canteens

Establishing canteen services is the best way to guarantee that workers eat sufficient nutritious food during a reasonably short break from work. Sending workers home for meals may not be feasible due to the distances involved, the high cost of transport,

the lack of commuting facilities or simply because the meal break is not long enough. Eating facilities near the workplace may also be unsuitable due to the high cost of meals, the poor hygienic conditions of some food-stalls or the poor nutritional value of the food.

Different facilities may be provided, some of which can be quite inexpensive:

- a canteen for cooked or pre-cooked meals;
- a buffet to serve packed meals, snacks and beverages;
- facilities (including space, shelter, water and rubbish bins) for vendors to sell hot food;
- a group restaurant jointly set up by a group of employers; and
- arrangements with a restaurant or canteen near the enterprise.

When a meal is served, it is important to pay attention to hygienic conditions and the nutritional value. It may be a good idea to get advice on both from an expert.

The space needed for setting up a canteen is often less than you might expect. An eating place or room for 50 workers requires only 25 square metres, if workers share the space by eating in different sittings.

Health services

Although most countries try to provide access to health care for every citizen, services are often inadequate. You can help by providing a workplace medical facility such as a small clinic which can give treatment for any occupational injuries and in addition provide general health care. This can help avoid delays, lateness and absence which result from using local services. In case the enterprise is too small for a clinic, several enterprises may be able to establish one together. If not, you can still:

- provide treatment at a local hospital or clinic if a worker gets sick or has an accident;

- arrange regular visits by a doctor or nurse;

- assist in establishing a community health service near the workplace;

- grant loans or salary advances to workers to help meet medical costs; and

- provide health insurance for all workers or encourage workers to join private insurance schemes by covering part of the premiums.
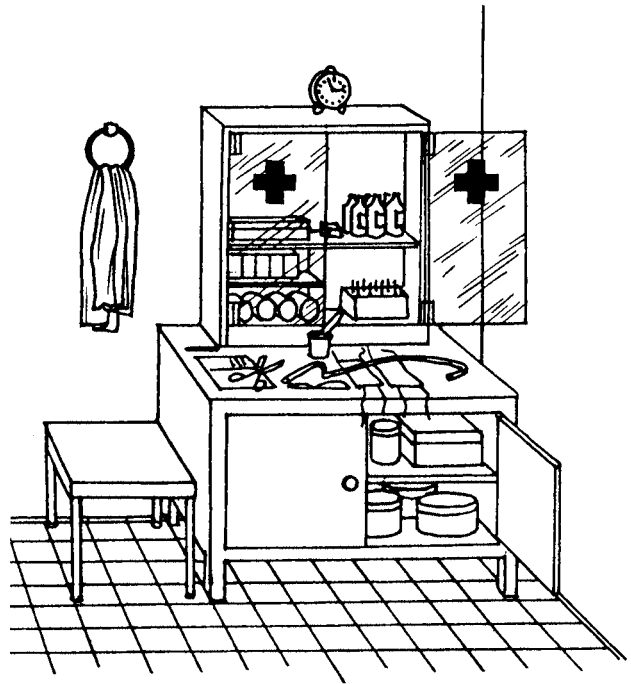
Figure **116**

A medical cabinet.
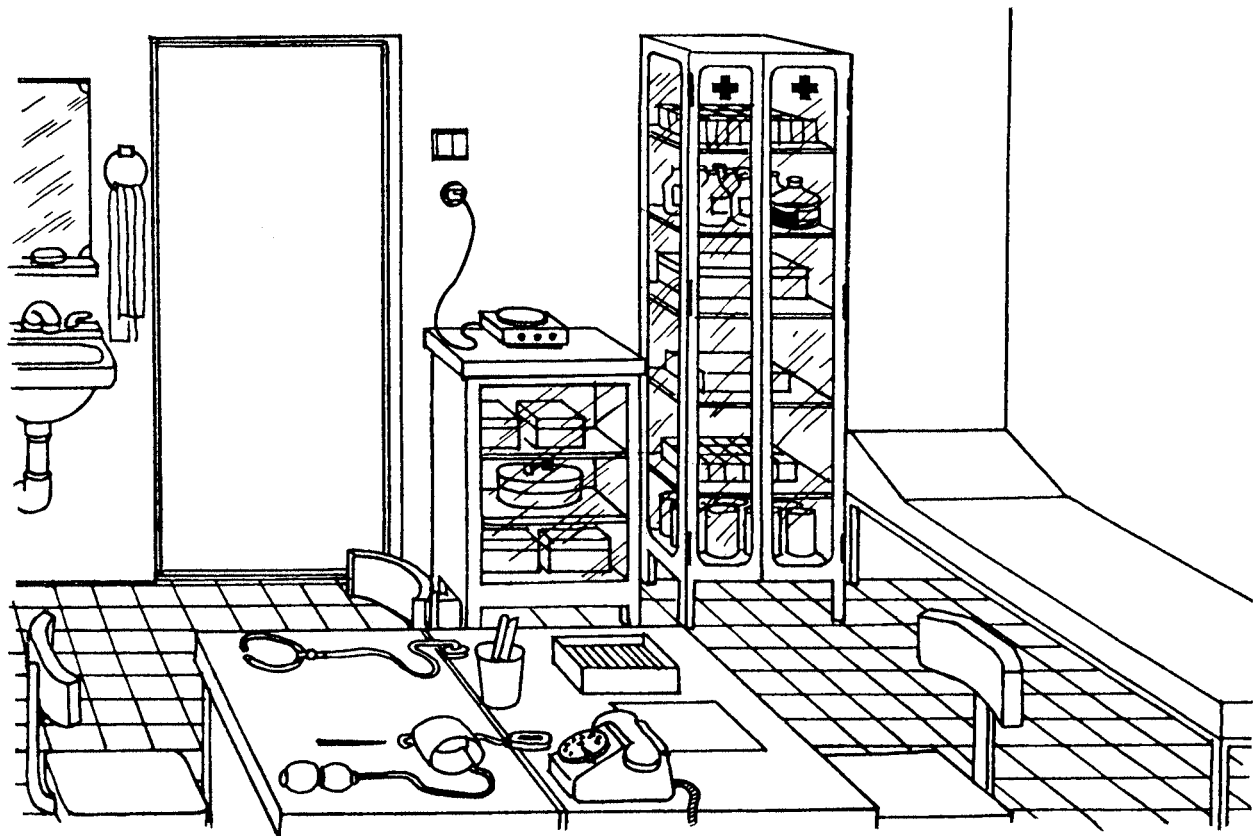
Figure **117**

A factory clinic served by a visiting doctor.

Transport facilities

Getting to and from the workplace may be difficult, lengthy and tiring. This, in turn, can cause fatigue, anxiety and financial hardship for the workers, and result in undue lateness, increased worker absenteeism, high labour turnover or declining efficiency for the enterprise.

Small-scale enterprises sometimes pay a transport allowance. If they are unable to do this, assistance may still be provided by adjusting working times to public transport timetables or securing adjustments in the public transport services from local authorities. In some instances informing workers about public transport services, times, costs and monthly or seasonal ticket offers can bring about some improvements.

Costs may also be reduced by establishing a joint transport system with other small enterprises or by joining transport systems of bigger companies. Other possibilities are to help organise shared private transport among the workers themselves or to encourage private transport operators to make reasonable arrangements.

For workers who want to purchase their own means of transport such as motorcyles or bicyles, it may be possible for you to secure cheap bank loans without any cost by guaranteeing suitable repayment schemes.

Recreational facilities

Many workers enjoy spending their time on sports or other recreational activities during their lunch break or after work. Besides being fun, such activities are also likely to increase the physical and mental well-being of the workers.

One important impact of recreational facilities is improved social relations within the enterprise. If supervisors or managers participate in recreational activities, this may greatly help in terms of communication and mutual understanding. The improved morale may also lead to a reduction in absenteeism and staff turnover and facilitate recruitment.

Recreational facilities are often very inexpensive. Providing simple sports equipment such as a ball, goals, nets and so on, or some board games and magazines may be all that is necessary.
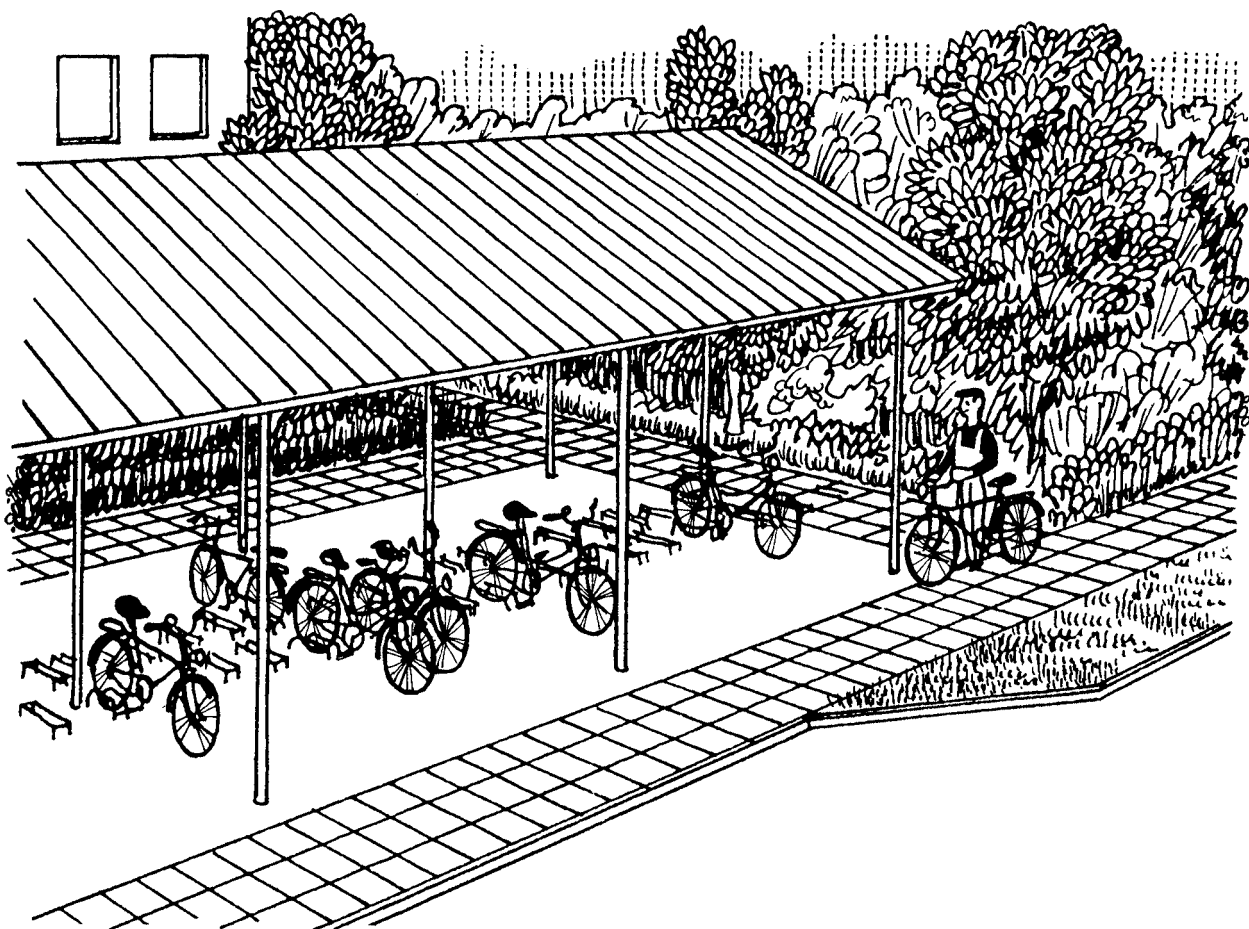
Figure 118

A storage area for bicycles.

Premises

Few owners of small businesses are able to design their own factory building or choose one which meets all of their needs. You may have been thinking about repairs and improvements but hesitated because of the cost and the lack of obvious benefits.

This chapter will show you how to make improvements in your factory building which are low in cost and which have definite benefits. Temperature control, better ventilation, properly designed floors and layout and attention to fire and electrical safety can increase your workers' efficiency and avoid large losses. They can also make your factory more attractive to customers and improve your image.

Protect your factory from outside heat and cold

One of the most important conditions for productive work is the correct temperature inside the work premises. The optimum will vary according to local climatic conditions, the season and the type and intensity of work. For sedentary work of average intensity the highest productivity is achieved at 20-25° C, while for heavy manual work the peak will be about 5° C lower. Deviations from the optimum temperature result in lower productivity. However, maintaining the optimum temperature inside the work premises can be very costly unless proper measures are taken to reduce the penetration of heat or cold from outside.

There are two basic ways heat or cold gets inside the shop: direct (through openings such as windows, doors, gaps, skylights) and indirect (due to conduction throughout the roof and walls). In addition, sunlight coming through windows and skylights falls on objects inside the shop and heats them up.

Here are some ways to tackle these problems.
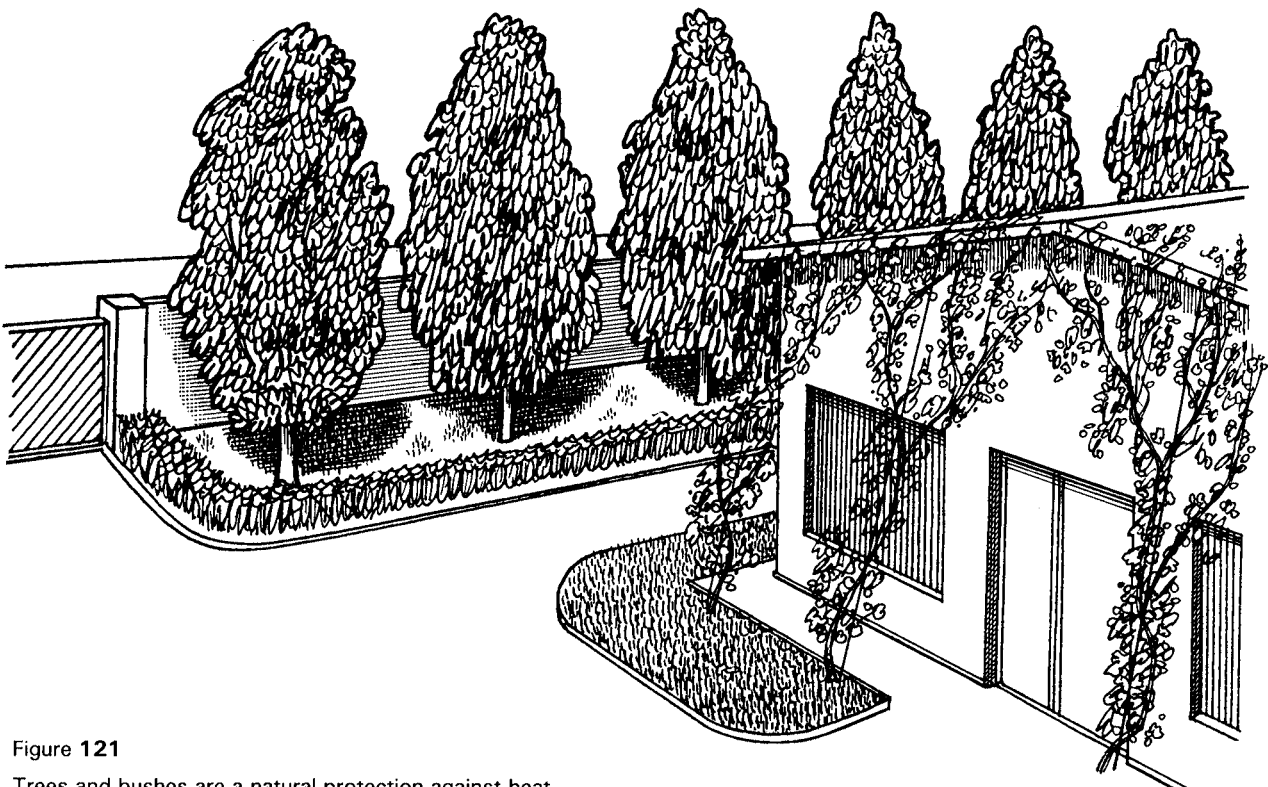
Figure **121**

Trees and bushes are a natural protection against heat.
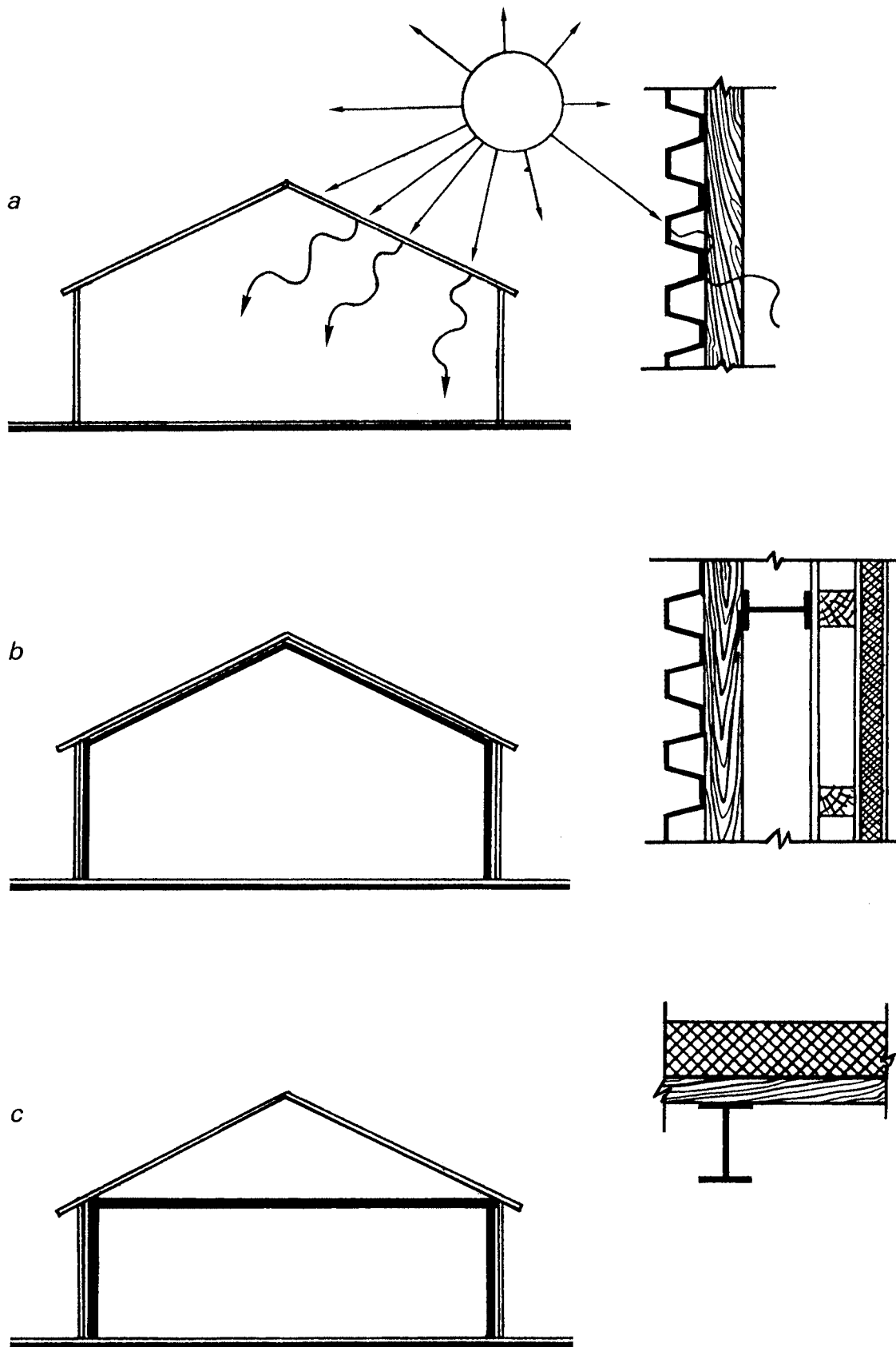
Figure **122**

(a) A factory building with corrugated metal walls and roof with a very low level of thermal insulation.

(b) Heat and cold penetration can be considerably reduced by insulating walls and roof panels and providing air gaps between wall and backing.

(c) Construction of a ceiling is another effective way of reducing heat and cold penetration from above.

Let nature help you

Let's start with your factory yard. In hot climates, open, sandy and rocky areas contribute to the problems of heat and dust. Trees, bushes, grass and flowers help to reduce the harmful effects of the sun's radiation and hot winds. They also form a natural "filter", preventing dust from penetrating inside the factory as well as creating a pleasant environment. However, in order to allow fresh breezes to reach the building more easily, keep all bushes shorter than 1.6 m (five feet) and trim trees surrounding the factory building at least 3 m (ten feet) from the ground.

Improve the heat reflection of the walls and roof

The texture and colour of the outside walls and roof are chiefly responsible for the reflection or absorption of heat. Untreated concrete or mud walls transmit much heat into the interior. To reduce this effect, the walls should be smooth in texture and light in colour.

Improve heat insulation

A thin metal wall by itself does not protect against penetration of heat or cold (figure 122, (a)), but a layer of air between two walls is a good insulator. This is why corrugated metal walls, roofs, doors and shutters should be backed with some solid insulating material, such as plywood. Backing them with bricks or other thick porous materials is an even more effective solution. The air pockets between the external and the internal walls will contribute much to thermal insulation of the building (figure 122, (b)).

If your factory has a gable roof, it is often worth investing in the construction of a ceiling (figure 122, (c)). If this is done properly, the investment will mean a considerable improvement in thermal conditions in the workshop. Don't forget to insulate the ceiling with a layer of any heat-insulating material you have at hand. Even earth will do. Openings should be provided to allow air to circulate freely between the roof and the ceiling during hot weather.

Use shades to protect against heat from the sun

Properly designed shades work in two ways: they protect the walls from solar radiation and also absorb outside heat without transmitting it to the interior. Shades can do a lot to keep the temperature down in your factory. Moreover, they help to improve lighting conditions by reducing glare and dispersing the light more evenly.

Good evergreen trees on the sides of the building are a natural and efficient means of providing shade.

Another practical and low-cost solution is to attach light-coloured vertical screens to the outside of the walls (figure 123). They can be permanently fixed (a) or adjustable (b).

In tropical countries, vertical screens can be used effectively only in combination with horizontal shades. The horizontal shades block out the sunlight when the sun is high in the sky. There are many types of horizontal shade and your choice will depend on the building design, materials at hand and amount of effort you are prepared to make. An effective way to combine the benefits of both horizontal and vertical shades is to use louvered screens. Another way of doing this is to use permanent comb-type shades (figure 126), which can be home-made and fixed on the outside walls which are most exposed to the sun.

To improve your protection against solar heat further, you can consider the use of sun-reflecting or even coloured glass. The simplest solution is to paint the upper part of the window glass with a water solution of blue dye or laundry blueing. Try it – it works.

Let natural air-flow improve ventilation

If there is not sufficient exhaust or fresh air, the air in the production area quickly becomes contaminated by vapours, dusts, fumes and gases. In the average workshop, the air needs to be changed between eight and 12 times per hour! There should be at least 10 m³ of air per worker. The smaller the room, the higher the air-flow should be. All working premises have some natural ventilation, but especially in hot countries this fresh air supply is seldom sufficient.

Ventilation should not be confused with air circulation inside the workshop: the first replaces contaminated air by fresh air, whereas the second is intended only to improve thermal comfort by moving the air without renewing it (figure 127).

Below we give some ideas for improving ventilation in production shops. However, the specific design of your working premises and local climatic conditions can reduce the effectiveness of these suggestions. Use them as a general guide and if possible consult a local architect or specialist in ventilation.
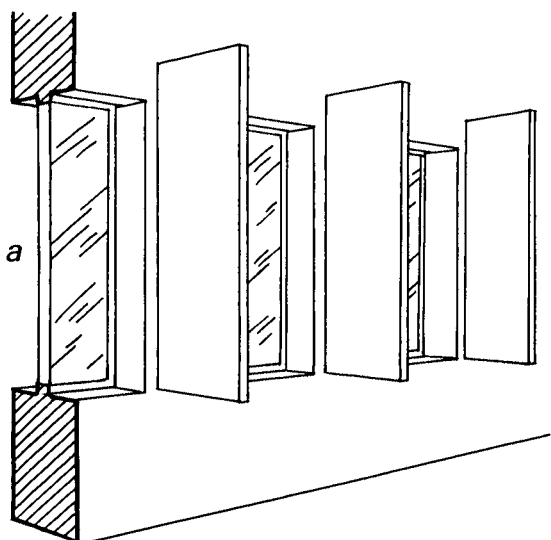
Figure **123**

External vertical screens against solar radiation. *(a)* Permanently fixed. *(b)* Adjustable.
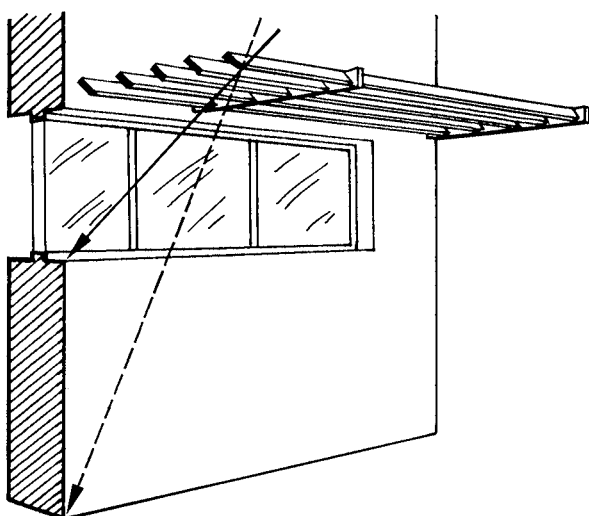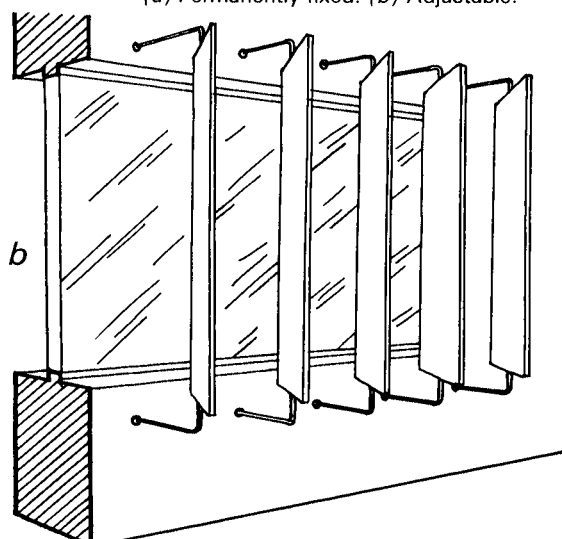
Figure **124**

A canopy made of a row of planks. Provides good protection against heat penetration and better lighting conditions than a solid canopy.
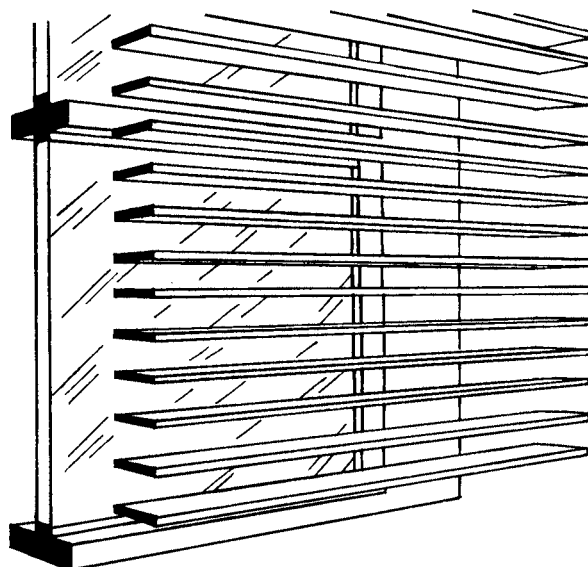
Figure **125**

External louvers made of wooden planks give all-day protection against solar radiation.
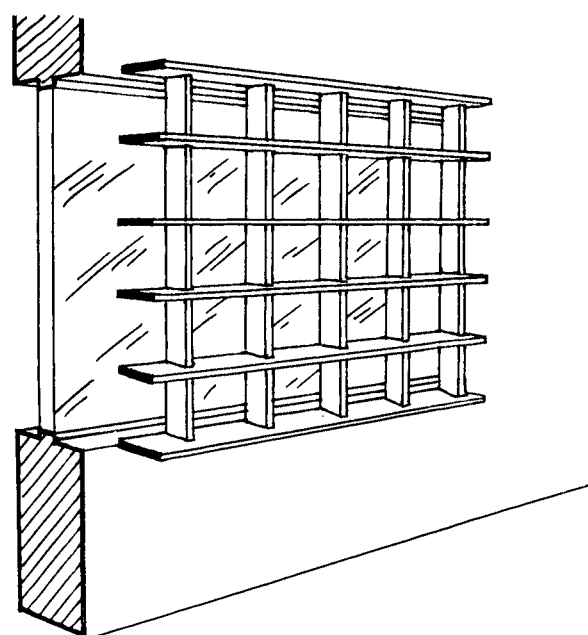
Figure **126**

External comb-type shades.

Make better use of horizontal air-flow

Horizontal air-flow helps to improve thermal comfort and remove pollution. Open windows are a popular and simple way of providing cross-ventilation. Multi-section windows help to regulate the air-flow according to wind conditions.
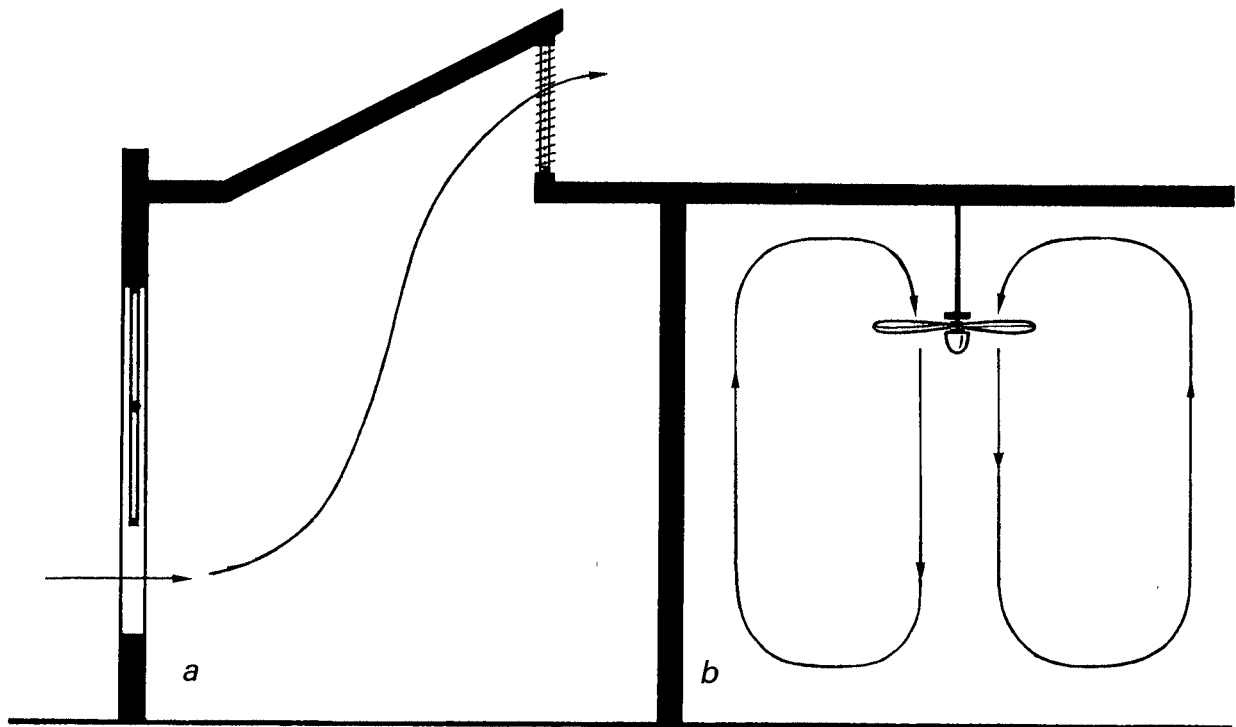
Figure **127**

(a) Ventilation.
(b) Air circulation.
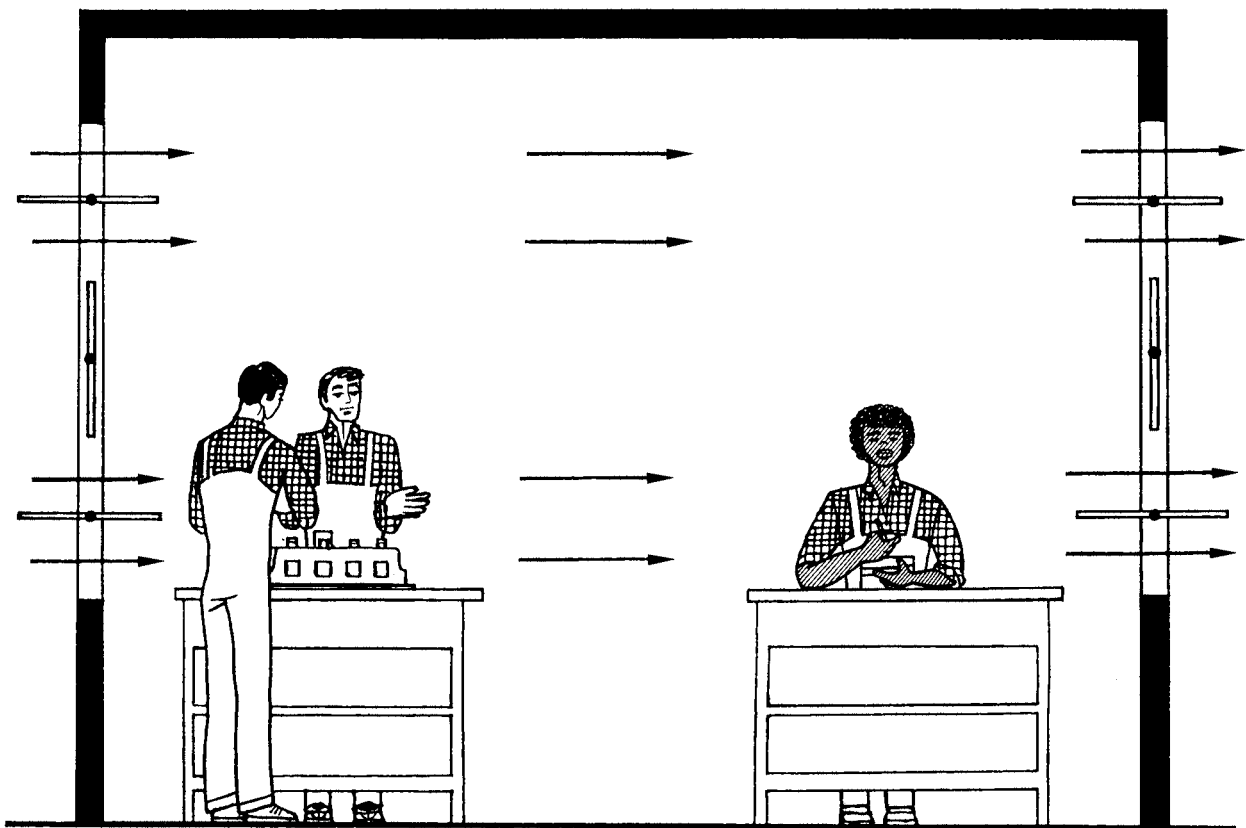
Figure **128**

Natural ventilation from adjustable openings on opposite sides of a room.

Utilise the tendency of hot air to rise

Usually it is not possible to provide sufficient ventilation in a large production area by opening windows or using wall fans. Inevitably, in the middle of the workshop there will be an area with no air movement at all. This problem can be resolved by using the natural upward flow of heated air, the "chimney" effect. This can be done by providing sufficient openings in the roof, for example by replacing solid glass skylights with adjustable louvers. The shape of the roof very much influences the effectiveness of natural ventilation (figure 129). Inclination of the ceiling towards the roof helps to avoid pockets of hot air.

Unfortunately, sometimes this solution is insufficient or has the side effect of allowing dust to come in from outside. In such cases, electrical exhaust fans should be installed to increase the air-flow (figure 130).

If you cannot afford to use electrical exhaust fans, you can try exhaust deflectors which do not consume energy (figure 131). Even a slight breeze from any direction considerably increases the flow of air through the exhaust.

Figure **129**

Air-flow routes in buildings of different design.
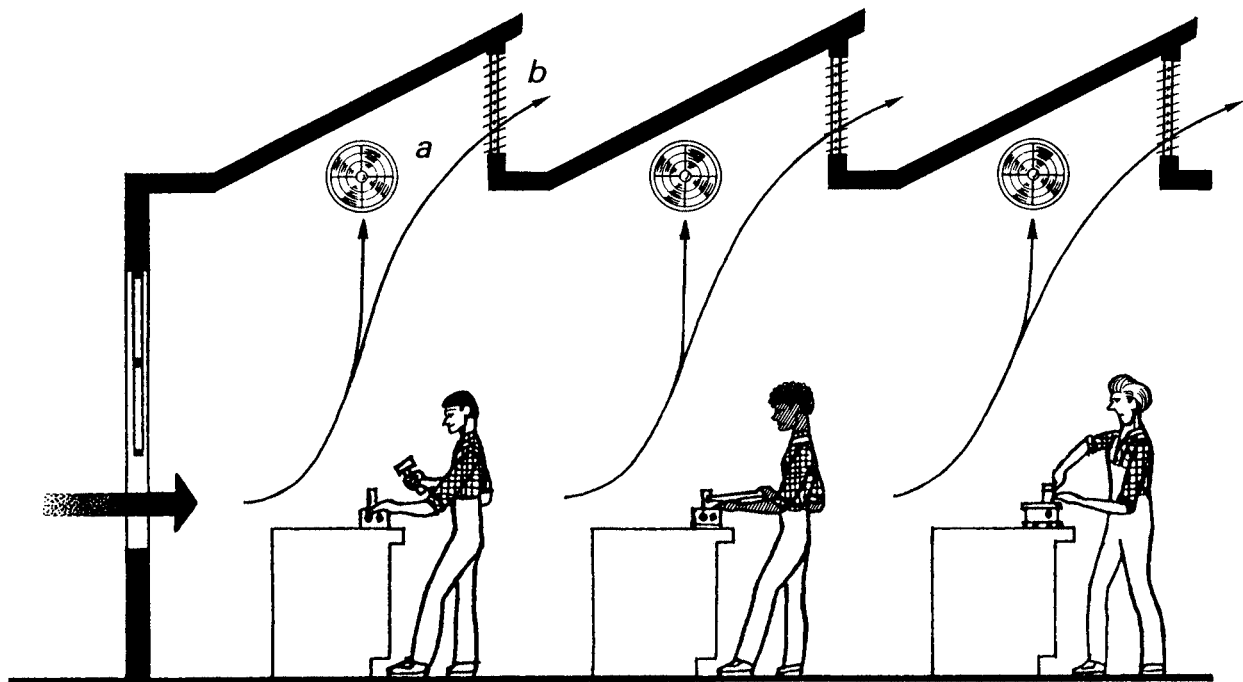
Figure **130**

Combined ventilation system. *(a)* Exhaust fan. *(b)* Louvered skylights.
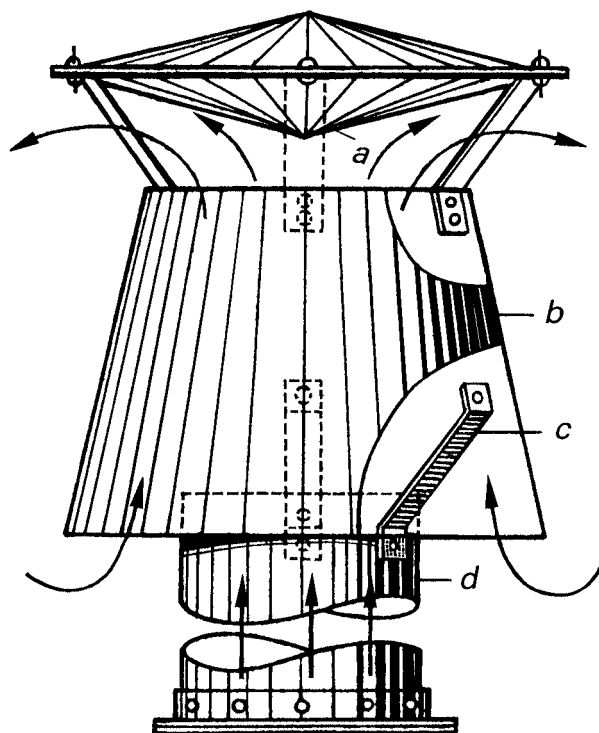
Figure **131**

Exhaust deflector. Operates in any breeze direction.
(a) Cowl. *(b)* Conical deflector body. *(c)* Fixtures.
(d) Upper part of the exhaust pipe.

Eliminate or isolate sources of pollution

Having taken measures against outside heat and cold and to improve general ventilation, you may have another problem to solve — the harmful effects of heat, noise, dust and fumes generated inside.

In addition to obvious sources of heat radiation such as furnaces, dryers or ovens, there are many other less visible ones. For example, even the most efficient machines release into the air as heat 80 per cent of the energy they consume. In addition, machines and equipment are sources of noise, dust and fumes. The ultra-violet radiation produced by arc welding is often an additional problem.

Your choice of ways to resolve these problems depends on the local situation, but the rules listed below can be used as general guidance.

The best method is to *eliminate* the source of pollution, for example, by switching from furnace heating of parts to high frequency electric current methods or from arc to spot welding.

If you cannot eliminate the source, *move it outside* and place it in a shed or under a canopy (figure 132) or in a separate specially equipped room.
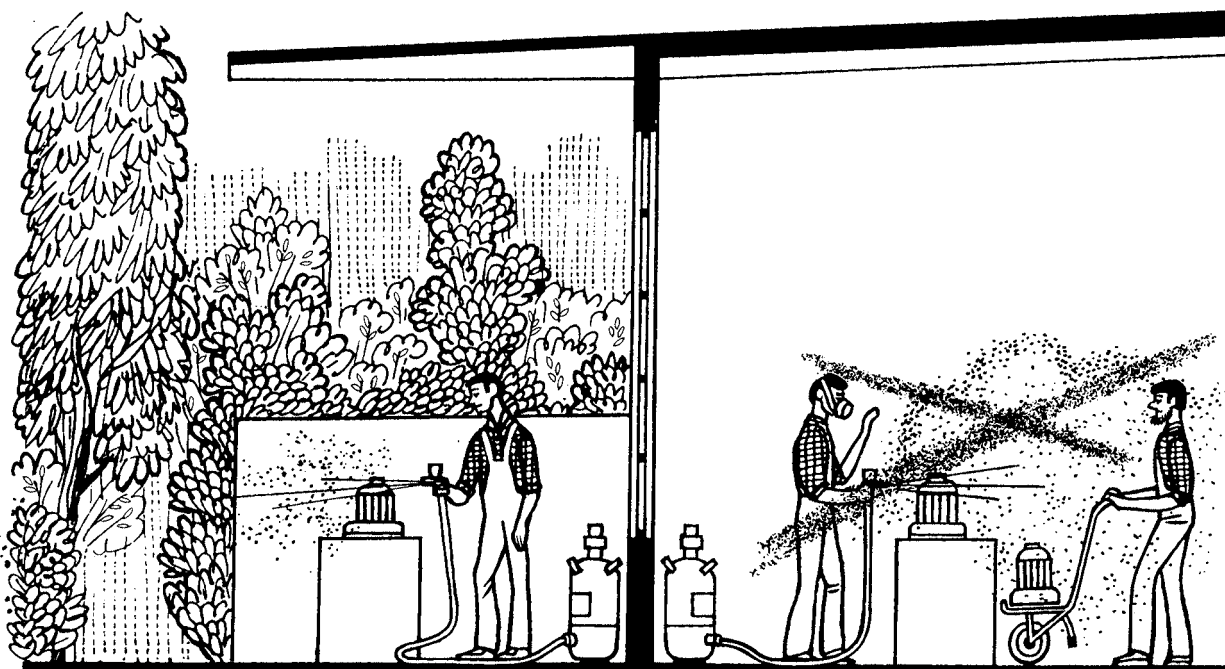
Figure **132**

Moving a lacquer spraying operation outside the workroom helps to improve working conditions.
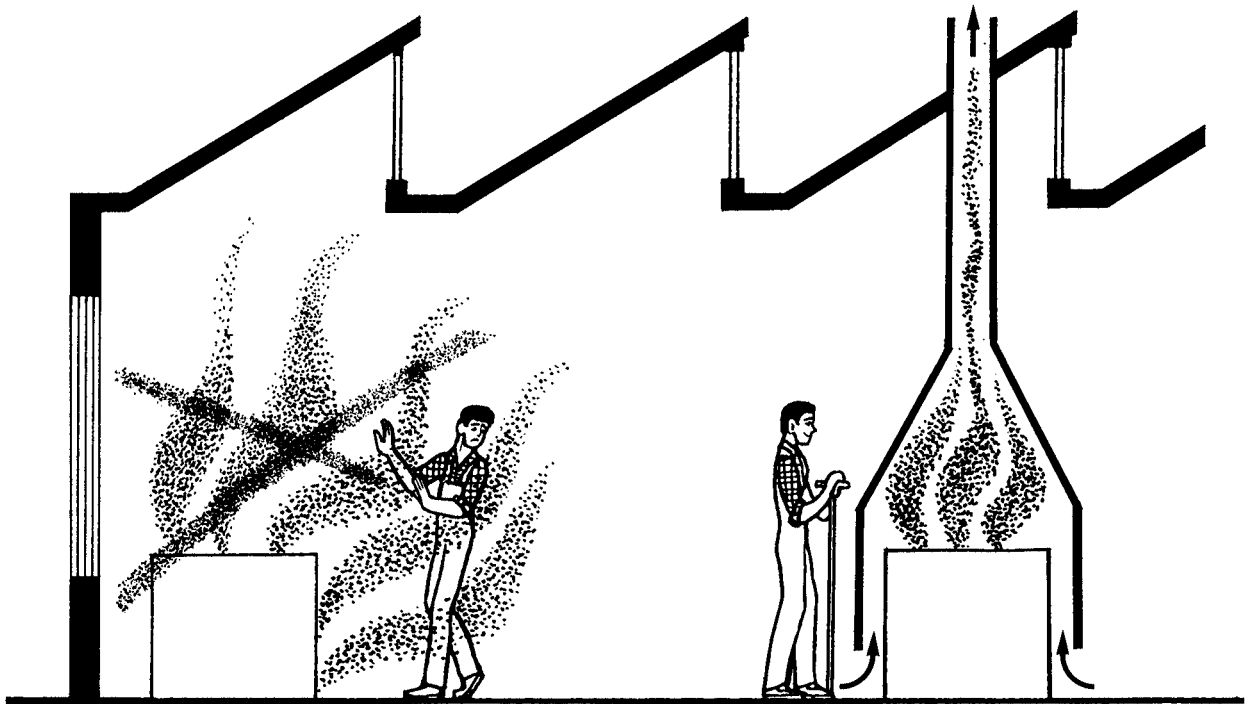
Figure **133**

Use of local exhaust against heat radiation and pollution.
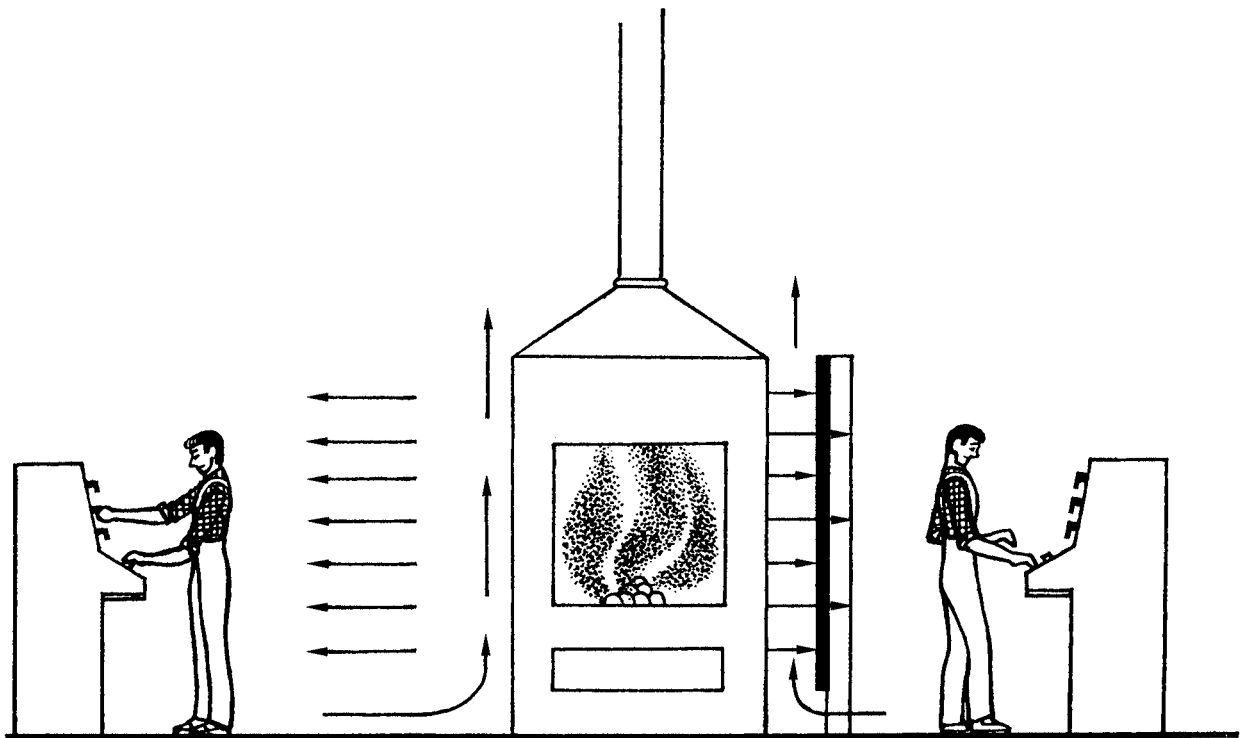
Figure **134**

Use of an absorbent shield to block heat radiation.
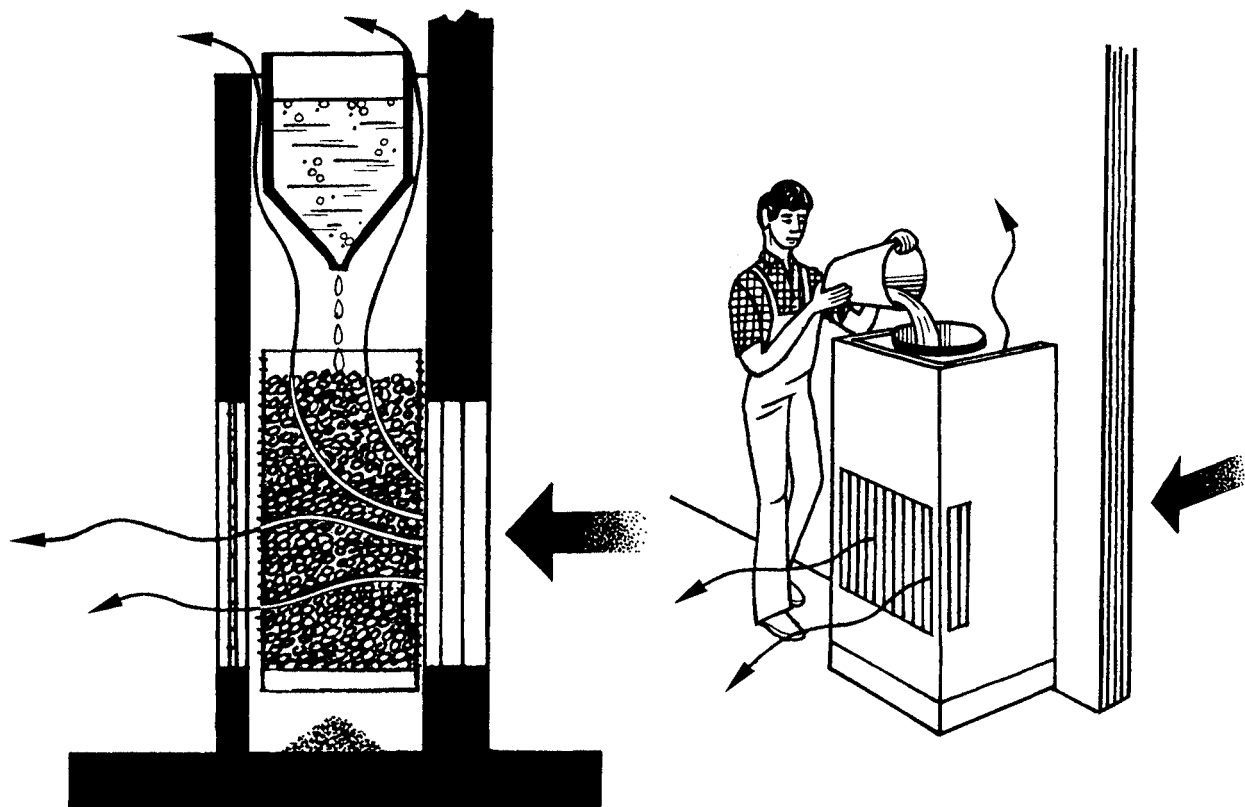
Figure **135**

Easy-to-make no-energy-consuming system for cooling and moistening incoming air.

If the source must be inside the workshop, *isolate* it from the general work-area. In the case of heat sources, use a hood with an exhaust (figure 133) or install:

(i) reflecting shields, which, to be effective, must be polished and maintained in a state of cleanliness; or

(ii) absorbent shields, which can be prevented from becoming sources of heat by being cooled with air or water (figure 134).

The radiation from arc welding can be blocked by installing a special welding cabin or by using movable screens.

Dust and fumes require special measures (see Chapter 6).

In areas where the air is very hot and dry, it is often worth installing a no-energy-consuming system for cooling and moistening the incoming air. From figure 135 you can see how such a system operates. The incoming hot air is passing through the dampened charcoal, loses heat and becomes more humid.

Improve your floor

We are inclined to underestimate the importance of the floor for productive, smooth and safe work. However, inappropriate floor surfaces or poorly maintained floors can be a major source of accidents, work interruptions and product damage.

The most important qualities of the floor surface are:

– *Strength*. A floor should be sufficiently strong to resist crushing due to loads from heavy machines or from traffic or handling of materials. Care must be taken to ensure that the wheels on mobile materials-handling equipment are of adequate width and diameter.

– *Resistance to wear and abrasion*. The floor must have sufficient resistance to abrasion to withstand normal use over a period of several years without deterioration and without excessive signs of local wear. Non-dust-forming properties can be critical for certain industries (electronics, food, etc.).

- *Resistance to chemicals*. It is important that the floor should be resistant to chemicals wherever there is a risk of oils, solvents, acids or other chemicals being spilt. This applies particularly in the chemical and petrochemical industries.

- *Comfort and safety*. The floor should have low thermal conductivity and absorb noise and vibration as well, since these phenomena have a direct effect on the occurrence of fatigue. A machine operator standing the whole day on a concrete surface gets much more tired than a worker on a wooden one. Furthermore, the floor should always help to avoid slipping and be easy to clean.

When considering the cost factor, we should not think exclusively in terms of initial installation but also take into consideration long-term durability, easy maintenance and cleaning.

The following table can help in the selection of appropriate material for the workshop floor.

Table 1

Properties of commonly used floor surfaces in small industrial enterprises

Properties	Clay	Concrete	Wood blocks	Poured asphalt	Plastic (vinyl)	Ceramic
Strength						
Compression resistance	– –	++	+	+ –	+ –	++
Impact resistance	+	+ –	++	+	+	–
Resistance to wear and abrasion						
Dust formation	Yes	Yes	Yes	No	No	No
Resistance to chemicals						
Water resistance	– –	+	–	++	+	++
Acid resistance	+	–	+	–	+	++
Alkali resistance	+	+	+	+	+	++
Oil resistance	+	–	+	– –	+	++
Solvent resistance	+	+	+	–	+	++
Comfort and safety						
Thermal insulation	++	–	++	+ –	+ –	–
Ease of cleaning	– –	+ –	–	+	++	++
Dielectric properties	– –	–	+[1]	+	+	+
Friction sparking	No	Yes	No	No	No	Yes

++ = very good
+ = good   – = bad
+ – = medium   – – = very bad
[1] if dry.

If you have to have a clay floor, there is a way to improve its properties. The addition of slag helps to increase the resilience of the surface (40 per cent clay, 60 per cent slag or gravel). Even better properties can be achieved by making the top layer of a mixture of clay (60 per cent) with metal filings (40 per cent). Take care to tamp properly.

It is also worth considering the high durability, easy maintenance, greater safety and high comfort of a floor made of wood bricks. This type of floor is ideal for small mechanical and assembly shops as well as for storage rooms where relatively heavy parts are handled. Almost any kind of wood can be used and not much skill is needed to make a wood-block floor (figure 136).

Floors which are frequently washed down with water should have a slight, even grade of 1-2 per cent towards a drain to ensure that the water flows away from the traffic area.
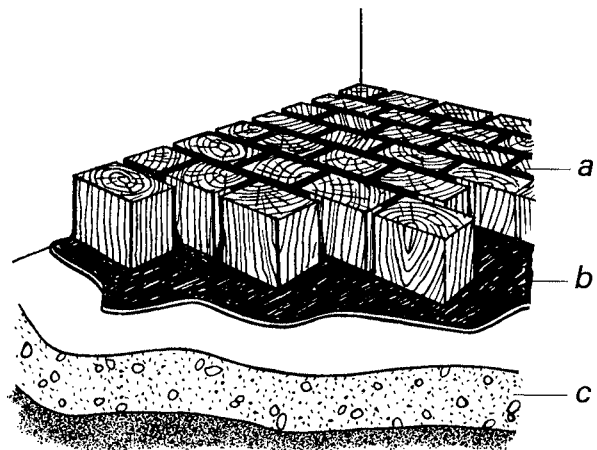
Figure 136

Wood-block floor. *(a)* Rectangular wood blocks. *(b)* Bitumen. *(c)* Concrete, asphalt or sand/gravel base.

Build flexibility and adaptability into plant layout

When you are setting up or modernising your production facilities, it is the right time to think about the best space allocation, transport arrangements and production routes, as well as about the infrastructure of the building.

Reserve free space in the work area – otherwise you will find it quickly becomes overcrowded, with no space for extra tasks or increased production. This will also help to avoid blockages of passageways.

Allocate sufficient passageways and make sure that they are kept clear. Often in small enterprises, little care is taken to provide adequate passageways for efficient and safe movement of materials. In addition, passageways tend to become filled with
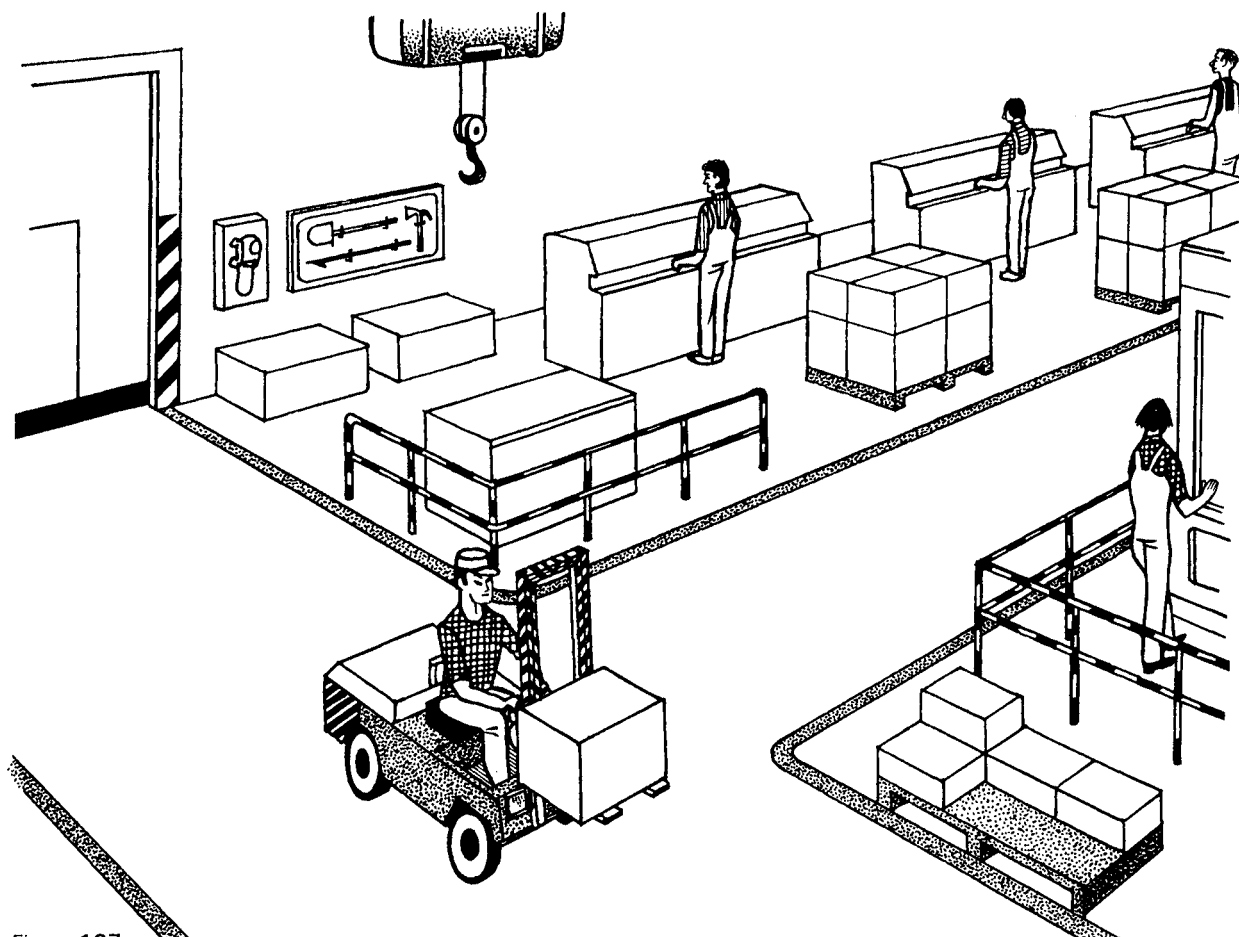
Figure **137**

Arrangement of passageways inside the factory.

materials and scrap. You should define passageways clearly. Install protecting barriers in dangerous areas, such as corners or places where passageways are next to work-stations. Clearly mark passageways as well as work and storage areas by drawing easily visible border lines of different colours (figure 137). It can also be very useful to paint the whole floor in selected colours (for example, green – work area, brown – passageways, grey – storage area, yellow – lines marking boundaries). Make sure that everyone knows that the zones are to be respected. Never allow anyone to put anything down except where it belongs.

Avoid the use of rail-type floor transportation systems, otherwise you will be in trouble when the need comes to alter production flow. Rail systems also interfere with movement in the production area. Give preference to carts, trucks and mobile racks or install an overhead transfer line.

Use production equipment and storage facilities which are easy to assemble and to dismantle. Always give preference to "modular" equipment which enables you to set up, move or replace a work-station in a very short time and with a minimum disturbance to production.

Provide evenly distributed general lighting and supply lines throughout the production area instead of designing them according to the current production layout. This will pay off through easier installation of new equipment or work-station arrangements. Overhead supply lines (for example for electricity, water, compressed air) are most appropriate for production areas and underfloor lines for offices. To cut lighting expenses it is worth while to provide separate switches for groups of lamps inside the shop (for more information see Chapter 7).

Prevent fires and electrical accidents

Fire

Fire in your work area can ruin your whole business and cause serious injuries or even deaths. Fire protection should always be a priority. Following these simple rules can help you prevent fires or reduce fire damage if one occurs.

Prevention

Prevent fires by making sure that rubbish, sawdust, wood scraps and other burnable materials are cleaned up and placed in metal containers. In addition, follow the rules below concerning common sources of fires:

- Electricity: ensure that electrical circuits are enclosed, insulated, earthed and properly fused; see that electrical circuits are not overloaded (see next section, on electrical hazards).
- Friction: lubricate properly the moving parts of machines; make sure that moving belts or drives do not rub against housings.
- Hot surfaces and open flames: keep combustible and flammable material well away from hot surfaces and open flames, such as furnaces and welding and cutting operations.
- Flammable liquids: store flammable liquids in appropriate containers away from heat sources.
- Spontaneous combustion: dispose of oily used rags in airtight containers.

Escape routes from the work area

Make sure that every floor or large room has at least two ways out and that these exits are kept unobstructed and unlocked. Clearly mark escape routes and exits and provide sufficient lighting so that there is no confusion in reaching exits. Make a plan for emergency escape, including a place to gather outside the factory where you can account for everyone and be sure no one is still inside. Finally, make sure that everyone knows what should be done in case of fire.

Fire fighting

Provide appropriate fire extinguishers and fire-fighting equipment near the sources of potential fire. Check the readiness of equipment regularly. Assign responsibilities for fire fighting and train workers in how to fight fires.

Electrical hazards

Workers tend to ignore electrical hazards. The abuse of safety rules in work with electricity is a prime reason for fatal accidents and fire. The following rules can help you to reduce electrical hazards.

Prevention

Establish a firm rule that any repair or maintenance work on machines should only be done when the power is off and the switch is locked in the OFF position. The key to the lock of the power switch box should be in the pocket of the person doing the work.

In addition to this basic rule:

- Be sure that all electrical wiring is identified and protected. There should not be any exposed wiring.
- All circuits should be protected with circuit breakers or fuses. This protects the machines against damage and the plant against fire.
- All equipment should be earthed. A separate earthing wire should run from the machine to an independent earthing rod.
- Portable electric tools and equipment should be double insulated or earthed.
- Be certain that electrical power can be shut off immediately in case of emergency. The main power switch should be in easy reach and clearly marked. All other switches should be clearly labelled as to what they control.

Emergency action

Everyone in the plant should know how to help a person suffering an electric shock:

- Turn off the power and remove the person from the source.
- If the switch is not accessible, find a long, dry, clean and non-conducting object to remove the person from the source or the source from the person. This is very dangerous.
- Once the person is clear of the power source, be prepared to administer mouth-to-mouth resuscitation or cardio-pulmonary resuscitation.

Summary
Rules for making your premises a better place to work

Protect your factory from outside heat and cold

Let natural air-flow improve ventilation

Eliminate or isolate sources of pollution

Improve your floor

Build flexibility and adaptability into plant layout

Prevent fires and electrical accidents

Work organisation

Improving work organisation is one of the best ways to increase productivity, especially since it can often be done without additional capital investments. However, better organisation is not always easy. If you have followed the advice in the previous chapters, you will have established many of the preconditions for efficient organisation. You are ready for more advanced improvements.

Not all the ideas suggested in this chapter can be implemented immediately. Changing the design of machines and products or the layout of the shop-floor can be expensive and time-consuming. There are, however, a number of ideas which can be set up immediately at no cost, such as changing work assignments. You can start with these ideas and work towards the others over a longer period.

Some of the ideas you will find in this chapter may seem "soft" on workers. You may be used to the idea that only strict supervision and strong pressure give good results. Remember that supervision is expensive and that workers, however much they need their jobs, are not fools. They would rather work well for a boss they respect and admire and who treats them fairly.

On the other hand, do not fall into the trap of thinking that being nice to workers is sufficient. Efficient work is difficult to plan and design. You will need to think hard about products, machines, work flow and job assignments.

The benefits of better organisation do not usually show up immediately. New procedures and work methods take time for workers to learn. Adjustments may be necessary before the new system works well. There is normally a "dip" in productivity when organisational change is introduced, followed by a strong improvement if you have done it well. Chapter 11 will help you to do a good job of implementing change.

Get rid of extra tasks and operations

Each work operation is an extra cost – it takes space, machine and operator time and energy. Your first step should therefore be to examine critically every production task and operation. In doing this,

ask yourself whether this task or operation is really needed. Can it be eliminated altogether? Can it be performed in combination with other tasks and operations?

We can eliminate tasks by:
- introducing changes into the design of the product;
- switching to new production methods (for example, changing from metal-cutting to stamping or to forming parts from metal powder or plastic);
- performing a number of tasks in one operation by using special multi-task tools or machines;
- machining several parts in one operation.

Defeat monotony to keep workers alert and productive

At your enterprise you are likely to have some work-stations or sections where tasks are highly fragmented, and work operations are simple but monotonous.

At first sight, such arrangements seem to be efficient. Work is done quickly – no extra movement is lost. But monotony and lack of variety cause boredom and fatigue, and repetition of the same movements results in muscle strain and general stress. Attention wanders, quality suffers and the worker looks for excuses to stop the machine. The result is low efficiency and negative work attitudes. In the following sections we will discuss ways of combating this problem through basic organisational changes. However, you can start with some simple steps which improve work quality and efficiency. These steps include:
- Frequent changes in tasks. This exercises different muscles and lets tired muscle groups rest. It also stimulates the worker's attention. Each job should have a variety of tasks which use different muscle groups. You can also rotate workers to different work-stations (job rotation).
- Opportunities to walk around or change from sitting to standing or standing to sitting. You can ask workers to go and get any necessary
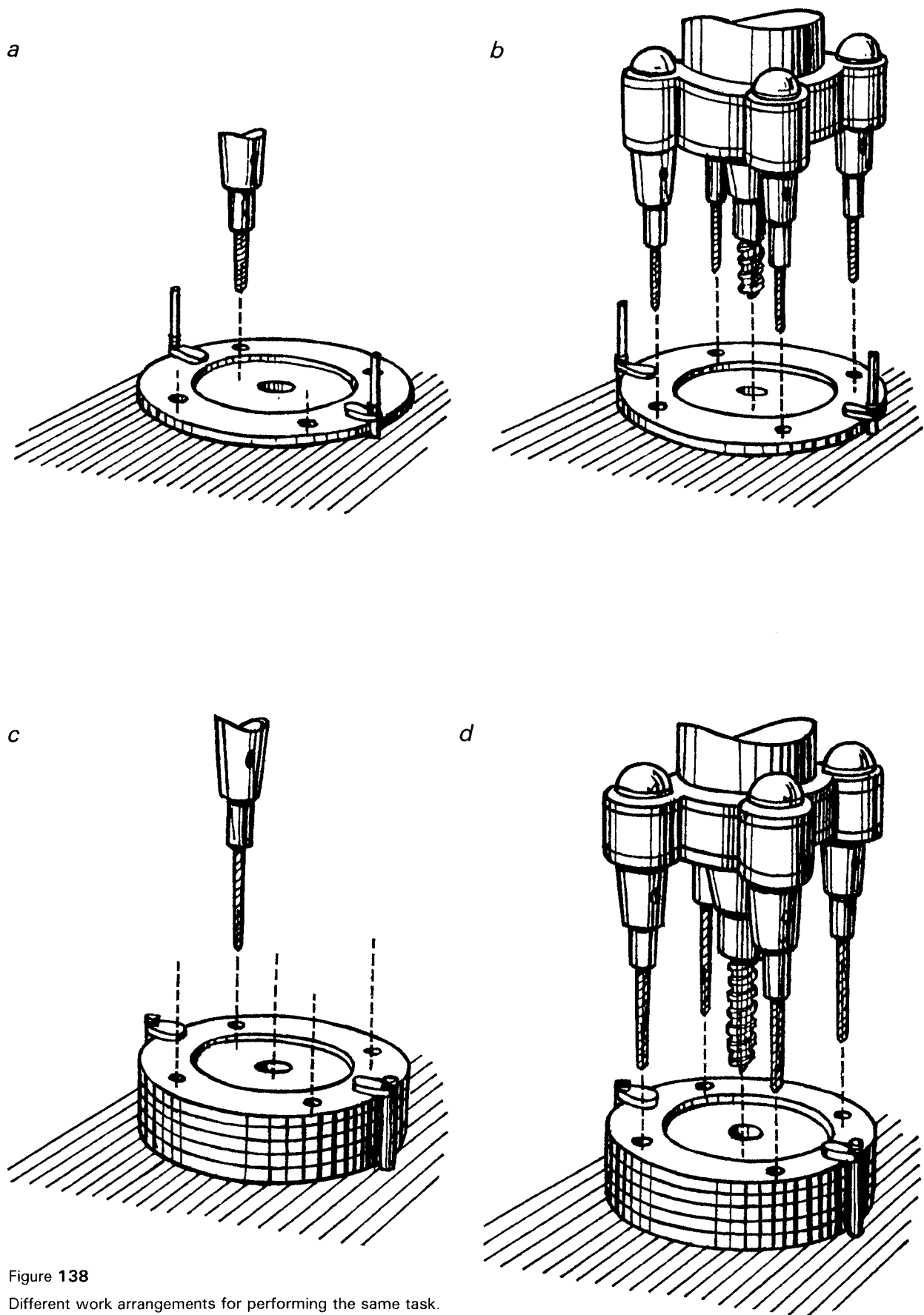
Figure 138

Different work arrangements for performing the same task.
(a) Drilling with a single-head drill.
(b) Use of a multi-head drill.
(c) Drilling a stack of parts with a single-head drill.
(d) Drilling a stack of parts with a multi-head drill.

parts during their work or simply provide appropriate chairs and stools.

- Frequent, short breaks. No one can keep perfect attention for a long time. When attention drops, mistakes are made. Breaks help overcome this problem. Jobs which are. repetitive, fast paced, strenuous or which demand close attention to quality will be done much more productively with many short breaks. These breaks can also be an opportunity to move around and even to exercise.

- Opportunities to communicate with other workers or listen to music without leaving their work-station. This stimulates the workers without interrupting work. Music is especially effective during the half-hour before lunch or the end of the day.

Install buffers to make the work flow smoothly

In addition to the above-mentioned measures, there is one further step which should be taken in cases where you have machine-paced assembly-line work. This is to introduce buffer stocks. Buffer stocks are small supplies of goods before and after each machine or work-station. The idea is that the worker or machine should never have to wait for the next work-piece in order to continue work. If there is a small stock of work-pieces ready for work, there is no waiting. If a small stock can be built up after the work-station, the next worker or machine will not have to wait either.
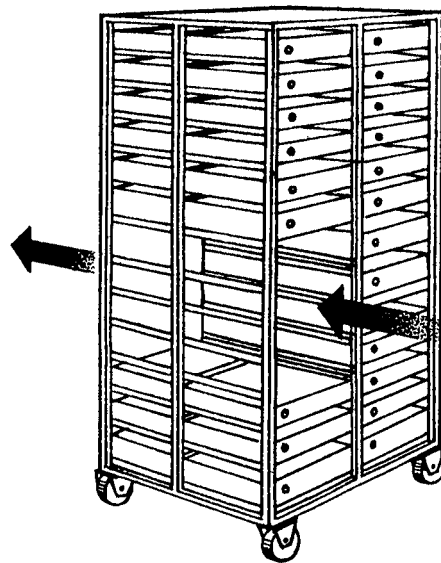
Figure **139**

Mobile stores enable you to move buffer stocks from one work-station to another.

The type, design and capacity of the buffer or magazine depend on product design, work-pace variations, space available, etc. In the case of small work items, simple bins or small pallets with dividers are usually sufficient. For bigger and heavier work-pieces like metal pinions, shafts or metal sheets, special racks and pallets should be made.

In designing buffers one should try to:
- minimise the floor space taken up by the buffer;
- ensure easy maintenance, transport and replacement;

Figure **140**

Traditional machine-paced assembly line.
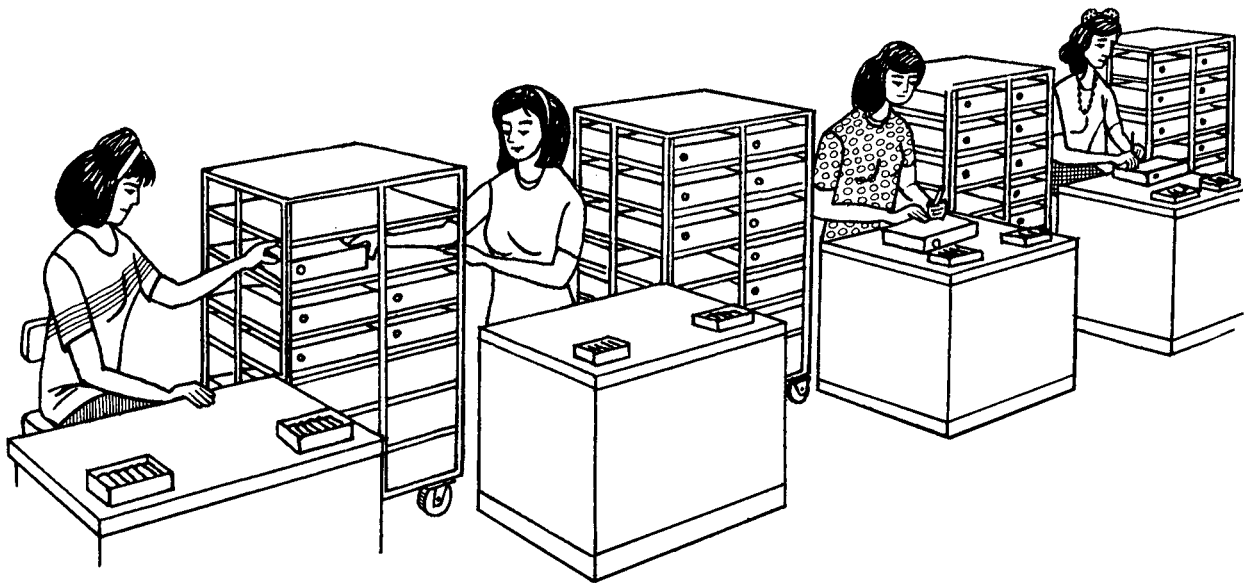
Figure **141**

Assembly line with intermediate buffer stocks.

- choose the appropriate height for the buffer and design it to minimise the effort needed to put stock in or take it out;
- store work-pieces in a systematic manner so you can get an exact idea at a glance of what is available.

When buffer stocks are present, workers can build up a small advance which they can use to take a few seconds' rest, correct machine settings or get some spare parts without slowing down the operation as a whole. Buffer stocks help to make production continuous and flexible. While they are a simple idea, they are used in all the most modern production systems.

Figure **142**

Table-top rotatable buffer line.

To improve efficiency further you may consider building a table-top rotatable buffer line. The system enables operators to work at their own pace and materials are always at their finger-tips. Having performed a certain operation, an operator places a work item on the shelf assigned to the next work operation (figure 142).

Some other features of this system are that:
- multiple products or sub-assemblies can be run at the same time;
- products of different sizes or shapes can be accommodated;
- any number of people can perform any operation from any position around the carousel.

Design responsible, flexible jobs

Look around. Your workers are different from each other. One may be very quick but error-prone, another may be slow but precise. One may like to learn new skills while another avoids any changes. The physical capacities of individuals also differ to a considerable degree. It is obvious that *there is no "average" worker*. But, none the less, we continue to design work for "average" workers who do not exist. As a result, one part of the workforce is under constant strain as their capacity is lower than "average" and we have low quality, work interruptions and absenteeism. Others are underutilised as their capacities exceed the "average".

Poorly designed work leads to many lost opportunities and extra costs. Careful design offers many benefits. Here are some characteristics of well-designed jobs:
- jobs should make clear who is responsible for output and quality;
- jobs should help workers to develop skills and become interchangeable;
- jobs should occupy each worker fully but should remain within each worker's capacity.

A very important way of following these three principles is to combine production tasks. If you combine enough tasks so that the worker is responsible for a complete product or sub-assembly, it will be easy to measure the worker's output. It will also be clear that the worker is responsible for the quality of the product. There is no one else to blame for mistakes. All this makes for better feedback and the possibility of payment by results. It also motivates workers by making them feel individually responsible for a significant piece of work rather than just a single fragmented task.

If you do not combine tasks, it is very difficult to keep workers fully occupied. Some tasks take longer than others. In order to "balance" operations, some workers will have an easy time while others will struggle with bottleneck operations.

Combined tasks also help to develop skills. A small enterprise can hardly afford a high level of specialisation of skilled workers. Absences of repair-workers or quality-control specialists can result in production stoppages or shipment of a defective product to the customer. The shortage of management resources in small enterprises should be compensated by developing a sense of responsibility and self-reliance in the workforce. You cannot achieve these goals quickly, but in the long run they can become a foundation for company survival and prosperity.

In order to develop your workers' skills you may consider the following:
- *increasing machine operators' interchangeability* by providing possibilities for operators to acquire multiple skills and by encouraging occasional job rotation to keep skills alive;
- *reducing the dependency of machine operators on maintenance and support staff* by assigning to them partially or in full the following functions: maintenance of machines and tools; setting up of machines; handling of materials near their work-station; inventory work; and quality control. The possibilities for this depend on a number of factors, among which are workers' attitudes, the availability of skills to perform new functions efficiently, the difficulty of and time available for the setting-up operation, the frequency of setting-up operations, the degree of rigidity in other production tasks and the need for special auxiliary equipment;
- *reducing the cost of constant supervision and thereby increasing motivation* by giving workers more chance to decide how work should be organised (for example, setting priorities, planning their own work, and choosing their own methods); by providing on-the-job training through gradually increasing the level of difficulty of tasks; and by letting workers share their experience and knowledge with others by making them responsible for training less-experienced workers.

In some cases you may want to allow each worker to decide when to start and finish work and when to take a break, provided that the work quota is fulfilled or total hours are completed.

In some cases, to make job enlargement possible, a product should be redesigned or divided into a number of modules/sections each of which can be assembled by a worker.
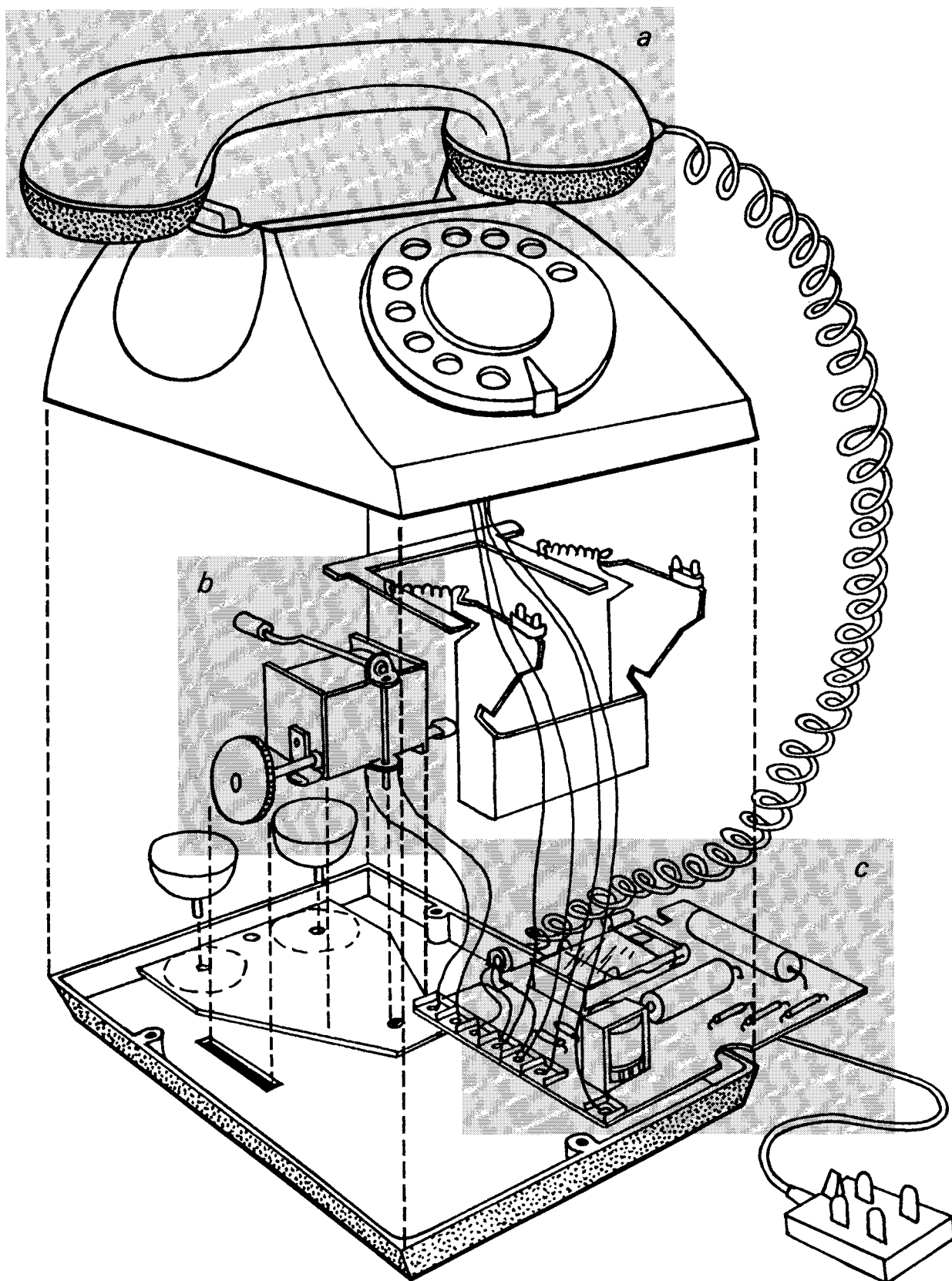
Figure **143**

A telephone constructed of modules *(a)*, *(b)* and *(c)*, each of which can be assembled by one worker.

Set up autonomous groups to improve efficiency and to cut supervisory costs

So far we have been dealing with work assignments of individual workers. Designing each individual job is a complicated and time-consuming task. Are there ways to avoid it altogether? Yes, many companies around the world find it feasible and beneficial to assign work to groups instead of individuals. You may already be doing this in certain cases.

Such group work arrangements have several advantages:

- it is much easier, and less time-consuming, to formulate objectives and set tasks for a group than for an individual;
- the work flows more smoothly, and less supervision is needed;
- it takes less time for new workers to learn a skill, and workers have better opportunities for acquiring multiple skills;
- continuous co-operation between the workers helps them to spot mistakes more promptly and makes it easier to improve methods and eliminate unnecessary work.

Many of the most advanced large companies have introduced group work and experienced very large productivity increases. They have discovered that groups can work faster and better than the same number of separate individuals, even if there are extra supervisors and work study experts. They have also learned that quality circles and other schemes for motivating workers and improving methods are much more effective when work is organised in groups. You can benefit from their experience. Consider the following comparison of cost, productivity and quality of work:

Individual jobs	Group work
The pace of work is limited by the slowest job in the line. Bottlenecks must be overcome through intervention by a supervisor.	Workers can flexibly help to overcome bottlenecks by exchanging tasks and sharing work.
A change of products means that someone must redesign all jobs.	Workers can work out a new arrangement by themselves.
Absent workers, machine breakdowns, problems with raw materials, etc., require intervention by a supervisor, who must decide what each worker must do.	Workers can work out a new arrangement by themselves.
Each worker learns how to do one job.	Workers can learn all jobs in the group.
Each worker is responsible only for his or her task. Delays, mistakes and other problems can be blamed on someone else.	The group is collectively responsible for productivity, quality and discipline.
A separate supervisor must be paid a higher wage for overcoming problems, planning and assigning work, discipline and other tasks.	All these tasks can be handled by the group.
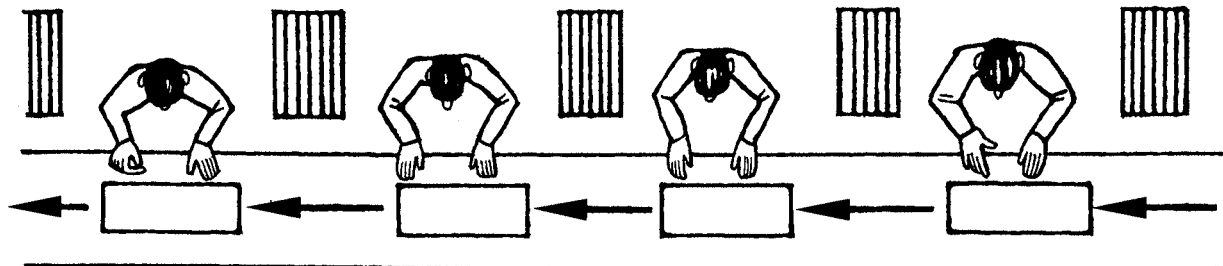
Figure 144

Traditional conveyor line arrangements.
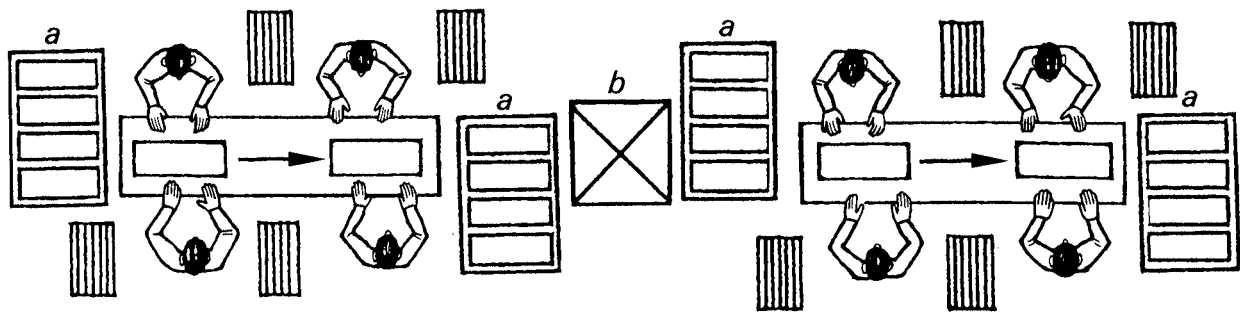
Figure **145**

New arrangements based on group work-stations and buffer stocks.
(a) Buffer stock.
(b) Automated assembly unit.
Note that the buffer stocks and group work-stations allow for partial automation without disruption of the production process.

One way to introduce group work is to replace a rigid conveyor line by "group work-stations", with buffer stocks between them (figures 144 and 145).

Such arrangements facilitate to a considerable degree the gradual introduction of automation with minimum disruption of existing operations.

In the case of manual assembly of electronic and small electrical and mechanical items, you can consider grouping assembly workers around one table. To facilitate easy movement of materials between the operators, a manually rotated carousel device can be installed.

The efficiency of group work depends very much on the individual's attitude towards work as well as on the "work climate" inside the group. Group members should have the right skills for the work being done and be able to "get along" with each other. It is also important that groups be the right size. There should be enough workers to perform the task, but not too many (ideally four to eight).

Rewards should depend on the performance of the group as a whole and not on the performance of individual group members.

Links should be set up between the work group and any other groups who have information and/or expertise that the work group needs (for example, concerning supplies or maintenance).

The group should have *control over the methods used* to do the work, and the way the work is shared among group members.

The group should be given regular *information* about its performance.
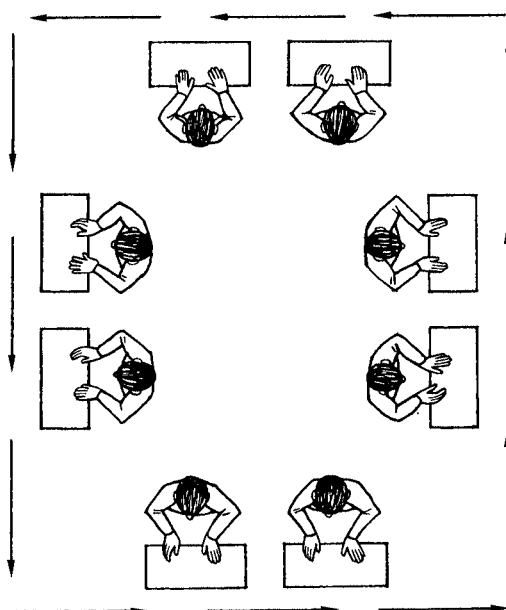
Figure **146**

Individual work-stations.
A round-table group work-station.

Thus far we have discussed ways to improve efficiency at separate work-stations and work areas. In order to attain full efficiency, we have to find the most appropriate way to link work together, or to put it another way, we need to select a general pattern of production flow.

Your choice will depend on the type and volume of production, the equipment and skills available and many other factors. However, there will be a common overall task – to *improve response to your customers' demands in terms of quality, cost and timing.*

How can you organise your production to meet these objectives? It can be done by redesigning work arrangements in such a way that:

— there is one simple, preferably straight-line flow of materials for each product or family of products;

— everyone is concerned not only with the quality of his or her own operation but with the total quality of the product;

— there is constant and rapid feedback between the customer or dealer and everyone engaged in production;

— individual rewards depend not only on performance of a given task but on attaining a common final goal.

In the majority of small enterprises, machines and work-stations are grouped in functional departments. Each specialises in a limited number of operations: metal cutting, plastic forming, assembly, testing, etc. Functional specialisation often goes even further. In some machine shops, separate sections for turning, drilling, milling and grinding can be found (figure 147).
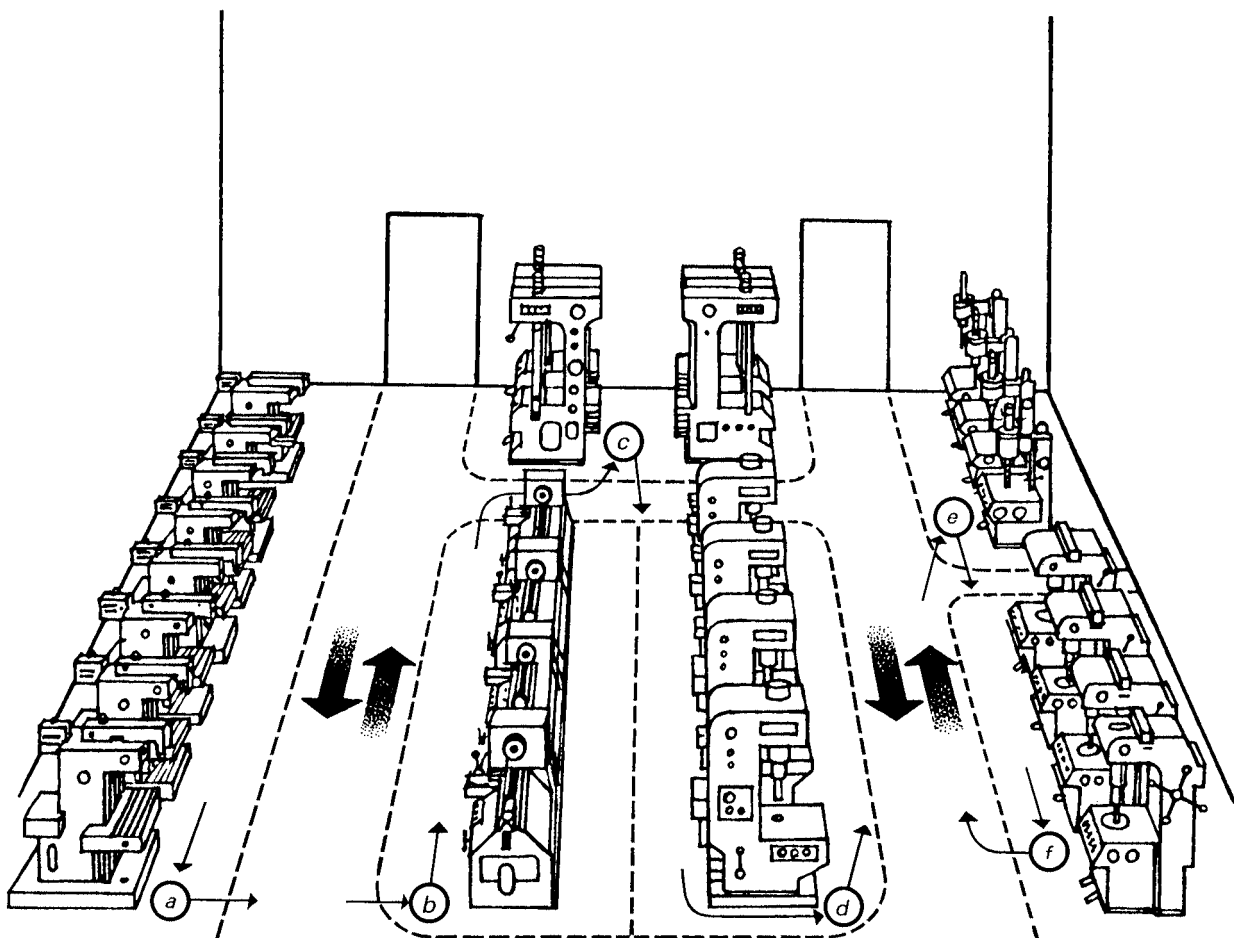
Figure **147**

Functional layout in a machine shop. It includes the following production sections: *(a)* milling; *(b)* turning; *(c)* cutting; *(d)* pressing; *(e)* drilling; *(f)* grinding.

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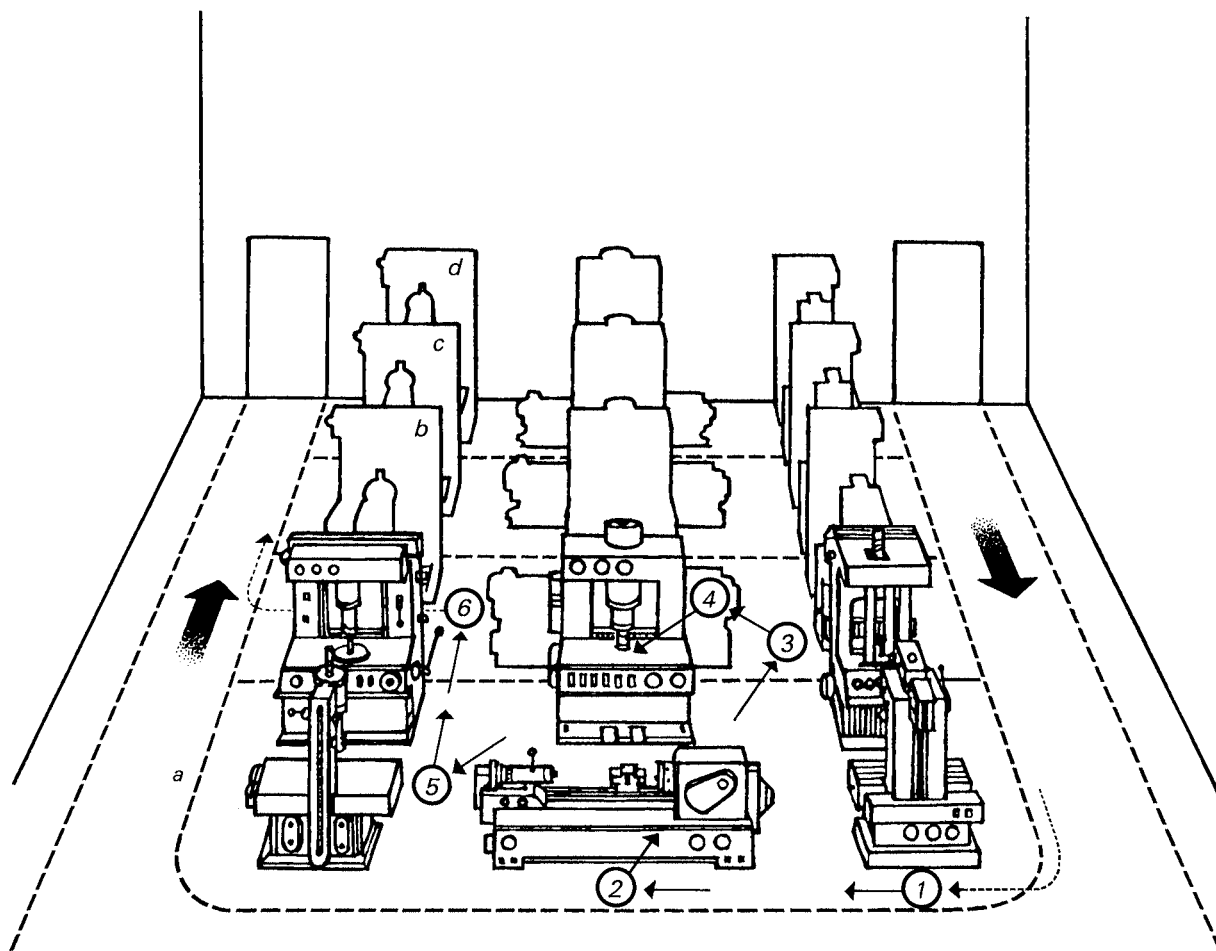
Figure **148**

A machine shop organised on a product-oriented basis. *(a)* to *(d)* are autonomous production sections, each manufacturing a final product or a "family" of similar product components. An example of the route of the product is shown by numbers 1 to 6.

An alternative – *product-oriented organisation* – is becoming more and more popular. Some machinery, equipment and work-stations are grouped together physically and administratively to form a production section which manufactures entire products or a "family" of complex product components (figure 148).

One big advantage of the product-oriented work system is that each worker can clearly see the connection between his or her own work role and the overall activity of the company. In addition, a supervisor or group of workers can plan work and solve problems concentrated on the real goal of the enterprise: to produce the final product. Other benefits are: much shorter travelling distances for materials, reduced stocks, shorter throughput time for materials, reduced investment in tool handling and setting costs, increased capacity and simplified control of material flow.

But don't rush to restructure your work flow. Product-oriented manufacturing in a pure form requires certain definite conditions and cannot be used in all situations. It is very difficult if:

- there is no stable product mix;
- there are not enough machines to equip all separate production lines;
- production capacity for each product exceeds market requirements.

The table gives you some guidance in making a choice of the most appropriate work arrangements.

Your choice will vary according to the scale of production, the available equipment, the skills of the workers, and the predictability of customer demand.

Even if you find that product-oriented organisation in a pure form is not for you, think of a compromise solution. For example, you could retain expensive universal machine tools in a functional department and decide to group together the equipment and work-stations that produce one type or a family of similar products. You will almost certainly benefit from this innovation.

Table **2**

Comparison of two types of production organisation

Characteristics	Type of work arrangements	
	Functional	Product-oriented
Material flow	In batches	Nearly continuous
Material throughput time	Long	Short
Stocks of work in progress	High	Low
Capacity of machine utilisation	High	Relatively low for certain machines
Investment in special tooling	High: one set per operation	Low: one set per family of parts
Responsibility for quality	Many work units per product	One work unit per product
Spotting of defects	Slow	Quick
Control of material flow	Complex	Simple
Level of co-operation between operators	Low	High
Product mix flexibility	High	Low
Dependence on machine reliability	Relatively low	High

Once the dimensions and the positions of machinery, storage facilities and auxiliary services have been determined, it is advisable to make a diagram of the proposed layout before proceeding with the actual rearrangement of the workplace, which may be a costly operation. This can be done by the use of templates or pieces of cardboard cut out to scale. Different coloured card may be used to indicate different items of equipment, such as machines, storage racks, work-benches or materials-handling equipment. When positioning these templates, make sure that passageways are wide enough to allow the free movement of materials-handling equipment and goods-in-process and that there is adequate space for intermediate storage and buffer stocks. If necessary, scale models may be used to provide a three-dimensional view of the layout.

Summary
Rules for effective organisation of work

Get rid of extra tasks and operations

Defeat monotony to keep workers alert and productive

Install buffers to make the work flow smoothly

Design responsible, flexible jobs

Set up autonomous groups to improve efficiency and to cut supervisory costs

Make the organisation of production fit your business objectives

11

Implementation of improvements

The small or medium-sized enterprise must cope with a very rough world, and it is rapidly getting rougher. If you want to survive and grow, your enterprise must be dynamic. To compete, you need constant improvement. Otherwise you will not be able to take advantage of opportunities or resolve problems rapidly.

When you first looked at Chapters 1 and 2 and used the checklist in your factory, you probably found several isolated measures that were worth while. There are a number of ideas which can be quickly and easily applied in almost all small and medium-sized enterprises, and we hope you have already profited from these ideas.

Now it is time to go further. Chapters 3 to 10 have given you the information you need to take a fresh, intensive look at your factory.

Start with a small, specific area where there are only a few work-stations or jobs. Try to see if you can find ways to make it operate really efficiently. The rest of this chapter will help you to apply the lessons from this *Action manual* as a whole.

You may have read about quality circles or other advanced management ideas and wondered if they can be applied in your own company. They can. You will have to discard some of your old assumptions and habits and put some real time and work into making your enterprise tough and flexible. If you do, you will be surprised by the opportunities and energy which have been hidden inside your company.

Develop a complete solution

If you have a bottleneck operation or problem area in your workplace, it probably results from a combination of factors. Consider the handling problem in figure 149. Workers must make frequent trips to take the work-pieces from one work-station to another. The work is slow and tiring and there is a risk that workers will fall and damage the parts or injure themselves.

As a first step toward efficiency, we might suggest that the worker carry the work-pieces on a small tray or pallet. An even more important point is that

workers can carry many more parts if there is a cart to put the pallet on. However, in order to use a cart, additional measures are necessary.

You will usually need to take several actions at the same time in order to meet the objective you have set. Use the whole checklist to look for ways of achieving a complete solution of your problem. Remember that the limits on the productivity of your workers come from several sources, some of which may at first seem unrelated to your objective. Develop a complete solution. Recheck and see if there is something you have left out in each of the technical areas covered in this book:

- materials storage and handling;
- work-station design;
- productive machine safety;
- control of hazardous substances;
- lighting;
- welfare facilities;
- premises;
- work organisation.

If the problem is especially complex, establish a group of workers to give you advice on it. More will be said about this later.

Make sure your ideas will work

Suppose that one of the changes you have decided on is to improve lighting at a critical work-station. Consider, for example, a worker with a poorly lit work-station, with no source of natural light, with dark walls and ceiling and with a single light source facing him or her. How would you solve this problem?

Many things can go wrong when you try to improve lighting. For example:
- You could create glare or too much contrast between light and dark areas by installing a more powerful lamp.
- You could create heat and glare from an improperly designed and placed skylight.
- You could create glare and distraction by placing a worker facing a window.
- You could improve the situation by cleaning windows, skylights and lamp fixtures only to have the same problem return in a few weeks because of the lack of regular cleaning.

Figure **149**
Manual carrying of work-pieces.

- You could increase the quantity of light when the real problem is the direction of light or the task background.

How can you increase your probability of success? There are several ways to try and be sure that the improvement you have chosen is the best one for your enterprise and that it will work.

- Before starting, consider alternative solutions and see which one suits you best.
- Try your ideas first in a small way and see how they work. For example, before you decide to relocate a whole row of machine tools in order to take better advantage of light from windows, try it first with one machine and evaluate the results.
- Observe a similar improvement in the same conditions in another enterprise. It is always better and cheaper to learn from the mistakes of others than from your own.
- Get the advice of someone who has experience in solving similar problems. This is especially important when your enterprise is trying to solve this problem for the first time.

Mobilise worker support

If you make a worker's job more difficult, the result will be lower productivity and resentment, not higher productivity and appreciation. If your improvements are intended to build loyalty and motivation and to be fully effective, you need to be sure that the workers understand how they will benefit. This requires taking a look from the worker's point of view at the impact on job security, pay, level of responsibility, type of supervision, difficulty or ease of work, etc. The workers will certainly be thinking about these things.

Ask yourself who will be affected by the change. This means not only, for example, the worker who uses a cart but everyone who has been using the space in the passageway. In what ways will workers be affected positively? Be sure they know about these positive effects, so that they will appreciate and support your actions. In what ways will workers be affected negatively? Could anyone lose their job or have their pay reduced? Workers who expect to be hurt by a change will often find very good ways of making sure that it does not work very well. You need to do two things: avoid any negative impact on workers; and make sure that they know they have nothing to fear.

The following steps help to make sure that changes are accepted:

- Make it known that no one will lose their job, have their pay cut or otherwise be hurt by the change.
- Explain your plans to the workers and give them a chance to make suggestions.

- Provide any necessary training. Even where formal training is unnecessary, you may need to relax performance standards during a brief period of adaptation to the new situation.
- Issue clear instructions and assign specific responsibilities.
- Show your support for the change by paying close attention to developments, by praising progress, and by reacting to any sign of going back to the old methods.
- Consider incentive pay or other rewards based on performance.
- Make sure that workers know they should report any problems to you and take action if unforeseen difficulties arise.

One of the best ways to introduce change smoothly and effectively is to assign responsibility for it to a group of workers. If workers are part of the process of planning and implementing the change, they can be confident that their interests will be taken into account. They will be able to suggest their own ideas and they will feel responsible for the success of the improvement. They will therefore not only be co-operative, they will monitor the change carefully and propose or carry out any necessary adjustments.

Remember, changes which are accepted by the workers will be implemented more smoothly. Information about what you are trying to do is very important for the workers' loyalty and motivation.

Make improvements which will last

Even simple and immediately productive ideas are not always followed. Old habits are strong, and they do not die easily. There are two basic strategies which help to make sure that improvements are smoothly introduced, effectively implemented and lasting:
- Change people's habits and behaviour.
- Build the change into equipment and facilities.

For most changes you will need to do both to be successful.

If you follow the advice in the previous section on mobilising worker support, you will do a great deal to make sure that your workers are ready to change. The points on management of improvements in the next section will help you to monitor the changes in behaviour and to take any necessary corrective action. These steps are very important, but for many types of change they are not enough to see that your objectives will be met.

Reconsider the handling problem illustrated in figure 149. There are several ways to build the change into the equipment and facilities. The most obvious ones concern designing and constructing the pallet and cart, repairing the floor and clearing the
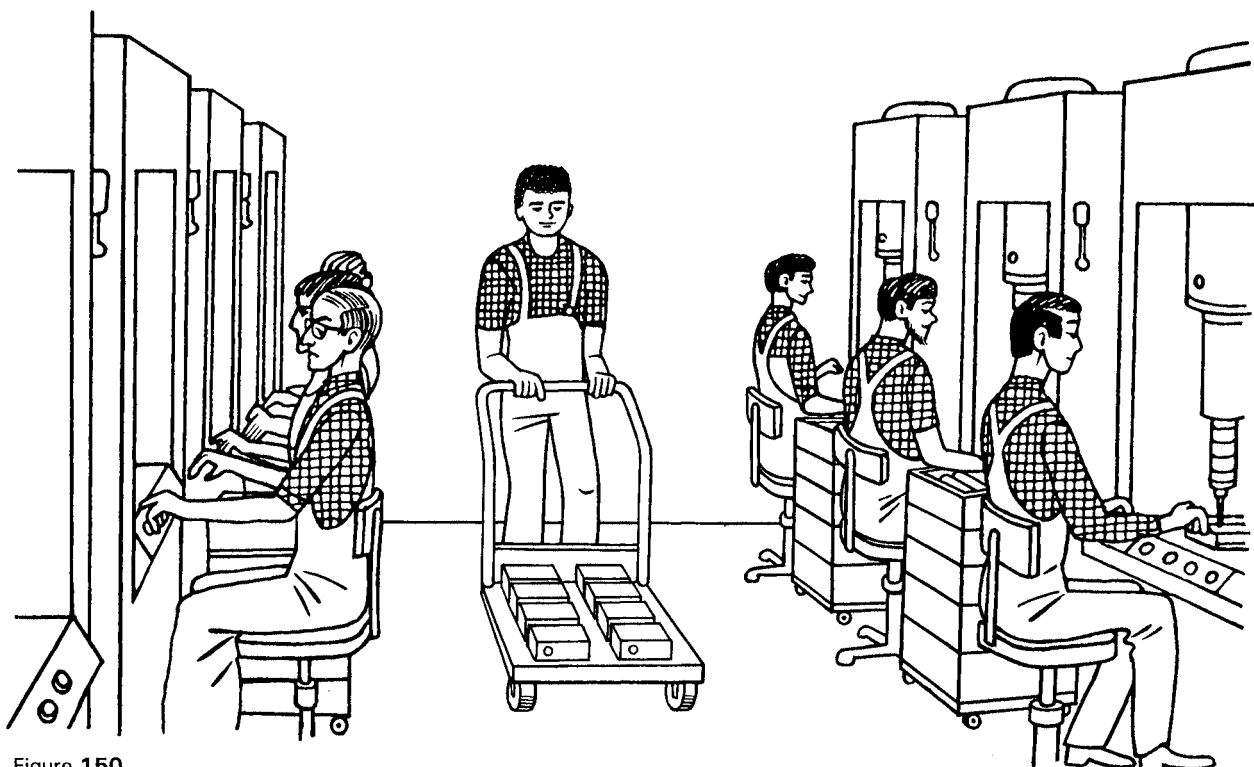
Figure **150**

Moving the same work-pieces with a cart. What different actions were necessary to make this solution work?

passageways. It may also be necessary to pay attention to storage arrangements or to provide a place for the cart close to the work-station. You may find that two carts are needed, or several pallets. None of these steps, however, will prevent the passageway from getting cluttered, nor will they guarantee that the new method will be easy to use. That is why it is suggested that you paint stripes on the floor to indicate passageways, storage areas and work-stations clearly. It may even be necessary to set up barriers to make sure that the passageways stay clear.

Here are some ways to build changes into equipment and facilities:
- Remove any tools or equipment which make it possible or easier to return to the old situation.
- Build the improvement into machines so that it cannot be removed.
- Design new or modified equipment so that it is easier to use and maintain in the new way.
- Provide barriers, painted lines, bins, or make other changes which make the improvement easily visible and natural to follow.

Manage change

If nothing new ever happened, management would be easy. Instead, change is constant. You have to respond to orders, improve your products, overcome problems with raw materials and equipment, train new workers and in general cope with many challenges every day. Some managers run from one problem to another and never develop any real strategy. Others are able to go beyond their problems, and can build a real management system which generates constant improvements in their workplaces.

This book offers you the opportunity of improving your management skills. Don't waste the opportunity.

Supervise improvements carefully

Each individual improvement is a challenge to your consistency and determination as a manager. If you pay no attention to what is happening to the improvement, everyone will quickly understand that it is not important to you.

One way to ensure that you will not delay completing an improvement and forget about it is to establish a *firm deadline* and clearly announce it to everyone concerned. It is especially important that the deadline is not a general intention but the same kind of commitment you would give to completing an order on time.

It is important that you *make someone responsible* for completing the improvement. If no supervisor or worker knows that the improvement is clearly their responsibility, then everyone may wait for someone else to do the job. In addition, there will be no one with an incentive to get work started and monitor progress.

Of course, most changes which are worth making will require some workers' time, some materials and perhaps some purchases. You should *allocate adequate resources* to get the job done.

Once the improvement has started you should request *regular reports on progress* from the person responsible. This will enable you to take corrective action if necessary and it will make sure that the improvement is not forgotten.

After the improvement is completed and is in operation you should *check* to ensure that it works well. It is also important to see that the change is accepted by the workers and that it has no unexpected results.

You should make sure that, throughout the improvement process, you and your supervisors *lead the way* by strictly following the new rules and by frequently praising workers who respond correctly to the improvement.

Make improvement a systematic process

Once you have the experience of making a few improvements, you will begin to see the potential for developing a systematic, dynamic approach to the management of change. Each improvement tends to lead to new possibilities. Improvement can become a habit, with everyone trying to find a better way of working. The implications for productivity and motivation are very powerful.

Improvement requires ideas. If you are working with a group of other factory owners and managers, you know how valuable the exchange of ideas and experiences can be. With other entrepreneurs, you can try:
- visits to other factories;
- productivity and training centres;
- employers' organisations, trade associations and chambers of commerce;
- government agencies.

All of these are useful sources of ideas and technical information. The best source of information, however, is already in your factory. Your workers can help you a great deal. Many advanced organisational ideas, such as quality circles, are based on using workers as a constant source of ideas for improvement.

Some entrepreneurs do not like to ask questions of their workers. They feel that it is the manager's job to decide what to do, and the worker's job to do it. There is much truth in this. The boss must remain the boss. You will find, however, that asking the opinion of workers does not reduce your authority or responsibility for decisions. Instead, it gives you the information you need to make better decisions. At the same time, it gives workers a feeling that they have something to contribute to the company, which increases their loyalty and motivation.

You will only get ideas from your workers if you make it clear that you want their ideas. The following steps are effective ways of doing this:

— Hold a meeting during company time. Explain your goals to the workers (you may find it very useful for yourself to spell out your goals). Make it clear that they have a stake in your company and that they will benefit if your company succeeds. Their jobs and their wages depend on your profits.

— Make it easy for the workers to give you their suggestions. Set aside a time when you are available. Walk through the workshop and ask questions. Listen carefully to the answers. Don't criticise. Thank anyone who makes an effort.

— Above all, *take action* on suggestions in a very obvious way. Even if the first suggestions do not seem very interesting, give them a try. The workers will be watching to see if you sincerely intend to pay attention to their advice.

You can also let a group of workers fill out the checklist, discuss the results and present you their conclusions. None of the ideas on the checklist are dangerous. They have been carefully chosen to save you money and raise your productivity. Why not give your workers a chance to get interested in these goals?

Take action

Now is the time to act. The annex that follows is a worksheet which summarises this chapter. Take it and a copy of the checklist onto your shop-floor, and start the process of making your enterprise more productive and a better place to work.

Summary
Rules for successful implementation of improvements
Develop a complete solution
Make sure your ideas will work
Mobilise worker support
Make improvements which will last
Manage change

Annex: Summary of Chapter 11

How to implement improvements

Don't waste your time and money implementing important improvements in a careless way. Even simple improvements often fail because of a lack of foresight and planning. This guide gives five simple rules that will help you to be successful. In addition, they will help you to make improvements happen frequently instead of stopping after three or four have been completed. Continuous improvement is the road to survival and growth.

Develop a complete solution

Improvements sometimes don't work because they are incomplete. For example, if you want to use carts, you should take a look at the shop-floor. What additional changes may be necessary to make the improvement work well:

☐ in materials storage and handling? _____

_____

☐ in work-station design? _____

_____

☐ in productive machine safety? _____

_____

☐ in control of hazardous substances? _____

_____

☐ in lighting? _____

_____

☐ in welfare facilities? _____

_____

☐ in premises? _____

_____

☐ in work organisation? _____

_____

_____

Make sure your ideas will work

Very often, even improvements which seem simple do not meet your expectations in practice. Anticipate design problems and make sure that all important factors have been taken into account. Ask yourself what makes you believe that this improvement will work well:

☐ because you have tried out different ways of solving the same problem and this one works best.

☐ because you have tried it out in a small way and it works well.

☐ because you have seen it work in the same conditions in another enterprise.

☐ because you have the advice of someone who has done the same thing.

☐ because _____

_____

If you are not sure that this idea for improvement will work best, what steps will you take to find out? _____

_____

_____

_____

Mobilise worker support

Your programme of improvements will fulfil your expectations only with the good will and support of those who are directly affected by the changes. Your workers will be on your side if they fully understand that the changes are in their interests as well as yours.

Are you sure that the improvement will not cause any problems for your workers? Ask yourself:

Who will be directly affected by this change?	In what ways will they be affected?	
	Positively?	Negatively?
_____	_____	_____
_____	_____	_____
_____	_____	_____

What will you do to eliminate or reduce negative effects?

_____

_____

_____

In order for workers to support what you are doing, they need to understand your intentions. They may have the idea that the changes will affect their job security or pay or make their work more difficult.

What techniques will you use to make sure that your workers are ready for the change and that they give you credit for what you are doing?

☐ Prior explanation and discussion.
☐ Involving workers in the design and introduction of the improvement.
☐ Showing how this innovation works in another shop or factory.
☐ Provision of additional training.
☐ Financial rewards.

Make improvements which will last

Four innovations out of five eventually disappear because no specific actions were taken to make them last. There are two main strategies which help to counteract this:
- Change people's habits and behaviour.
- Build the change into equipment and facilities.

For most changes you will need to do both to be successful.

If you follow this method carefully and involve workers fully, you should make much progress in changing workers' habits and motivation. However, if the improvement is fully dependent on the behaviour of the worker (for example, the use of protective goggles when sharpening tools on a grinder, or preventing the cluttering of passageways), it is very likely that it will not last long. Old habits are very strong. To prevent this, we have to find ways to incorporate the change into machines and facilities, so that the equipment itself would reject the old routine (for example, install a permanent transparent screen on the grinder, or provide storage racks and bins, or clearly mark passageways).

Which steps will you take to make the change last by building it into your plant and equipment?

- [ ] Remove any tools or equipment which make it possible or easier to return to the old situation.
- [ ] Build the improvement into machines so that it cannot be removed.
- [ ] Design new or modified equipment so that it is easier to use and maintain in the new way.
- [ ] Provide barriers, painted lines, bins, or make other changes which make the improvement easily visible and natural to follow.

- [ ] _____

Manage change

Be sure that changes will be effectively implemented. Foresee the following steps:

- [ ] Establish a firm deadline.
- [ ] Make someone responsible for implementation.
- [ ] Allocate adequate resources (time, materials, money).
- [ ] Request regular reports on progress.
- [ ] Check that the implemented improvement works well, is accepted by the workers and has no unexpected results.
- [ ] Make sure that you and your supervisors lead the way by following rules and by frequently praising workers who respond correctly to the improvement.

An important management responsibility is to make sure that improvement becomes a permanent part of the way work is done. Ask yourself:
- Do you receive a constant flow of ideas from your staff and workers?
- Is everyone in search of ways for more productive or higher-quality work?

Each individual improvement is an opportunity to become a real manager of change. The following steps will help to make your company more dynamic. How many will you take?

- [ ] A suggestion scheme with rewards for the best ideas.
- [ ] Regular meetings at which workers are encouraged to explain their problems and give their ideas.
- [ ] An exercise in which groups of workers use the checklist and make proposals to you.

- [ ] _____

Other ILO publications

Introduction to working conditions and environment
2nd impression, edited by J.-M. Clerc

Working conditions and the working environment in many parts of the world can only be described as alarming, for the lives, health and welfare of millions of workers are at stake all the time. This book has been designed to meet the need for a wide-ranging introductory volume embracing the main aspects of occupational safety and health and general conditions of work. By attempting to disseminate knowledge and information as widely as possible, the ILO is expressing its clear conviction that this is a task in which all must participate — not only experts but also governments, employers and workers.

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This unique compilation of 127 "ergonomic checkpoints" identifies simple and inexpensive solutions to ergonomic problems in a variety of workplaces and local situations. The checkpoints, which can be used to check working conditions or workplace plans, cover storage and handling, hand tools, machine safety, workstation design, lighting, premises, hazardous substances, welfare facilities and work organization. Each checkpoint is illustrated, and a complete ergonomic checklist is included.

ISBN 92-2-109442-1   25 Swiss francs

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ISBN 92-2-109518-5   To be published soon

Major hazard control: A practical manual
Fires, explosions and the release of toxic gases can cause deaths and injuries to workers and the public, and can adversely affect the environment. Disasters that have come to be known as "Basel", "Bhopal", "Chernobyl", "Flixborough", "Mexico City" and "Seveso" have given rise to the term "major hazards". The prevention and control of such hazards have become a subject of public discussion in all parts of the world. This comprehensive, practical manual is a response to that pressing issue. With the increasing production storage and use of dangerous substances, there is a need for a well-designed and systematic approach to the prevention and control of major hazards if disasters are to be avoided. The manual deals with the safety aspects of siting, planning, design, construction and operation of plants, explains how to identify major hazard installations and describes all the components of a major hazard control system. Extensive information is provided on planning for emergencies both on site and in the community.
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An ILO code of practice
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ISBN 92-2-109451-0.   20 Swiss francs

Prices subject to change without notice.

International
Labour
Office

WISE-R

More
Work Improvement in Small Enterprises

WISE-R Action Manual

Developed and piloted within the ILO/DANIDA project:
Improving Job Quality in Africa through concerted efforts by Government, Employers and Workers

Conditions of Work and Employment Programme

Foreword to WISE-R

Good working conditions provide the foundation of productive and successful enterprises. The *Work Improvement in Small Enterprises (WISE)* methodology is an established and much appreciated ILO training approach that encourages and support efforts by entrepreneurs and managers to improve both working conditions and productivity in their enterprises.

This *WISE-R Action Manual*, and the modules within it, extends the reach of *WISE*. It applies the *WISE*, action-oriented and low-cost approach to working condition issues that are, in some ways, more complex than those covered by the original *WISE* modules. Whereas *WISE* focused largely upon improving the physical workplace environment, *WISE-R* addresses issues that go beyond this, but are equally fundamental to the success of every enterprise.

WISE-R Module 1 explains the notion of 'productivity', how it is measured and the factors that influence it.

WISE-R Module 2 provides practical tips on managing and motivating staff

WISE-R Module 3 looks at how enterprises can make the most of working time, to avoid accidents and waste due to fatigue, to reduce costs and risks relating to overtime and night work, and to ensure a healthy and productive working pattern.

WISE-R Module 4 deals with managing wages and workplace benefits to ensure that the enterprise can attract and retain the best employees. This module includes information on different ways of linking pay to work done, how to set and structure wages, ideas for motivating incentives, and guidance on practical wage administration.

WISE-R Module 5 addresses the challenges that entrepreneurs and workers face in balancing their family and work responsibilities. It provides a range of practical suggestions on simple and low-cost measures that small and medium enterprises can adopt, to provide flexibility and support for workers with caring responsibilities and, thus, maximize their workplace productivity. This module also explains the importance of maternity protection in the workplace, and sets out the measures that enterprises can implement to protect and retain workers during pregnancy and after the birth of their child.

WISE-R Module 6 highlights the impact that workplace relations, particularly harassment or bullying, can have upon productivity, and provides suggestions for measures that can be taken to avoid problems and promote a positive and respectful work environment.

WISE–R is a natural extension of the original *WISE* manuals. It reflects the global recognition that the employees of a business are often a business's most significant asset, and that their performance holds the key to a business's success. *WISE-R*, therefore, takes on the issues that are central to employee recruitment, retention and motivation, and to maximizing individual productivity in a safe and healthy way.

In the *WISE-R* modules, business owners and managers will find valuable guidance and advice, together with practical ideas, for improving business management practices and increasing productivity. Furthermore, the *WISE-R Action Manual* (and the *WISE-R Trainers' Guide*) has been devised so that it can be used by WISE-R training participants, typically entrepreneurs, managers, labour inspectors, local government officials, supervisors and workers, both during training and as a reference point thereafter.

At the heart of *WISE-R* is the *WISE-R* Checklist, which is included in this binder with the *WISE-R Action Manual*, and in the *WISE-R Trainers' Guide*. Those who are familiar with WISE will know that the Checklist is an invaluable tool that facilitates the identification of good local working condition practices, as well as the identification of those areas where improvements could be made and productivity benefits achieved.

Guidance on delivering *WISE-R* modules, using the *WISE-R* Checklist, preparing Action Plans, and on ensuring essential follow-up work, are included in the *WISE-R Trainers' Guide*, which is incorporated into the companion *WISE+ Trainers' Guide* binder.

> The WISE-R modules and *Trainers' Guide* were developed in the course of an ILO eighteen-month long project (2008-2009) on *Improving Job Quality in Africa, through concerted efforts by Governments, Employers and Workers*. This project was supported by Danish International Development Assistance and carried out in Mozambique and the United Republic of Tanzania.

International
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WISE-R

More
Work Improvement in Small Enterprises

WISE-R Checklist

Conditions of Work and Employment Programme
**Improving Job Quality in Africa through concerted efforts by Government,
Employers and Workers**

WISE-R Checklist

WISE-R Module 1: Understanding productivity

Checkpoint 1: Assess how efficient your business is by working out the productivity ratio.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 2: When you are looking for ways to improve productivity, think long term and don't automatically try to make savings on wages.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 3: Remember that your workers are not just a cost, but a business asset that can greatly affect your productivity.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

WISE-R Module 2: Managing and motivating workers

Checkpoint 4: Perform a job analysis and elaborate a job description to help you to find workers with the right skills for the job.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 5: Offer workers the opportunity to be trained, and so increase the skills available in your business.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 6: Make sure that new workers are introduced to your business culture, practices, and rules.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 7: Make sure that workers have the tools they need to do the job.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 8: Be clear with workers about what you want them to do and the results you expect.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 9: Give workers as much control as possible over the way they carry out their tasks.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 10: Give workers professional responsibility for tasks, and acknowledge this in pay and/or in thanks.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 11: Plan ahead for absences by preparing junior staff to take on delegated tasks.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 12: Give praise when it is due and never deliver criticism in public.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 13: Organise regular meetings with each employee to give them feedback and orient them in their work.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 14: Have a clear discipline and grievance policy and make sure that managers, supervisors and workers, understand and apply it.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

WISE-R Module 3: Effective management of working time

Checkpoint 15: Avoid wasting time and resources by planning for production and delivery timelines, including advanced planning on staffing needs.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 16: Have a regular schedule for maintaining equipment, so that you avoid accidents and breakdowns.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 17: Provide job-specific training to boost expertise and efficiency.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 18: Make sure all workers get enough rest time during their working day, in between their shifts, and at the end of their working week.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 19: Provide a place for workers to rest, away from their work station and with access to drinking water and toilets.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 20: Avoid or minimize the use of irregular and unpredictable shift schedules.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 21: Minimize the use of night work and, when it is necessary, make it safer by providing supervision and adjusting the lighting and temperature in the work environment to be similar to daytime.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 22: Introduce flexible working time arrangements that will help your workers to balance their responsibilities and boost your productivity.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 23: Limit the use of overtime, especially on extended (e.g., 12-hour) shifts. When overtime is used, provide advance notice to workers.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 24: Be clear with each worker about their normal working hours, their pay, and what pay rate they will receive for overtime work.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 25: Consult with workers on the design of working time in your enterprise, and listen to the feedback they give you.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

WISE-R Module 4: Managing wages and benefits

Checkpoint 26: Be clear, fair, and consistent, when you decide what you will pay your employees.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 27: Create an organizational chart with everyone, including you, on it.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 28: Prepare a comprehensive job description for each job.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 29: Rank jobs by comparing the skills they involve and their importance to YOUR business.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 30: Do not pay any worker less than the minimum wage in your country.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 31: Give every job a pay range, so that workers have the chance to improve their pay over time, even if they stay in the same job.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 32: Consult on your pay structure and pay levels with your workers and their representatives.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 33: Adjust wages periodically in order to improve or, at least, maintain workers' standard of living.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 34: Be sure to give all workers feedback about their performance and what they can do to access or compete for cash and non-cash rewards.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 35: Keep good records on work done and wages paid, and develop an easy-to-read wage slip, so that workers can check their pay calculation with you.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 36: Get maximum impact from your wages and benefits program by communicating it clearly to workers.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

WISE-R Module 5: Family-friendly measures

Checkpoint 37: Consult your workers on their family responsibilities and the difficulties they might have balancing these with workplace demands.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 38: Arrange working hours with workers' family responsibilities in mind.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 39: Consider work sharing and job rotation to allow workers to fill in for each other when someone is absent.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 40: Inform your workers about all of the types of leave that you provide.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 41: Plan ahead for leave, so you avoid stoppages or interruptions that can cause a loss of productivity.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 42: Provide all workers with maternity and paternity leave, and the right to a similar job at the same pay when they return.		
Do you propose action?		
❑ No	❑ Yes	❑ Priority
If yes, what action?		

Checkpoint 43: Carry out a risk assessment (including exposure to chemicals) and discuss it with your workers.		
Do you propose action?		
❑ No	❑ Yes	❑ Priority
If yes, what action?		

Checkpoint 44: Take action to remove identified risks.		
Do you propose action?		
❑ No	❑ Yes	❑ Priority
If yes, what action?		

Checkpoint 45: Ensure ready access to safe drinking water and to clean toilets, at any time, without restrictions.		
Do you propose action?		
❑ No	❑ Yes	❑ Priority
If yes, what action?		

Checkpoint 46: Accommodate or reassign pregnant workers to tasks that do not require continuous standing, uncomfortable movements/postures, heavy physical effort or risk of slipping and falling.		
Do you propose action?		
❑ No	❑ Yes	❑ Priority
If yes, what action?		

Checkpoint 47: In addition to normal breaks, allow at least one 1-hour break for breastfeeding mothers.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 48: Provide a clean and quiet area for breastfeeding or expressing milk.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 49: Help workers get information on mother-to-child transmission of HIV.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 50: Offer practical support to workers with family responsibilities.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 51: Create partnerships so you (and other small businesses) can help workers with care arrangements.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

WISE-R Module 6: Create a respectful workplace

Checkpoint 52: Develop (in consultation with your staff) a written policy for promoting a respectful workplace, including a fair procedure to resolve complaints of harassment.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 53: Designate a person or persons trusted by you and your workers to be a focal point for harassment complaints.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 54: Avoid HIV/AIDS discrimination by workers and management, by developing and implementing an HIV/AIDS policy for the workplace.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

Checkpoint 55: Remove all suggestive or provocative photos, posters, and other items from display in the workplace.		
Do you propose action?		
❏ No	❏ Yes	❏ Priority
If yes, what action?		

WISE-R

More
Work **I**mprovement in **S**mall **E**nterprises

Module 1

Understanding Productivity

Introduction

To support the growth of your business, it is important to be able to analyze how your business is performing. You also need to understand what makes it grow, including the impact of management actions, workplace organization, and enterprise policies, on business performance.

The idea of productivity, and how to improve it, is a central theme throughout WISE-R and later modules will introduce you to many specific business practices, all chosen because they have a positive impact on enterprise productivity. But what is productivity, how is it measured, and why is it so important?

This introductory module on productivity will address these questions so that you can get the most out of WISE-R.

The objectives of this Module:

a) To explain what productivity means

b) To enable you to calculate the productivity of your enterprise

c) To highlight the impact that different workplace practices and policies can have on your productivity

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Measure your Productivity

The advantages for your business

If you really want to improve your productivity, you first need to understand what productivity is and what factors can influence it. The next step is to find out what your present productivity is – how well your business is doing. Once you have done these things, you will be in a good position to work out how much you want to (and can) improve your productivity, and how to achieve that improvement.

What you can do

1. Understand and measure business productivity

1.1. Understanding Productivity

The term 'productivity' is used at many levels. It is possible to measure the productivity of a country, an organization, a business, a team or an individual person. In WISE-R, when we talk about productivity, we mean the productivity of your business.

> Productivity is a measure of output from a production process, per unit of input.

Once you know how to calculate the productivity ratio of your business, you can, for example, compare your productivity to that of other businesses. You can also track the change in your productivity over time (you can calculate it monthly or annually: is it going up or down?). If you find that your productivity has gone down, you will know that there is a problem that needs your attention.

Whenever you bring in new measures, such as a new working-time schedule, you can also use this measure to monitor the impact of the change on your productivity. However, you always need to remember that there are many (some hidden) factors that influence productivity.

> **Checkpoint** 1: Assess how efficient your business is by working out the productivity ratio.

1.2. Measure your productivity

When we talk about productivity as a figure, we usually call it the 'productivity ratio'. To find out your enterprise's productivity you need to calculate your "productivity ratio" by comparing all of the costs involved in producing and selling your product (input) with the amount of money you sell the products for (output).

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

Steps for measuring productivity:

1. Determine the relevant period;

2. Calculate your total costs (input);

3. Calculate your total revenue (output);

4. Calculate the productivity ratio.

First of all, you will need to identify the period for which you want to perform the calculation. If you want to calculate your productivity for one year, you will need to look at the costs and sales over that year. If you are doing a monthly analysis, you will need the figures for one month. It is most important that you compare input and output figures for the same period.

Start by identifying your costs (input). Some common costs are:

- recruiting and training workers
- buying stalls, machinery or computers
- renting land or buildings
- buying raw materials
- advertising
- your wages and those of your employees (SMEs often forget to include the wage of the manager/business owner)

Calculate **your output**, which is the total value received for your sales.

Let's take Shoemaker A as a simple example:

Shoemaker A spends 1000 coins on her business in a year (including his earnings). She produces 500 pairs of shoes in that time, and sells each for 3 coins. She sells them all, so she receives 1500 coins.

So, she has increased her earnings by 1/2.

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}} \longrightarrow \text{Shoemaker A's productivity} = \frac{1500 \text{ coins (output)}}{1000 \text{ coins (input)}} = 1.5$$

If she does the same sum next year and the number is higher, she will know that her productivity (and her profit!) has gone up.

Now look at Shoemaker B:

Shoemaker B produces the same shoes as Shoemaker A, but spends 1500 coins on her business in a year to produce the same number of shoes – 500 pairs. She sells each pair for 3 coins. She sells them all, so she receives 1500 coins as well.

$$\text{Shoemaker B's productivity} = \frac{1500 \text{ coins (output)}}{1500 \text{ coins (input)}} = 1$$

You can see that the productivity of Shoemaker B is lower than Shoemaker A, as her costs are higher. Why is this? It might be because Shoemaker B pays more for raw material, or maybe she has a high turnover of workers (they don't stay long) and she needs to spend more on advertising and training new employees?

Now let's look at what happens when Shoemaker A decides she wants to increase her business productivity:

Shoemaker A decides to invest in a new machine so she produces more shoes in a shorter time. Unfortunately, she forgets to provide training for workers on how to operate the new machine and some accidents and errors occur!

Shoemaker A manages to produce more shoes, say 2500 pairs, and sells them at the same price as before. So, she receives 7500 coins for her production (output). She is pleased because there is more money coming in to her business. But, when she again calculates her costs, she finds out that they have gone up too. Her investment in the machine, higher electricity bills, higher waste, and the payments she has had to make for injured/absent workers mean her costs are now 7500 coins.

Let's look at Shoemaker A's new productivity:

Though the shoemaker's income increased from 1500 to 7500, her productivity fell from 2 to 5. This means that that for every coin she has spent, she now only receives 1 in return.

You can immediately see from this how important it is for you to recalculate your productivity rate at intervals, so you can see what is happening in your business and take appropriate measures.

$$\text{Shoemaker A's productivity } = \frac{7500 \text{ coins (output)}}{7500 \text{ coins (input)}} = 1$$

2. Look for ways to increase your productivity

If the amount you earn from the goods you produce (output) goes up in comparison to the costs of producing them (input), your productivity increases and so do your profits. This is a target for most businesses.

> **Checkpoint 2:** When you are looking for ways to improve productivity, think long term and don't automatically try to make savings on wages.

To increase productivity, you have two basic choices:
- Reduce the production cost per product (input): OR
- Increase the amount you get for your product (output)

Workers are able to maximise productivity when they have the training, equipment and the raw materials they need to do their job.

2.1. No 'quick fixes'

As a business can not just put up its prices (because buyers would go to competitors to purchase the goods), it is common for business owners to try to increase productivity by looking for quick ways to reduce their costs (inputs).

Some examples include:

✗ Buying lower quality raw materials

✗ Not servicing machinery

✗ Speeding up production by removing machine guards

✗ Using untrained workers (or children) as cheap labour

✗ Paying lower wages and demanding long hours of work

This is definitely not the answer.

If you use poor quality raw materials, broken machines, and untrained, underpaid workers:

● the amount you produce and the quality of your product will go down;

● the amount you can charge for your product will go down;

● workplace accidents and production stoppages will go up.

QUICK FIXES	LONG TERM
– cheaper raw material – untrained staff – not servicing machines – demanding long hours	– fair & clear wage & incentives – training for staff – improved maintenance – better working time arrangements
lower quality more accidents & errors	improved quality less accidents & errors
⇨ More costs at long term ⇨ Less revenue (due to lower quality)	⇨ initial small investment ⇨ major increase revenue (due to higher quality) ⇨ Improved rate of production
LOWER PRODUCTIVITY	MORE PRODUCTIVITY

Adults need to work, and are more productive and motivated than children, who need the chance to learn and play. If your children work instead of going to school, research shows that there chance of getting a well-paid job in the future is very low and their health can suffer, because the work they do is bad for growing bodies or because they don't understand the dangers in the workplace.

SAY NO TO CHILD LABOUR

This business has a clear policy of not using child labour

2.2 Think long term!

When thinking about new measures to improve your productivity you need to think about its impacts, in the LONG term as well as the short term. Remember that long term improvements will bring the most benefit to your business.

Human resources are often the most important **asset** of a small or medium-sized businesses, which typically have low property assets and capital. Managing these human resources can, therefore, have a major impact *(positive or negative!)* on productivity.

Unfortunately, staff costs (wages, training, leave, etc.) are also a significant cost for most businesses. So, to reduce their overall business costs, and forgetting that staff are also a business asset, employers often make changes to their wage structure (to reduce the total wages they pay).

This type of action can have a positive effect on costs (and so, on productivity) in the short term. But, it generally increases costs in the long term, as it results in:

- the loss of experienced workers
- higher turnover and recruitment costs
- low motivation
- lower quality products
- inefficient and inconsistent production
- unhappy customers

By putting a low value on your workers, you will reduce the value of your business.

Does low pay mean higher profits?

Consider the following scenario:

Well-suited, well trained, and motivated worker earns 100	→	Worker produces 100
Less-suited, poorly trained and less-motivated worker earns 50	→	Worker produces 40
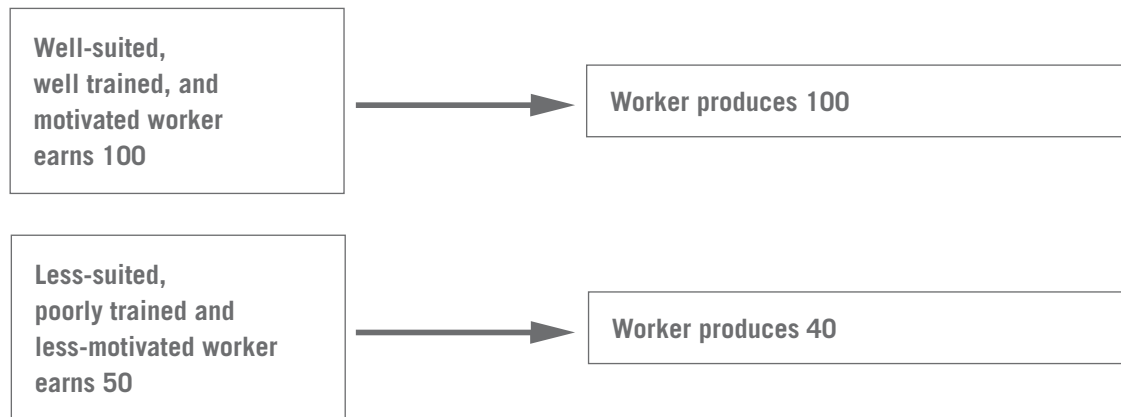
2.3 Invest for long term growth

Business productivity, like all good things, takes time and care to grow.

In the text box you will see some recognized factors that contribute to increased productivity. By introducing good workplace policies and employee management practices, you can achieve a major improvement in most of these areas.

Introducing a well-designed pay structure or a better shift pattern might, in some cases, result in an increase in your wage bill, at least in the short term. But this does not mean that your business costs will necessarily go up. You might, for example, find that the change results in lower recruitment and training costs and reduces sickness absences. This could mean that overall costs remain the same, whilst business output increases – higher productivity!

Factors that improve productivity
- Quality of output
- Efficient work processes
- Workers' motivation
- Innovation
- Good working conditions
- High worker attendance
- Training
- Quality of management
- Lower worker turnover

**Adopt good human resource management
for long term productivity increases**

Experience and research has shown that investing wisely in human resources increases worker performance and productivity. Unfortunately few managers of SMEs have experience with human resource (HR) management.

Checkpoint 3: Remember that your workers are not just a cost, but a business asset that can greatly affect your productivity.

In the following chapters you will be introduced to the key practices that can help you to make the most of your staff, and to increase your productivity and profitability:

Module 2: Managing and motivating workers

Module 3: Effective management of working time

Module 4: Managing wages and benefits

Module 5: Family-friendly measures

Module 6: Creating a respectful workplace

Checkpoints for WISE-R Module 1 Understanding Productivity

Checkpoint 1: Assess how efficient your business is by working out the productivity ratio

Checkpoint 2: When you are looking for ways to improve productivity, think long term and don't automatically try to make savings on wages.

Checkpoint 3: Remember that your workers are not just a cost, but a business asset that can greatly affect your productivity

WISE-R

More
Work Improvement in Small Enterprises

Module 2

Managing and Motivating Workers

Introduction

Running a small enterprise is more than a full-time job, and involves everything from designing and developing the product or service, and selling it, to reporting to authorities, and hiring and training new workers. The list of tasks is endless, but your time is limited, so it is normal that the things that are not seen as 'important' are put aside.

Unfortunately, managing and motivating employees, is often one of those things, because it does not have a deadline attached and it will not (directly) get the bills paid. This module aims to explain why managing and motivating employees should, in fact, be at the top of your priority list!

Experience in both small and large businesses has shown that enterprises that manage and positively motivate employees improve their productivity. This is because motivated employees work harder, stay with the enterprise longer, and take fewer sick days than other workers. They are also more likely to feel a part of your business, to care about the quality of the job they do, and to come up with good ideas that help improve the products and processes.

So, if you give attention to managing your workers, you can expect your productivity to increase, your operating costs (particularly for recruitment and training) to go down, and your work flow to be smoother.

Managing staff and working out how to motivate them is not easy. This WISE-R Module will help you to make a big difference to the way your employees feel and perform, and all at little or no cost to your business. This Module is divided into 7 sections, each section addressing one guiding principle for managing and motivating workers:

1) Hire workers with the knowledge and skills that your enterprise needs
2) Provide training opportunities
3) Control the demands of the job
4) Ensure appropriate supervision, but also be prepared to delegate responsibly to enable workers to learn
5) Be positive and value your workers
6) Treat workers fairly
7) Encourage team spirit through team working, good communication, and by listening to workers.

The objectives of this Module:

- To explain the impact that good management and motivation has on productivity and quality, recruitment and retention;
- For participants to become aware of a range of practical approaches that they can use to improve worker management and motivation;
- To encourage participants to commit themselves to designing and implementing improved management and motivation practices.

Hire Workers with the Knowledge and Skills that your Entreprise needs

The advantages for your business

If you want to get the most from your employees, it is important to match the employee's skills to the individual job that needs doing. This small task is possibly one of the most important things you can do for increasing production, quality, pace and continuity.

What you can do

Checkpoint 4: Perform a job analysis and elaborate a job description to help you to find workers with the right skills for the job.

Use job analysis to help you to identify the best person for the job

Hiring workers is the first and most important opportunity you have to get the right match between the worker and the job. To do this, you need to prepare a job description before you advertise the post. This job description will set out what the job involves and the experience or training the job demands. You can then use this job description to write a profile of the person you need.

1. *How to create a job description:*

➢ Write down a list of the job tasks the worker will do.

➢ Next to each task, or group of tasks, make a note of the skills that the person will need if they are going to do the tasks successfully.

This supervisor and a worker are cooperating to work out what tasks and skills are needed by the assembly-line workers, so they can prepare an accurate job description.

The following items should be taken into consideration when developing a job description:

A. **Education/skills**

- What *education level* is necessary to perform the work?
- What prior *training* is required to perform the job duties at a satisfactory level?
- What *practical work experience* is required to perform the duties at a satisfactory level?

B. **Effort**

- What types of effort, i.e. physical, mental, and/or psychosocial, are involved in each of the tasks, which together make up the total job?

C. **Responsibility**

- What type of responsibility does the job entail e.g. responsibility for equipment, purchases, money, safe-keeping of documents, management of other people?
- What directions are given and what decisions are necessary?
- Does the job involve team and/or independent working?

D. **Working conditions**

- Does the work entail exposure to physical (noise, dust, temperature, health hazards) or psychological factors (isolation, frequent interruptions, simultaneous requests, and aggressiveness of clients)? Does the job involve travelling?

You should write this information in a Job Description. Below you will see the headings that are commonly used:

> a) Job title.
>
> b) Department, division, or area of the enterprise where the work takes place.
>
> c) Supervision requirements and coordination with other people or departments.
>
> d) Role and responsibility.
>
> e) Specific tasks to be carried out.
>
> f) Skills and experience: this is usually the level of education, the training or experience needed). It should include the skills that you want the person to bring to your work team as well as those needed for the particular job, e.g. ability to speak a language.
>
> g) Other requirements. This might include special work requirements such as the willingness to work weekends or to work in a team.

Once you have developed the job description, you can prepare a description or profile of the ideal candidate. The job description and profile together will make it much easier for you to write the advertisement for the job, to come up with interview questions, and to evaluate and select the best candidate.

They will also help you to ignore irrelevant factors, for example skin colour, religion or sex. This is important because if you take these things into account, you are unlikely to get the best person for the job.

2.2
Provide Training Opportunities

The advantages for your business

Training is an opportunity to upgrade workers' knowledge and skills, which enables them to perform their jobs more efficiently. This brings a direct benefit to your business.

As well as improving skills, training improves worker motivation and loyalty. It gives workers a sign that you value them and think they are worth investing in. It can also be the thing that makes you stand out from the rest, as an employer interested in investing in your business, and so help you attract (and retain) the most serious and dedicated job applicants.

What you should know

Checkpoint 5: Offer workers the opportunity to be trained, and so increase the skills available in your business.

Training can be provided through:

➤ Privately run short courses outside or at the workplace

➤ Courses at vocational training institutions or producers' organizations, over a short block of time or longer, e.g. one evening a week

➤ On the job training by your more experienced employees

These catering workers are being reminded to ALWAYS put the guard on a meat slicing machine, as it is very dangerous to use it without the guard.

You can use training to help you to keep your business adaptable and ready to meet new challenges e.g. train supervisors on higher quality-checking standards; train workers on fixing simple machinery problems.

Free training is possible:

➤ If you are planning to use a new machine, you can often negotiate for the provider to give your workers some free training on how to use it.

➤ Some business organizations, government departments, charities and international organizations provide free training.

On-the-job training by experienced workers from your enterprise does not cost anything and can be the best way to learn many manual tasks.

This trainer is training a group of new supervisors.

What you can do

1.   Provide new workers with orientation training:

> **Checkpoint 6:** Make sure that new workers are introduced to your business culture, practices, and rules.

Workers are more productive when they know what is expected of them, so it is important to tell (or show) new workers how your business works including:

➤ The way workers are expected to dress, behave, address each other and customers

➤ Working hours, break and lunch arrangements, how and when they get paid, sickness procedures

➤ Work processes and practices, what is produced and future plans

➤ Opportunities to learn or advance within the enterprise, including training opportunities

➤ Your company values, practices

➤ Who to ask for more information

A new worker is introduced to other workers, on her first day in a new job.

Employee training should, where possible, be offered during the normal working day, so that workers can attend the training and still meet family responsibilities.

An experienced worker explains a job task to a younger worker.

To promote cooperation: Encourage employees to teach each other about their jobs and, where practical, let them swap jobs for a period. Doing this will improve work relations, reduce boredom, and also increase the flexibility that you have to keep work moving when a worker leaves or is absent.

Control the Demands of the Job

As an entrepreneur, you are always under pressure to come up with the next good idea, find the next customer, and sign the next contract. This means that you know how negative you can feel when you are placed under pressure to work harder or quicker, or to do something you simply find boring.

Your employees will sometimes feel exactly the same way about the tasks they have to do, and this can badly affect their attitude to their work and, in the end, productivity. But, with good (positive) day-to-day supervision, and some sound management decisions, you can relieve pressure and boredom and improve productivity.

The advantages for your business

Taking control of the demands you place on workers is mostly about good planning. Good planning will cost you nothing and will help to:

➢ reduce worker stress and increase worker motivation

➢ reduce accidents and mistakes

➢ improve delivery rates and the quality of products

➢ increase business flexibility

➢ improve productivity

If you design the workload and organize tasks correctly, and make sure that you provide workers with the tools they need, your workers will feel confident, valued and trusted: errors will go down and production will go up.

What you can do

You can take action in two areas:

1) Make sure that workers can safely and efficiently do their work

2) Plan the workload correctly: Divide or share work so that motivation and performance are maximized

1.   Make sure that workers can safely and efficiently do their work

✓   **Supply workers with the tools needed to do their job**

> **Checkpoint 7:** Make sure that workers have the tools they need to do the job.
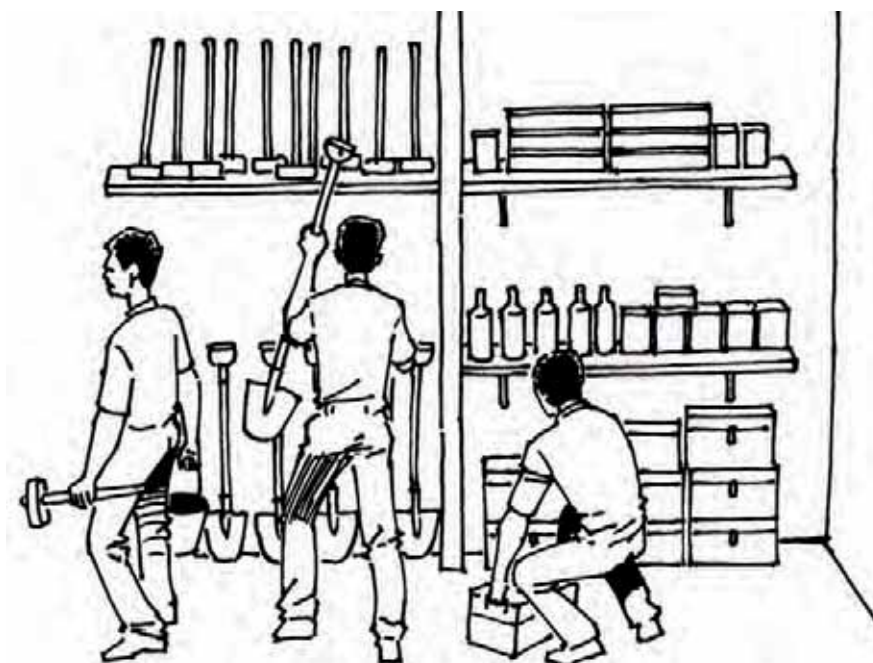
Workers can easily find the tools they need in a well-organized storeroom.

A worker who has the right tools will be in the best position to complete his or her job efficiently and with minimum stress.

So, keep machines, hand tools, computers, and other job tools:
➢ regularly maintained and clean
➢ easily available to workers who need them
➢ safe – with guards on, usage instructions, and protective gear where needed.

(See WISE Module 5 for more information)

> **Checkpoint 8:** Be clear with workers about what you want them to do and the results you expect.

✓   **Be clear about the task and the results expected**
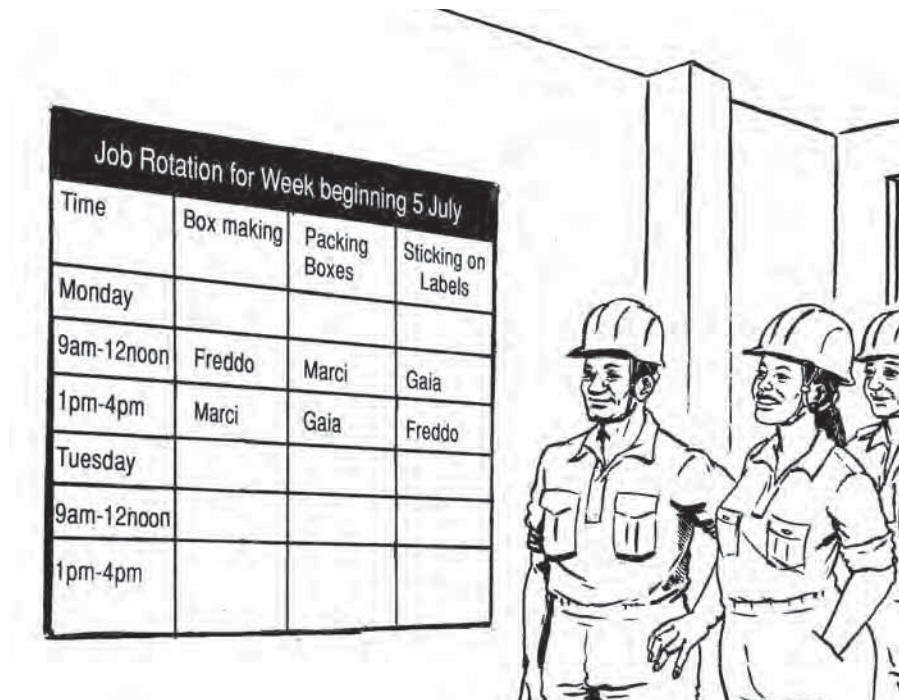
If your workers are not clear on exactly what they are supposed to do, it is almost impossible for them to do it. To avoid this problem you should:
➢ Provide each worker with a job description (see previous section)
➢ Describe new tasks carefully and make it clear that workers can come back to you with questions later
➢ If a worker does something wrong, don't start shouting. Tell them where they have gone wrong and how they can avoid the same mistake again

2. Divide or share work so that motivation and performance are maximized

✓ Reduce repetition

➢ Where possible, get rid of repetitive, monotonous jobs.

➢ Introduce a job rotation system among employees within the same division or department and provide extra training when necessary.

➢ Give workers the chance to perform several work tasks in the production chain, instead of one or a few fragmented work operations.

A wall chart can be used to give everyone advanced notice of which shifts they will work.

✓ Control working time

Controlling working time is a key part of controlling work demands. Later, in these materials you will find a whole module dedicated to this subject (see later).

✓ Give workers more autonomy

Workers who have the power to choose how they do their tasks will generally be more content and loyal and perform better than those who do not because:

➢ they feel more trusted and valued, and are more motivated to meet standards that they set;

➢ it gives them flexibility over when or where they work, so makes it easier for them to carry out their family and social responsibilities (particularly important for parents and carers).

➢ they have the chance to show their wider abilities

Checkpoint 9: Give workers as much control as possible over the way they carry out their tasks.

Flexibility – through flexitime, home-working – is a great way to increase autonomy *(see Module 3 on Working time)*.

Of course, you have customers to take into account: there would be no business without them! You need to maintain quality and you cannot give everyone the freedom to start or finish their work whenever they want to. Another constraint for home working is that most employees need tools to do their job and, often, these are only available in the factory or workshop.

Nonetheless, if you can find ways to satisfy your customers and give workers more autonomy, it will have a positive impact on your productivity.
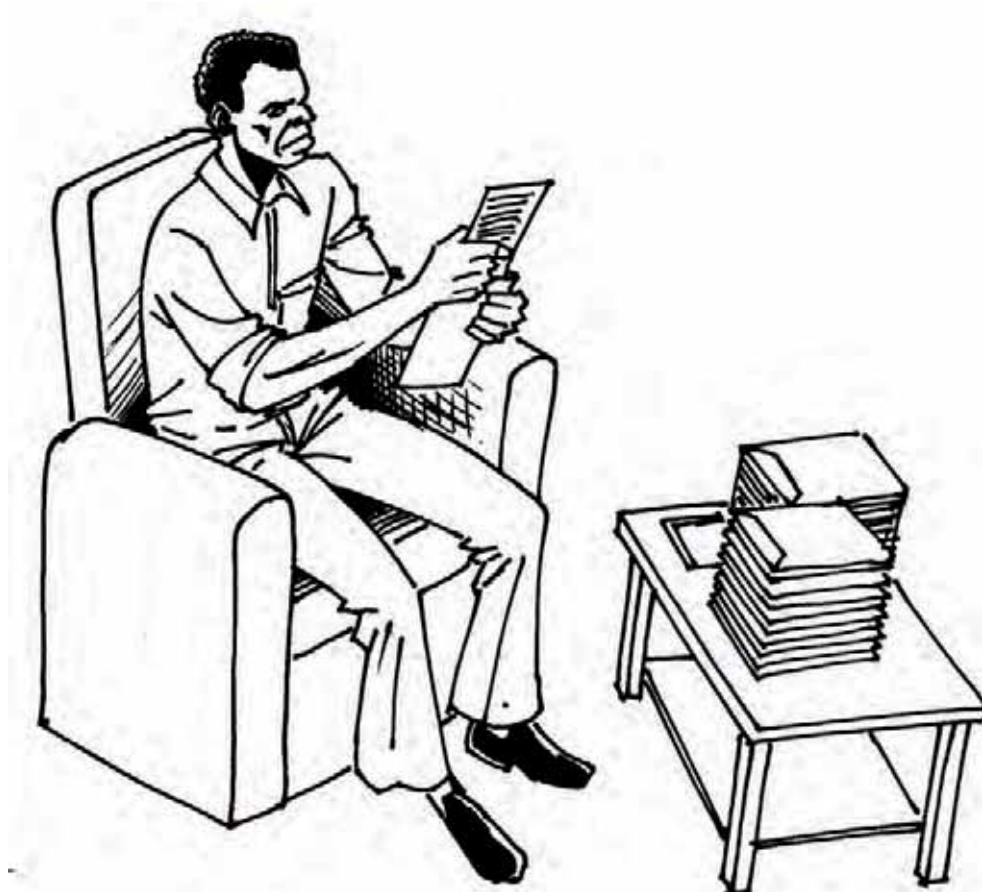
This worker is able to work at home, putting conference invitations into envelopes.

> **To promote cooperation:** Make it possible for workers to swap working hours, shifts or tasks or to pair up to complete jobs together. But be sure to have a system in place for noting the swap, to avoid misunderstandings.

✓ **Some more ideas**

➢ Do a plan of staffing needs for each new job

➢ Introduce flexi-time (see working time module)

➢ Let workers choose when they take their holidays, breaks and lunch

➢ If you need workers to work overtime, particularly at the last minute, always provide workers with the choice (to accept or not).

Ensure Appropriate Supervision

Supervising workers is an important way to maintain safety and health standards, work quality and efficiency. However, the level and style of supervision can make a big difference to the impact it has on productivity. In particular, some workers are able to take responsibility for their own work and strongly prefer to do so.

Getting the balance right on supervision is a real management challenge, but it is worth the effort!

This well-trained supervisor is willing and available to help workers or to deal with production problems.

The advantages for your business

Having the right style and level of supervision will help workers to perform their jobs and to keep production moving.

What you can do

1. Clarify the supervisor's role

The supervisor can be responsible for a team or an area of the workplace and will report to the manager. Being a supervisor is not always easy. Often, supervisors are not considered part of the management team, and yet workers perceive them as being on the side of the management and using their power to report on workers in an unfair way. As a result, the cooperation between workers and supervisors can be very limited, and the role that super-

visors can play in promoting efficient working practices is lost. What's more, inappropriate supervision methods can result in you losing valuable workers.

To get the most out of supervision, it is important that you work with supervisors to define what their role is and the results you expect from them, such as:

Supervisors play an important role in checking product quality and helping workers to improve the quality of their work.

➢ Maintaining performance standards
➢ Identifying training needs
➢ Monitoring working hours and attendance
➢ Controlling shift work
➢ Providing proposals on wage setting
➢ Providing proposals on promotions

You also need to let them know how you want them to relate to staff – in a supportive rather than a threatening manner (see the next section for more on this).

To be absolutely clear, you could make a guide for supervisors setting out clear and comprehensive guidelines for their work and put it on a notice board so it is understood by all workers.

2.   Encourage workers to take greater responsibility when they are ready

> **Checkpoint 10:** Give workers professional responsibility for tasks, and acknowledge this in pay and/or in thanks.

✓   **Give people the chance to 'manage':**

We have already talked about giving workers autonomy over their own work tasks. But what about giving them other responsibilities e.g. for production targets, team results, etc.

Giving people responsibility costs nothing (in fact it can save money) and it often gets the job done to a higher quality, because personal motivation is higher. You also end up with a more confident, stable and more skilled workforce, able to take responsibility when colleagues are away or when you need to spend your time on other things.

You can apply this idea from the top to the bottom of your enterprise. If, for example, you employ a number of cleaners, you can divide up the workshop into zones and give each one a zone, so each has their own responsibility. In time, you could appoint one experienced cleaner to be a supervisor or quality checker. Later, you might ask that person to replace a security guard during sickness and give another cleaner the chance to be supervisor for a while.

Be careful to check that the worker has enough time, skills, and the tools to take on the extra workload (see below).

To maintain motivation, make sure that the fact that a worker takes on extra responsibility is recognized in pay and/or in thanks.

3.   Learn to delegate efficiently (Give someone else some of your work)

Entrepreneurs often complain about the work they or their managers have to do, but are not very good at delegating. This is because delegating is not as easy as it sounds, and involves building up trust and careful consideration/judgments such as:

- What does the task involve?
- Does the worker have the skills?
- Can I trust her/him to do it?
- How much responsibility can the worker take on, alongside other tasks?
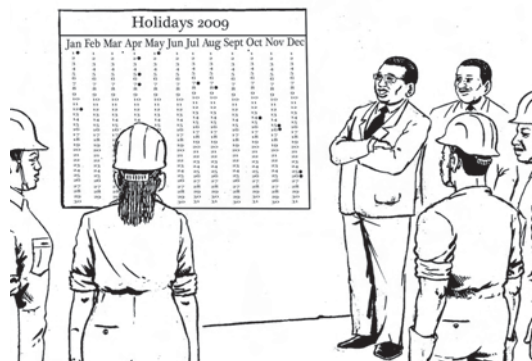
A group of workers and managers look at a leave planning chart.

The need to delegate will often arise because of short term problems (sickness, training, holidays). But these will happen often, so your delegation plan should anticipate these events. So, you should always think long term when planning for delegating.

✓ **It is a good idea to name, in advance, the person who will take over responsibilities in the case of absence (tandem methodology) and to discuss with that worker:**

➤ how the extra work will be managed alongside their other tasks.

➤ what additional training they need.

➤ what additional pay or bonus (if any) they will receive for taking on the extra work.

Checkpoint 11: Plan ahead for absences by preparing junior staff to take on delegated tasks.

Give junior workers the chance to shadow senior workers (or yourself) and to carry out that job when the job holder is around. This will help them to prepare for taking over during absences.

To promote cooperation: Consult with workers or their representative on how delegation will work and in what conditions the extra duties will be paid.

Consulting workers can result in great ideas for upgrading products, organising processes, or managing the workload during staff absences.

Be Positive and Value Workers

Everyone (even you) needs to feel that the effort they put into a job is noticed and valued. Valuing the work of your employees starts with paying the right wages, but it does not end there. There are many other ways to let your workers know that their work has been noticed and that it is appreciated.

The advantages for your business

Paying the right wages will help you to recruit and keep good workers, and so reduce hiring and training costs, improve efficiency and the quality of the work done. Bonuses and other cash incentives complement basic wages and provide a boost to motivation.

But valuing workers is not all about handing over cash. Research shows that praise and guidance make a very positive difference to work performance, whereas complaints and punishments have the opposite effect.

So, if you, and other managers, deal fairly with workers, offer praise when they do a job well, and give practical guidance when needed, you will help to build loyalty, increase staff retention and help to increase productive team work.

Finally, when you give proper support and guidance to workers and a worker still does not work properly, disciplining the worker is easier, fairer, and much less likely to become a cause of grievances or stoppages.

What you can do

A smiling worker looks at his wage slip.

1. Pay workers the right amount

The wages you pay for a job are the first thing that people look at when they see a job advertisement. If the pay is not right, they will not apply to work for you. (See Module 4 on WISE-R Wages and Benefits)

If you choose to pay bonuses, make sure that everyone knows how bonuses can be earned and that everyone has the chance to get one. If not, the bonus will please one worker and de-motivate all the others!

2. Reward workers for their effort in other ways

There are many ways of repaying good work, without handing over money. A few are listed below but you will certainly be able to think of more:

- Giving extra leave
- Promotion
- Training opportunities
- A small gift, such as an engraved plaque, to record long service
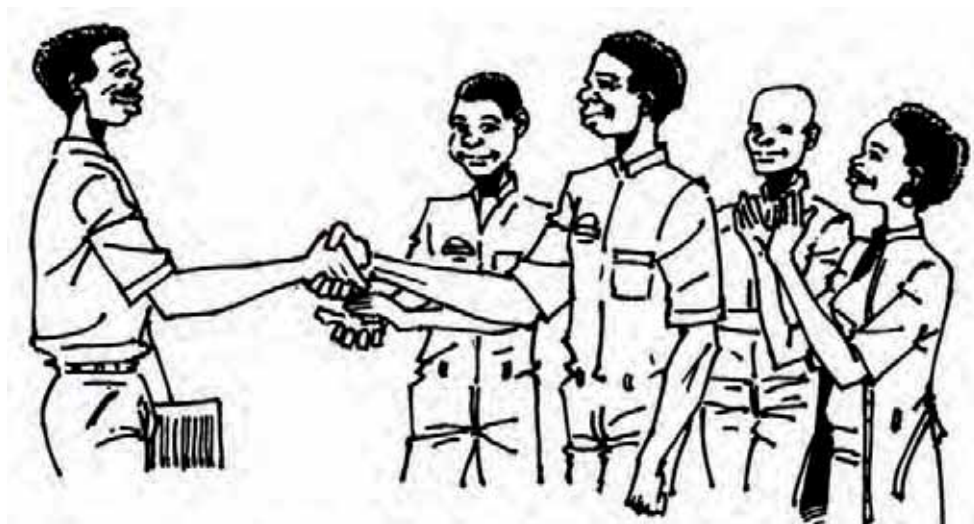
This manager is announcing the promotion of a worker.

3. Be a positive manager and a good communicator

> **Checkpoint 12:** Give praise when it is due and never deliver criticism in public.

➤ Train managers and supervisors and let them know how you want them to behave with workers

➤ Spend time in the workshop: get to know more about your workers and the job they do to build trust and motivation.

> **Checkpoint 13:** Organize regular meetings with each employee to give them feedback and orient them in their work.

4.   Give employees feedback on their job performance:

Have managers/supervisors hold individual meetings with workers to agree achievable targets, provide feedback on work performed, and to note to worker's requests e.g. for training.

5.   Treat workers fairly – read all about this in the next section.

Treat Workers Fairly

The advantages to your business

Employees need to feel that they are being treated fairly when they compare themselves to:

➢ Other workers (especially those in similar jobs) within the enterprise

➢ Other workers in similar jobs in other enterprises in the same labor market

When employees feel that they are not being treated in a fair manner compared to other employees, their motivation goes down.

When employees feel they are not being treated fairly compared to workers in other enterprises, they may even leave your company!

What you can do

Although these workers look different from each other, they do the same job, and should be treated equitably.

1.   Develop sound enterprise employment contract practices

✓   Use short-term contracts only for short term needs

✓   Confirm good workers in their jobs at the end of the probationary period

✓   Make sure that reasons for dismissals are understandable and based on company rules that workers are aware of

✓   Be prepared and plan for justified absenteeism e.g. maternity leave, sick child care or absence related to sickness or injury:

This person has a fever, and needs some time off work to recover.

2. Provide employees with ongoing information about the enterprise

This can be done by displaying notices or briefing supervisors and requiring them to pass the information to workers.

3. Make it possible for carers to combine a good work performance with family responsibilities

Do this by being flexible about working hours or arrangements.

4. Be objective

When you are making decisions, especially about worker recruitment, pay or promotion, it is very important not to let irrelevant things influence you. If, for example, you do not employ a qualified worker because of his or her race, religion, disability or political beliefs, your business will lose out and another business will profit from the worker's skills.

5. Be transparent

✓ **Have a clear discipline and complaints system:**

> **Checkpoint 14:** Have a clear discipline and grievance policy and make sure that managers, supervisors and workers, understand and apply it.

A clear discipline and grievance system is important because everybody – workers, supervisors and managers – knows what will happen, and what procedure should be followed if there is a problem with work performance or behaviour.

This worker is late again! But the manager is careful to talk to him about this privately.

> **To promote cooperation:** Introduce a "no blame" policy for when equipment breaks down or other problems arise. A "no blame" policy means that workers can admit mistakes or point out problems so that they can be corrected quickly. This saves lost time and money, and will help you to maintain the quality of your products.

What you should *not* do

✗ Never use "collective" or group punishments to discipline a single worker.

✗ Never discipline or point to the faults of workers in front of others. This is embarrassing and very de-motivating. Take the worker aside and talk to him or her.

✗ Don't reduce the wages of workers. This is likely to create resentment between you and your workers and it will not be good for workplace relations or productivity.

> **Note that, in most countries, national laws do not allow enterprises to take money out of workers' pay, except in very particular circumstances, such as to pay tax or union fees.**

Encouraging Team Spirit

Team spirit is about improving trust and enhancing cooperation between all the members of your enterprise work team. This includes team working and maximizing communication between workers and managers.

Team work can make a huge difference to productivity and motivation.

The benefits to your business

Team work and good communication boost motivation and performance, because they create;

➢ Increased feelings of being a valued team member

➢ Better knowledge and skill sharing

➢ Improved clarity about what has to be done and the standards to be met and so lead to higher quality products and increased productivity.

➢ Improved problem identification and solving through exchange of ideas across different areas of expertise.

What you can do

1. Remove barriers to clear communication

Barriers to communication	What you can do
Speaking too quickly	Speak more slowly
Using jargon or less common words	Use plain and simple language
Saying something which is offensive to the listener	Be sensitive to personal and cultural differences
Delivering messages via a third party	Try to speak or write directly to the people, if you want them to know.
Mistrust, misunderstanding and/or lack of contact	Spend more time on the work floor and get to know the workers and the jobs they do

2. Encourage teamwork and activities

Some ideas:

✓ Organize work teams and give the teams a degree of autonomy on how they divide up tasks

✓ Put in place a team bonus system on the top of normal wages.

✓ Organize workshops for workers to exchange skills and work-specific experiences.

✓ Encourage employees, once in a while, to do activities together not related to work.

3 Listen to workers

Workers and managers chat at the end of a successful day at work.

Your workers have valuable knowledge and experience that your business could profit from. However, workers will soon lose interest if you ask for their opinion or advice, but do not act on it. So:

✓ be sincere in wanting to know workers' ideas and be prepared to take action.

✓ evaluate workers' contributions fairly and impartially.

✓ take action by implementing "good" ideas!

This worker is happy to show the business owner how this workplace equipment is operated.

To promote cooperation: Often, the person doing the job has valuable knowledge and good ideas on how to improve work processes or can see how problems can be solved. So, be sure to ask your workers (and their workplace representative) for their ideas and their opinions and show them that you take their ideas seriously by acting on them if the ideas are good.

Checkpoints for WISE-R Module 2 Managing and Motivating Employees

Checkpoint 4: Perform a job analysis and elaborate a job description to help you to find workers with the right skills for the job.

Checkpoint 5: Offer workers the opportunity to be trained, and so increase the skills available in your business.

Checkpoint 6: Make sure that new workers are introduced to your business culture, practices, and rules.

Checkpoint 7: Make sure that workers have the tools they need to do the job.

Checkpoint 8: Be clear with workers about what you want them to do and the results you expect.

Checkpoint 9: Give workers as much control as possible over the way they carry out their work.

Checkpoint 10: Give workers professional responsibility for tasks, and acknowledge this in pay and/or in thanks.

Checkpoint 11: Plan ahead for absences by preparing junior staff to take on delegated tasks.

Checkpoint 12: Give praise when it is due and never deliver criticism in public.

Checkpoint 13: Organize regular meetings with each employee to give them feedback and orient them in their work.

Checkpoint 14: Have a clear discipline and grievance policy and make sure that managers, supervisors and workers, understand and apply it.

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More
Work **I**mprovement in **S**mall **E**nterprises

Module 3

Designing and Managing Working Time

Developed and piloted within the ILO/DANIDA project:
**Improving Job Quality in Africa through concerted efforts by Government,
Employers and Workers**

Conditions of Work and Employment Programme

Introduction

The way that employers plan and organize working time in their business impacts the level of productivity, work quality and worker stress, often in ways that are not always well understood. As a result, business owners struggling to find customers and meet tight deadlines, may make hasty decisions about organizing working time.

One common misunderstanding relates to the use of long working hours as a way of increasing output. When people picture employees working long hours towards a deadline, they often imagine efficient, consistent, performance and increased productivity. Unfortunately, the opposite is often the case. As worker fatigue, health problems, and workplace accidents increase, business costs go up and productivity stays the same or even goes down.

This module is designed to help you to understand more about working time, including the many different working time arrangements (work schedules) you can have, and the advantages and disadvantages they present. It will also give you more information on the impact of different working patterns on worker performance and productivity.

You might be surprised to learn that there are practical strategies that can increase efficiency and productivity at the workplace just by managing working time well. In fact, there is quite a bit of evidence that effective management can bring real benefits to your business.

The objective of this module

1) To explain working time, including different working time arrangements, their advantages and disadvantages, and the impact of different working patterns on worker performance and productivity.

2) To enable you to set working hours and work schedules that will make your workplace healthier, safer, more productive, and more attractive to current and potential employees.

3) To give you knowledge to make wise decisions on working time arrangements, so that the working patterns you adopt increase efficiency and production, rather than reduce them.

This Module covers all of the basic issues related to working time:
- What is working time?
- How to avoid long working hours.
- Rested workers are productive workers.
- Structure shifts for maximum effectiveness
- Limit the use of night work.
- Flexible working time arrangements
- Using overtime wisely
- Involving workers in the design of work schedules

What is Working Time?

Working time is made up of the hours that you each member of your staff works.

The number of hours might be fixed by the company, by a national law or by a collective agreement reached between the company and a trade union.

8 hours of family responsibilities & personal interests

24 hours

8 hours of sleep

8 hours of work
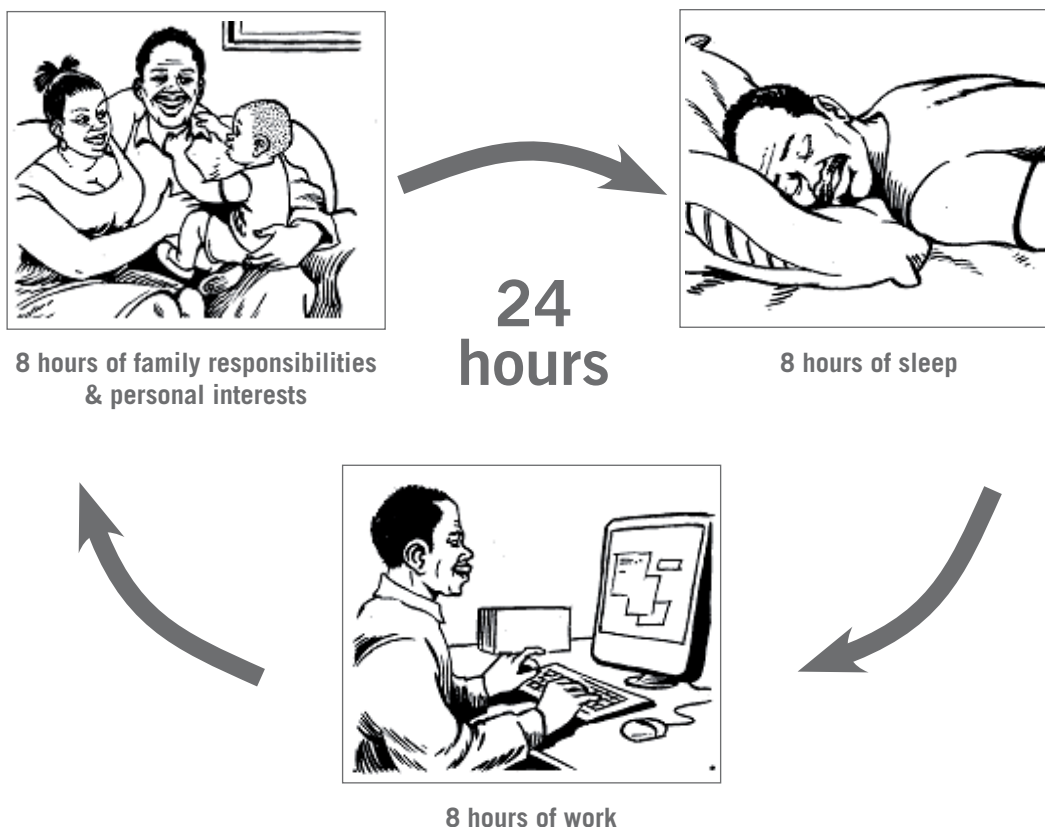
Your aim should be to structure working time in ways that ensure:

- Productivity is as high as possible;
- The risks to workers' health and safety are as low as possible;
- You and your workers are able to meet family and work responsibilities.

Your country, like all countries, may have regulations regarding working time. These might set out rules on the normal daily and weekly working hours, the maximum number of hours a worker can work in a week, or the number of rest hours a worker should have between shifts.

✓ **ILO International standards** provide some minimums and maximums, including that workers should:

- work a maximum 48 hour week (no more than 10 hours a day);
- have at least a day's rest (24 hours) per week;
- get a minimum of 3 weeks of paid annual leave per year.

Workers arriving at work.

As an employer, your aim should be to create a good design for working time in your company. This means that you need to find a way to set working hours and patterns that respect national and international standards, are good for workers, and productive for your business.

The advantages for your business

If you properly organize the working time in your workplace, you will benefit from:

- happier, less tired, and more consistently productive workers;
- workers with lower stress symptoms, lower illness rates, and better attendance, and who are able to balance their work and family responsibilities;
- lower overtime costs;
- less accidents and errors, because staff will be less tired, more alert, and able to concentrate better.

For business owners, accidents in the workplace can have direct and indirect effects:

➤ Costs of sick pay, medical treatment and compensation

➤ Costs of replacing the absent worker

➤ Losses caused by loss of production

➤ Attention and investigations by factory inspectors or safety and health bodies

➤ Penalties imposed for breaches of rules that caused the accident

➤ Loss of confidence of other workers

➤ Feeling of responsibility for the worker's injury

LONG WORKING HOURS – LACK OF REST

- **Fatigue**
- **Long working hours and lack of rest**
- **Workplace Stress**
- **Stress arising from work – family imbalance**
- **Night work/shifts, excessive overtime**

ERRORS ACCIDENTS ILL-HEALTH
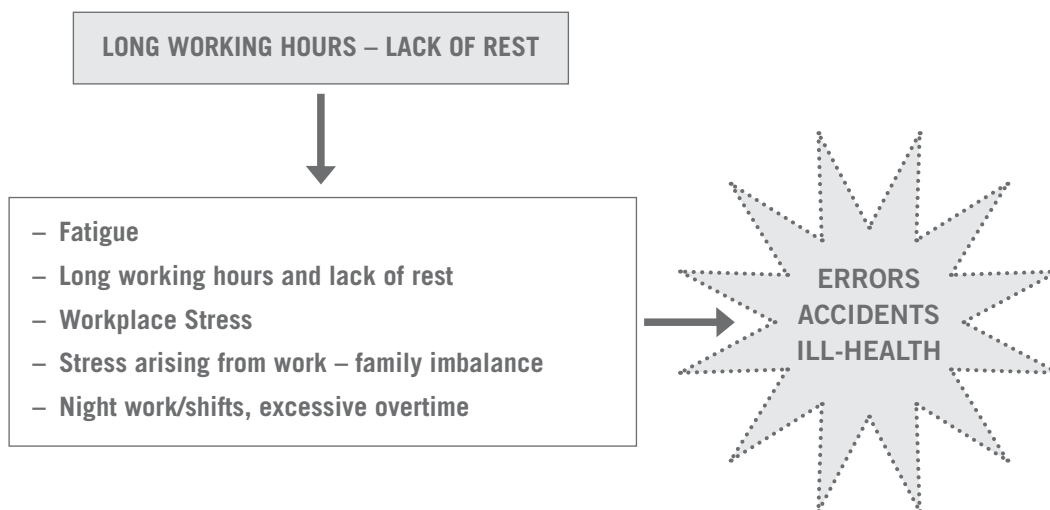
How to improve the organization of the working time in your workplace:

You will need to give attention to two main things:

The number of hours worked and rest taken

The timing of those hours

This module will help you to do this. The actions and approaches that are suggested all respect the following principles:

1. Avoid wasting time to prevent long working hours
2. Provide enough worker rest time
3. Structure shifts for maximum effectiveness
4. Avoid or minimize the use of night work
5. Consider using flexible working time arrangements
6. Limit the use of overtime
7. Involve workers in the design of work schedules

How to Avoid Long Working Hours

When you work the right number of hours, and have enough breaks, you stay productive. But when you (and your workers) work too many hours, you become tired, your productivity goes down, and the number of mistakes you make goes up.

This chapter will help you to avoid long hours and still get the job done.

The advantages for your business

This worker is very tired after working a long day, so is finding it difficult to think clearly.

Employers often think that long hours equal higher production, but this is not the case. Several studies have demonstrated that productivity declines as working time becomes too long. Typically (though not always), productivity gradually increases in the first 1 to 5 hours of work. However, it can go down after a certain number of hours (11 hours), and can even become negative (due to accidents and work errors caused by fatigue).

This is because long working hours are linked to:

- **fatigue, especially when long hours are routine**, because the work is physically and/or mentally demanding or perhaps because it is boring;
- **Stress**, at trying to keep up work performance over that length of time;
- **difficulties** in balancing work and family responsibilities;
- **other health problems,** because people who are fatigued and stressed are more susceptible to physical and mental ailments.

Setting working hours at the right level will improve motivation and reduce wasted time and resources. It will also lift morale, as your workers will appreciate having the chance to work and enjoy some time with their families.

> **Reducing long working hours => increased productivity**

What you can do

1. Cut out activities that waste time

> **Checkpoint 15:** Avoid wasting time and resources by planning for production and delivery time-lines, including advanced planning on staffing needs.

Time can be wasted in many ways. They all cost money, and most time wasters can be avoided. Some examples include:

- **Plan for smooth production** – Spend some time planning ahead to make sure that you have the raw materials you need when you need them. You can do this yourself or train another member of staff on how to work out what is needed. This gives them the chance to take on responsibility for making sure your stock is sufficient at all times.

This entrepreneur is working with a colleague on production planning.

2. Planning your staffing

Develop accurate timelines for different work activities and contracts, so you can be sure to have the number of staff you need to complete the job.

3. Seek feedback from employees

Talk with workers about fatigue, stress, and performance and look for ways to reduce these problems so as to increase productivity. One simple measure could be to ask workers to contact a supervisor immediately if they encounter any problem, rather than waiting for the next time when the supervisor comes along.

> **Checkpoint 16:** Have a regular schedule for maintaining equipment, so that you avoid accidents and breakdowns.

4. Maintain your equipment

If machinery is not properly maintained it is more likely to perform slowly, or break-down and cause you to lose hours of production. It is also likely to reduce the quality of your goods, so you end up with more rejects and complaints. It is, therefore, important to include maintenance of machines in your planning.

Think about negotiating with a local business to maintain your equipment at regular intervals. Making sure that machine operators know how to safely use and clean the machines they use can also help to prevent damage.

5. Keep a log of the hours that workers work

By doing this, you will know when someone has worked for too many hours or too many days without a break, and might be in danger of having accidents or making errors.

6. Increase job skills training

A trained worker can often do in a few minutes what another person has struggled with all day. They understand the tasks they are doing, the equipment they are operating, and the problems that they might encounter. This is why having well trained workers can help to save you *from the long hours trap*.

Take the example of using a copy machine. If the operator of the machine does not know all the functionalities, he or she will waste paper, ink and electricity, as well as working time. It is possible that this job could be the done twice as fast (literally!) if the operator received training/guidance on the use of the copy machine.

Most of the time employees do not realize that they do not know how to perform a particular task, or they are too embarrassed to admit to it. Your presence at the workplace and continuous dialogue with employees is, therefore, very important for spotting such training needs.

Checkpoint 17: Provide job-specific training to boost expertise and efficiency.

**Working more than about 50 hours per week
is excessive and counter-productive
for your business!**

Rested Workers are Productive Workers

The advantages for your business

Rest time can include:

- breaks during the working day;
- rests between shifts;
- weekly rest days.

All three types of rest are important and can impact on your productivity.

Rests between work shifts (and at the end of the working week) provide time for workers to rest, meet family responsibilities, and refresh themselves before the next work session. Rest breaks during the working day help to minimize the build-up of fatigue.

Whichever job you or your workers are doing, regular breaks will help keep you all more alert and this is important if you want to keep your business working efficiently.

> **Adequate rest => Increased productivity**

What you can do

Make sure:

- You provide at least 11 hours of rest between shifts (daily rest) and 24 consecutive hours of rest at least once a week (weekly rest);
- To reduce fatigue and boredom, give workers frequent breaks rather than one long break;

> **Checkpoint 18:** Make sure all workers get enough rest time during their working day, in between their shifts, and at the end of their working week.

- Workers have a place to rest that is away from the working space and that has access to drinking water and toilets;
- The length of breaks, the type of breaks (active or passive), and how often they can be taken is adjusted to the nature of work and to the needs of workers.

> **Checkpoint 19:** Provide a place for workers to rest, away from their work station and with access to drinking water and toilets.

These workers are able to relax together during work breaks.

- Provide enough rest time between shifts (daily rest) and weekly rest (rest days).
- Sometimes a change of task can provide a worker with a break from boring tasks, so think about allowing/asking the same worker to perform different tasks, with their agreement, of course.

Rest time is needed by everyone!

Whether you work bent over a desk or stand at a conveyor belt, it is important to change positions regularly if you want to avoid aching or stiff joints. Breaks provide an opportunity to move away from the workstation, go to the toilet or have a snack to boost your energy. All of these will help to keep you and your workforce productive.

> **Don't forget:** Parents or other workers with caring responsibilities may need to check on relatives or feed (breastfeed) children. If they can do this during their break times, it will not interrupt your production.

Some things to think about when programming rest:

> **Some more ways to reduce fatigue and stress**
> - Allow frequent planned short breaks.
> - Allow mini-breaks with basic physical exercises.
> - Ensure at least 24 consecutive hours of weekly rest.
> - Provide a calm place to rest, with drinking water and toilet facilities.
> - Provide drinking water and toilet facilities.
> - Ensure the right temperature at the workplace (not too hot or cold).
> - Use safe machinery and protective gear to eliminate insecure feeling.
> - Respect the "elbow rule" to avoid fatigue and pain (work surfaces should generally be at the elbow level).
> - Provide good chairs of correct seat height and with a good backrest.

What do you think? Is it better to have:

? Frequent, short breaks

? Longer, less frequent breaks

These workers are chatting and stretching during a short break from desk work.

What should you and your workers do during break time?

? Be active (do other work, exercising) but rest from mental activity (active rest);

? Rest from physical activity (passive rest);

? Take time away from the things that cause you stress;

? Spend time on different job using a different part of your body;

? Do personal tasks (e.g. check on sick relatives).

> **There is no right answer,**
> **as work breaks need to be structured**
> **to meet the needs of the worker!**

The most appropriate types of rest will depend on:

● The type of work they do;

● The highs and lows in work demands they face;

● How physically or mentally tiring the job is;

● The number of days worked;

● The personal circumstances of the worker, etc.

BEWARE:

➢ **Rest before too much fatigue builds up;**

➢ **The value of a given period of rest goes down as the time on the job increases, so it is important that breaks are taken early enough during the shift.**

> **To promote cooperation:** Involve workers and their representatives in the design of work and break time schedules and be ready to listen to their feedback. This can do wonders for worker motivation and loyalty. (See section 8 of this Module)

Structure Shifts
for Maximum Effectiveness

The advantages for your business

Shift work is increasing around the world and can be attractive to businesses because it increases output by extending the hours of operation, thus making better use of existing facilities and equipment. Employers also see it as a way to meet peaks in demand.

Two common types of shifts and shift patterns are:

- **Fixed shifts:** same shift (hours and start time) each day e.g. many office jobs;
- **Rotating shifts:** the period worked changes periodically, so a worker could work from 6 am until 2 pm one week, 2 pm until 10 pm the next, then a week of night shifts from 10 pm until 6 am e.g. in a large factory. Shift rotation involves advanced planning, scheduling, and notice to workers.

What you can do

1. ***Weigh up the costs and benefits of shift work***

The benefits for the enterprise:

- More intensive use of premises and equipment;
- Extended operating hours without overtime costs;
- Longer consecutive rest periods for workers are possible.

The costs and problems for business:

- Potential difficulties in managing shift work and also ensuring that supervision of safety and quality is maintained;
- Potential increased worker fatigue, stress, inattention and accidents, particularly if night shifts are used;
- Early/late and night shifts can cause a decrease in efficiency and the quality of work of workers, leading to lower productivity and more product products that fail to meet quality standards.

The advantages and disadvantages of shift work for workers:

The advantages for workers:

- Offers a chance for higher earnings, if the hourly rate is higher on certain shifts (e.g. night shift work usually is paid at a higher rate);
- Can suit the needs of individuals e.g. as a short term way for both parents to work (one in the day and one, for example, in the evening) and always have someone free to care for children or relatives.

The disadvantages for workers:

- Increased fatigue, stress, and inattention due to changing, early, late shifts, or longer working days.

- Potential difficulties for workers in fulfilling their family responsibilities (particularly for single parents) depending on the types of shift used.

A worker falls asleep during the day due to fatigue,

2.   *Reduce the negative effects of shift work*

All shifts can have a negative effect on workers' productivity and should be carefully managed, including:

✓   **Ensure regular and predictable schedules:**

Where working hours change often and in an irregular manner, they are difficult for workers to adapt to. Such irregular schedules can make it impossible for workers to adjust their internal time clocks or to have predictable family and social lives.

✓   **When using rotating shifts, rotate shifts forward not backward:**

For example, if you have three 8 hour shifts, the shift should always be moved forward in time between the old and the new shifts. This makes sure that workers get a proper break between the end of the old shift and the beginning of the new. Moving shifts in a clockwise fashion makes it easier for workers to adapt their body clocks to the new shift.

✓   **Rotate shifts quickly** (say, weekly) so workers can adapt to the pattern and do not get used to one shift over a medium period.

> **Checkpoint 20:** Avoid or minimize the use of irregular and unpredictable shift schedules.

✓ **Think choice:** Give workers the right to refuse to work certain days (e.g. rest days) and the right to request different types of working time arrangements.

✓ **Safe transport:** Ensure that workers have a reliable way of getting to work and home from all shifts (especially at night) – this is good for safety and work attendance.

Workers wait for the bus to take them to work.

Limit the Use of Night Work

The advantages for your business

Night work is often used in industries that require round the clock operations, such as many hotels and factories. However, many employers do not realize that running night shifts has some important (hidden) costs attached. If you take these into account, you may find that night work is not worth the price you are paying.

Being aware of all of the costs of regular night working, both personal and financial, will help you to make the right decision for your business.

> **Less night work => lower costs => increased productivity**

What you can do

1. Be aware of the costs of night work for both workers and business:

When thinking about night shift working, you should remember that night shifts can lead to all the same problems as other shift work (discussed above). These can include additional administrative costs (electricity, heating), supervision difficulties, increased worker fatigue and sleep disorders, consequently a higher probability of accidents and health problems.

Fatigued workers have more accidents.

The negative effects of night work on workers are:

- More accidents and other problems due to lack of alertness (sleepiness) and less supervision of safety. The effects of these are exacerbated by the reduced facilities available (e.g. absence of first aid, café/canteen for eating);

- Disruption to home and social life;

- Workers are forced to behave in opposition to their natural biological timing system, causing disruption to sleep and digestive and reproductive disorders, caused by the fact that the work pattern is against our internal biological timing system.

These negative effects can create additional risks for your business, as they can lead to:

- Lower productivity and reduced quality of work;

- A higher probability of accidents that increase costs;

- A reduction in quality.

NOTE: Age, experience, individual/family circumstances will all impact on the individual's experience of shift work, but most will experience some of the problems listed above.

Checkpoint 21: Minimize the use of night work and, when it is necessary, make it safer by providing supervision and adjusting the lighting and temperature in the work environment to be similar to daytime.

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2. *Avoid night work shifts when you can. If it is impossible to avoid the use of night work:*

- Provide proper facilities for night workers (e.g., for first aid, rest breaks, regular health assessments);

- Modify the working environment to simulate daytime and promote alertness e.g. lighting, temperature;

- Make sure transport is available to workers going home after dark, to increase safety and minimise absenteeism.

3.6
Flexible Working Time Arrangements

Whatever your business, the demands for your product or service are unlikely to be constant. Sometimes your business will be much busier than at other times e.g. a factory making bikes is likely to be busier in spring than in winter. The same thing goes for your workers and their non-work responsibilities. Whether they need to pick up a child from school for care or a sick relative, every worker has individual needs that will make it more or less easy to work during certain time periods.

Flexible working time arrangements are already popular in many countries because many of them fit better with the reality of work and life demands by providing flexible choices for workers that can benefit businesses too.

The advantages for your business

Flexible working time arrangements can offer workers increased choices about how many hours they work and when they work them, so they often find it easier to combine work and family (or community) responsibilities. As a result, these arrangements can reduce feelings of tension, worry, and stress, experienced by workers who are struggling with family or other personal responsibilities.
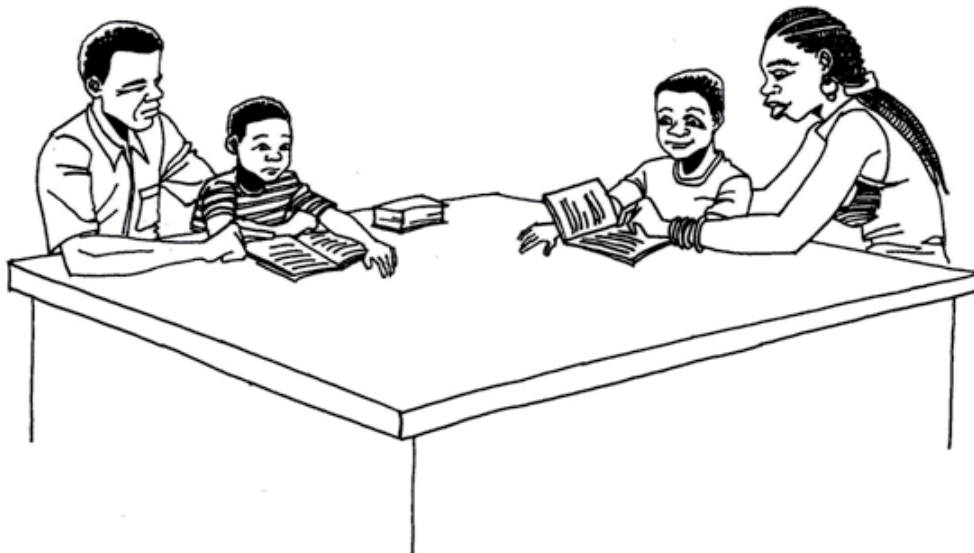
Good working schedules allow working parents to spend time with their children.

The main benefit for employers from flexible working, are:

- improved employee attitudes and increased motivation and performance of workers;
- improved recruitment and retention of new employees;
- increased trust and good will, which is helpful when you need workers to make an extra effort for your business. This can improve your business and its financial performance.

> Flexible Working Time => motivated workers => increased productivity

What you can do

There is a range of innovative 'flexible working' arrangements:

1. **Offering workers shorter hours (part-time working)**

Part-time working time arrangements involve workers being employed to work fewer hours than those who work full time, for example, 26 hours per week instead of 40. Using part-time workers can give employers improved adaptability, because the business has a larger number of workers to rely upon to help in periods of high demand.

2. **Staggered hours schemes**

Workers, or groups of workers, start and finish work at slightly different times. Workers may be able to choose their start time, from a range of options. Once the choice is made, this becomes their fixed schedule.

Staggered hours schemes can be particularly helpful in allowing all workers to reduce travel times by avoiding rush-hour travel. It also gives businesses the chance to have the maximum number of workers at the busiest time of the day.

| SCHOOL | OFFICE |

This father benefits from a flexible work arrangement, so can drop his child at school before going to work.

3. **Flexitime**

> **Checkpoint 22:** Introduce flexible working time arrangements that will help your workers to balance their responsibilities and boost your productivity.

With flexitime, the worker and employer can schedule working hours flexibly on a daily or weekly basis. The amount of hours worked each day or week, and the daily starting and end times, may vary, but the worker has to work certain "core" hours each day (e.g. 10 am to 3 pm). Employers sometimes also set a minimum number of hours to be worked over a month.

4. Time banking schemes

This is an extension of flexitime arrangements. It allows a worker to 'bank' the extra hours they work in excess of the normal hours of work in a particular period (e.g. a month) and use them to reduce their working hours or take leave in another month. This gives workers the possibility of working extra hours one month and to save these extra hours up to be taken as time off later.

Individual contracts or collective agreements with trade unions determine how many hours a worker can bank and how long they can hold on to them e.g. hours to be used within 3 months.

5. Flexible breaks

Workers are given the option to take shorter lunch breaks and, for example, go home earlier.

6. Compressed workweeks

In compressed workweeks, the normal number of working hours does not change, but those hours are scheduled over fewer days than is normal e.g. 4 days of 10 hours rather than 5 days of 8 hours. This can be beneficial for long-distance workers or for those who want to save on transport costs, but the risk of fatigue, accidents, and stress, can be higher with very long shifts (e.g. 12 hours per day).

Using Overtime Wisely

When workers who are paid by the hour or day work more than their normal (contracted) hours, the extra hours worked are normally counted as 'overtime'. Often, this work is paid at a higher rate than normal work, to compensate workers for the extra effort and inconvenience of staying at work longer (at least 28 % higher, according ILO Standards).

The advantages and disadvantages of overtime for your business

Overtime and shift work, have many of the same advantages and disadvantages.

The advantages: Overtime can provide a chance for a worker to earn a little more and it can help the business to increase total output. Unlike shift work however, the increased output is due to longer hours for individual workers and, therefore, can only be used for limited periods.

The disadvantages: For the worker, overtime brings with it all of the problems that are produced by working longer hours that were discussed earlier (fatigue, stress, ill health and family disruptions, etc.).

For the business, as regular overtime work lengthens the total hours a worker works, it is likely to be less productive than normal working hours, and the outputs might be of lower quality.

Also on the negative side, using overtime increases business costs e.g. for operating the premises, staff, etc.

What you can do

1. *To avoid an additional burden on your business and your workers:*

- Limit the use of overtime through increased work efficiency and planning;
- Give advance notice of required overtime work;
- Set wage rates, piece rate payments, and incentives, at a level that enables workers to meet production targets during normal hours (so workers can earn a proper wage without working overtime);
- Make sure that the effective wage rate is at least equal to the minimum wage.
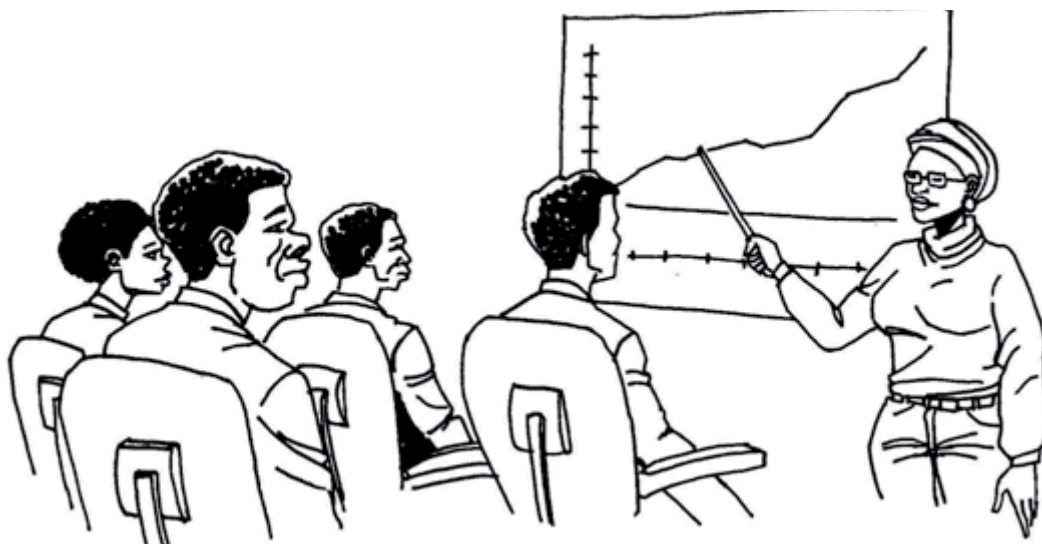
An entrepreneur explains to managers how overtime has increased business costs.

Checkpoint 23: Limit the use of overtime, especially on extended (e.g., 12-hour) shifts. When overtime is used, provide advance notice to workers.

If overtime is required, try to:
- Spread the overtime out between male and female workers who wish to do extra hours. Men and women both have family responsibilities;
- Find a balance between hours of work and intensity of work;
- Develop a company policy for proper compensation for time worked;
- Provide clarity and motivation, and give all workers a written contract that includes a statement on their normal working hours, their pay, and the pay rate they will receive if they work additional hours;
- To avoid doubt, include details of the overtime worked and the hourly rate paid on the workers' pay slip, so that they can check that the payments are correct.

To promote cooperation: Meet regularly – at least once a year – with workers' representatives to consult with them on wages, including overtime rates. These consultations should also include discussions on other overtime issues, such as fairness in deciding who is offered the possibility to work overtime.

Checkpoint 24: Be clear with each worker about their normal working hours, their pay, and what pay rate they will receive for overtime work.

Involve Workers in the Design of Work Schedules

The advantages for your business

When you design the work schedules for your business, you will firstly want them to be practical – so that the work gets done on time. Secondly, to attract and retain the best workers, your working time design should be as attractive and motivating as possible. In general, workers will perform better if work schedules are adapted to their personal needs and responsibilities.

Workers and business owners discuss working time schedules.

Your experienced employees know how the production processes operate and are familiar with the way work demands change. They know why some work patterns don't work and others do. They also know the problems that other workers face when trying to balance their work with family and other responsibilities. So, by involving workers in the process of designing work patterns, working hours, shift rotation, and everything else to do with working time, you will have the best chance of coming up with working time schedules that work well, both for the business and the workers.

Worker involvement:

→ Improves the "fit" between workers and their jobs.

→ Improves employee's performance

→ Improves productivity

What you can do

Checkpoint 25: Consult with workers on the design of working time in your enterprise, and listen to the feedback they give you.

Involving workers and their representatives in the process of designing your working time schedules can be very helpful. They can make you aware of all of the issues that they face with working patterns. These might include problems of transport, for example, or family responsibilities, such as caring for children or sick relatives.

Workers can also help you to identify any problems that working patterns create for meeting work deadlines, such as staff shortages at certain times of the day.

Here are just a few of the points that might come up:

- Family responsibilities – How do working hours/shifts fit school times or other caring tasks?
- Health and security concerns – Workers may see risks before managers, such as with night shifts.
- Transportation to/from work – Is it available? Is it safe?
- Rest and meal facilities – Are they available on site or nearby? Are they suitable?

How can workers in your enterprise be more involved in developing working time schedules? (Through meetings, written questionnaires, informal discussions?)

Checkpoints for WISE-R Module 3 Effective Management of Working Time

Checkpoint 15: Avoid wasting time and resources, by planning for production and delivery timelines, including advanced planning for staffing needs.

Checkpoint 16: Have a regular schedule for maintaining machines, so that you avoid accidents and breakdowns.

Checkpoint 17: Provide job-specific training to boost expertise and efficiency.

Checkpoint 18: Make sure all workers get enough rest time during their working day, between their shifts, and at the end of their working week.

Checkpoint 19: Provide a place for workers to rest, away from their work station and with access to drinking water and toilets.

Checkpoint 20: Avoid or minimize the use of irregular and unpredictable shift schedules.

Checkpoint 21: Minimize the use of night work and, when it is necessary, make it safer by providing supervision and adjusting the lighting and temperature to be similar to daytime.

Checkpoint 22: Introduce flexible working time arrangements that will help your workers to balance their responsibilities and boost your productivity.

Checkpoint 23: Limit the use of overtime, especially on extended (e.g. 12-hour) shifts. When overtime is used, provide advance notice to workers.

Checkpoint 24: Be clear with each worker about their normal working hours, their pay, and what pay rate they will receive for overtime work.

Checkpoint 25: Consult with workers on the design of working time in your enterprise, and listen to the feedback they give you.

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Module 4

Managing Wages
and Benefits

Developed and piloted within the ILO/DANIDA project:
**Improving Job Quality in Africa through concerted efforts by Government,
Employers and Workers**

Conditions of Work and Employment Programme

Introduction

How often have you complained about the productivity level of your workers? How often have you asked yourself why you cannot find loyal or reliable employees, when so many people are looking for work?

WISE employers all over the world are realizing that one of the keys to recruiting and keeping the best workers is offering safe and attractive conditions of work. Wages, incentives and benefits programmes, are an important part of these conditions.

Wages are the "headline" condition of work. Others, such as health and safety and maternity protection, are equally important. But when a job is advertised, the first thing many workers looks at is the pay.

For example, if you want to attract and retain experienced workers then the wage has to be enough to support a family. If the pay does not correctly reflect the level of training a job seeker has completed, he or she will not apply for the post.

The importance of wages does not end with recruitment. When an employee works in one enterprise for some time, their experience grows. At the same time, the price of food and housing rises. If wages and incentives do not keep up with these constantly changing circumstances, workers may become de-motivated or discontented and will start to look for other job opportunities.

So, if you have only ever thought about wages as a drain on your profits, then think again. These materials will help you to design wages, incentives, and benefits programmes that will increase your profits and productivity, with information and practical tips.

The objective of this module

At the end of this module you will understand:

1) Different types of pay and benefits and their link to worker and business performance

2) The steps you can take in order to develop and implement transparent wage practices

3) How to adjust and manage wage practices to attract and retain the best workers.

This module will cover the following subjects:

1. Know what you are talking about: pay, wages, salary and income
2. Understand both points of view
3. Create a fair job structure
4. Offer wages that attract and retain quality workers
5. Motivate workers through well-designed pay levels
6. How to link pay to work done
7. Adjust wages as the cost of living changes
8. Encourage workers with incentives and benefits
9. Create a transparent wage payment system
10. Use your wage policy for the benefit of your business

Know what you are Talking about: Pay, Wages, Salary, Income...

The advantages for your business

In some countries, wages equal just money – so much per hour, week or month. In others, or in particular industries, workers can receive a combination of things, such as money, products, rice or cooking oil, meals, accommodation, or transport.

Whether you are trying to work out your wage costs, design your new wages package, or 'sell' your idea to your staff, being clear about what is and is not included is very important.

A manager talks to workers about the company pay structure.

What you should know

In this training we use the words 'pay' or 'wages' to mean the total that a worker receives from their employer in return for the work that he or she does. This includes all types of wages, incentives, and benefits, such as:

- The regular money 'wage';
- Piece rates – when workers are paid an amount for each item they produce;
- Overtime pay, allowances, bonuses in cash or in another form;
- Merit or performance-related payments, and production incentives;
- Annual leave payments, 13th month;
- Other paid time off (e.g. for training, maternity or paternity);
- Social security payments including health, medical care, and pension.

What you can do

On a day to day basis, the most important thing for you to concentrate on is not the word you use for pay or wages, but that:

- you know how much your worker will cost your business;
- your employees know what they will receive.

Be clear from the start. If not, you could end up in a dispute later.

**Don't forget that your country
will have a definition of wages which you will have to apply in certain events,
such as when working out tax, redundancy or maternity pay.**

Understand Both Points of View

The advantages for your business

Understanding both points of view will be essential if you want to introduce affordable pay structures that will also be attractive to workers. Changing workers' pay will always involve some level of negotiation. Understanding the workers' view will help you to avoid conflict and to get the result you want.

What you can do

1.   *Look at wages through a worker's eyes:*

Wages are important to both workers and employers – but in different ways. Some factors are listed below, but there are many more:

For employers	For employees
– Represents a business cost	– Fairness
– Difficult decision: how much to pay each worker	– Is the main source of income for the employee and his/her family
– Involves calculations and records	– Provides personal value and status
– Is a competitiveness factor	– Leads to job satisfaction
– Important to employees' retention	– Linked to long term security

2.   *Be fair:*

> **Checkpoint 26:** Be clear, fair and consistent, when you decide what you will pay your employees.

To be fair:

- Value the work and not the worker
- If workers do the same job or a job of equal value to the business, pay them equally

  Two jobs may differ in content, i.e. a truck-driver and a nurse, but may be of equal value if the following are of equal value:
- the skills and competencies
- the responsibilities
- the efforts associated with them and
- the working conditions in which they are performed

  Determining if two jobs are of equal value requires a method to compare them: to assess their requirements and characteristics on the basis of common and objective criteria.

Job evaluation methods are a tool to establish the relative value and rank of jobs. By allowing comparisons between jobs, they make it possible to determine whether their corresponding pay is just. For an objective and fair assessment of jobs, job evaluation methods must be free from gender bias. This means that all the key dimensions and characteristics of jobs, whether typically performed by women or by men, must be taken into account.

These workers are being given their wage slips.

3. **Have a transparent pay structure so workers can see why some people are paid more than others.**

To save time on discussing wage levels with each individual worker, write down your job structure and pay structure (as described later) and give your workers a copy, or put it on a notice board with a date for review marked on it.

To improve cooperation:

Be available for workers or their representatives, so that, if any grievances arise, you can resolve them in a positive way and before they lead to problems.

If a worker has worked particularly well, it is good to let them know. Praise is a strong motivator. But, to be fair to everyone, avoid making 'bonus' payments which are not in your pay and benefits package, unless you give them to all workers.

Remember:
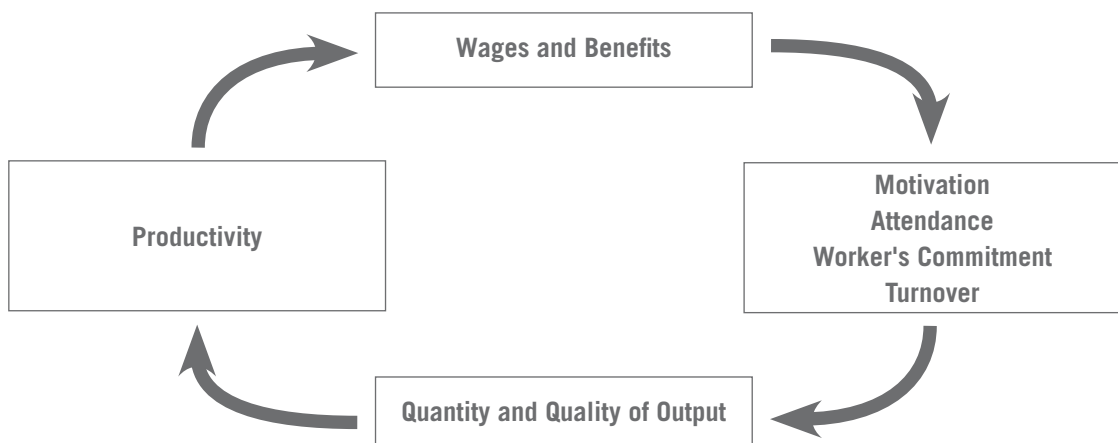
Create a Fair Job Structure

The advantages for your business

A job structure is not just a chart showing who is in charge of whom. It describes how tasks and responsibilities are divided and how work is organized.

Taking the time to develop a clear job structure will help you to organize, manage, and improve your work organization and to respond to personnel issues in a consistent way. It will save you time, reduce disputes, and improve fairness, and all of these changes will boost your productivity.

> **Fair job structure => better motivated workers => increase in productivity**

What you can do

To create your job structure you will need to take 4 steps:
- Find out who does what (and create an organizational chart);
- Write comprehensive job descriptions for each job;
- Create a list of job factors that you can use to compare and rank all the jobs in your enterprise;
- Score each job.

Step 1: Find out who does what (create an organizational chart)

> **Checkpoint 27:** Create an organizational chart with everyone, including you, on it.

Begin by creating an organizational chart for your enterprise. Everyone who works for you, including you, should have a position on this chart. Put lines between workers to show that one supervises or manages another or to show teams. You can also note the type of job that each does, using broad categories that make sense to your enterprise, such as:
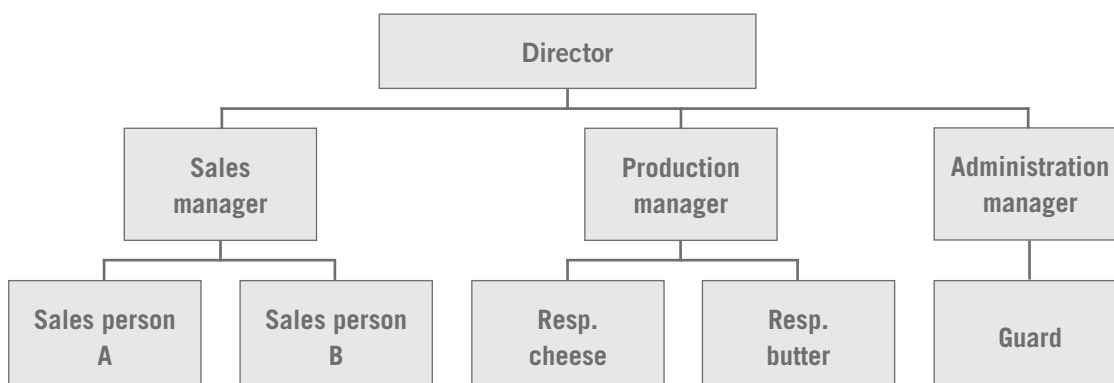
- Management/supervision
- Production
- Maintenance
- Sales
- Administrative

You might also want to show whether workers on the chart are permanent or temporary employees.

This employer is explaining the enterprise job structure to a group of workers.

Step 2: Write job descriptions

Checkpoint 28: Prepare a comprehensive job description for each job.

You have to know what a job involves and requires if you are going to decide how much to pay a worker to do it. Sometimes you can tell from the title, but not often.

For example, a Production Worker might do the same unskilled task – say, put a product into a box. But she might work on a larger product – say, a car – and do specialist welding.

To be sure about what each job involves, write a comprehensive description of the tasks to be done and skills needed: a job description. (for more information on drawing up a job description see WISE-R Module 2, Managing and Motivating Workers)

Here is an example of a completed job description:

Job: Quality Checker

Responsibilities:
– Ensures quality of products
– Member of production management team

Tasks and any specialist tools used:
– Checks garments
– Identifies processing problems
– Investigates source of problems
– Provides machine use training where necessary
– Provides written reports on problems that recur

Experience, training and education needed:
– Training as machinist
– At least 5 years experience as machinist

If some tasks are only done occasionally, the job description should clearly state that.

Step 3: Rank the jobs

Each card on this table provides information on one job. To rank the jobs, the cards are going to be placed in order.

The aim of this step is to put the jobs in order, from those who will get the lowest pay to those that will get the highest.

➢ **Card ranking:**

If you only have, say, 3 workers, for instance, a tea maker, a secretary, and an accountant, you might be able to rank them quite easily by putting each job title on a card then putting the cards in order of value and importance to the business.

But if you have, say, 6 workers – a tea maker, a secretary, an accountant, a security guard, a sales manager, an office manager, and a driver – it becomes more difficult. How do you decide if the security guard is to be paid more or less than the secretary? And who is more valuable, the office manager or the sales manager?

➢ **Create a list of factors for ranking:**

> **Checkpoint 29:** Rank jobs by comparing the skills they involve and their importance to YOUR business.

This method is useful when you have to rank a larger number of jobs, or some jobs that seem similar. It enables you to evaluate the tasks performed in an enterprise, regardless of its size and the economic sector in which it operates.

Four factors are sufficient and essential to compare the value of the jobs to your business. These are:

- skills and competencies
- effort;
- responsibilities; and
- conditions under which work is performed

These factors can be broken down into sub-factors. These will make it possible to capture the more detailed characteristics of the different types of jobs that exist in your enterprise.

For example, the "skills and competencies" factor could be broken down into "academic or vocational training certified by a diploma" or "work-related experience" or "manual dexterity" or "interpersonal skills".

On the other hand, the "effort" factor could be broken down into "physical" (e.g. lifting young children or dependent adults), "mental" (e.g. data entry, correcting texts or checking figures) as well as "emotional" (e.g. negotiating with customers that may be dissatisfied or aggressive) sub-factors. Ideally, the number of sub-factors should be no more than 10.

You will use the final list of factors and sub-factors to score or value each and every job in your structure, so the list must not be too specific to any job.

Let's take the example of a toymaker, who might employ:

- Machinists who need to have, say, 6 months of training in machine use;
- Marketing workers who need to have a university degree in marketing;
- A cleaner who needs no formal training, but requires some paid work experience.

So one job factor on the list might be the level of training required – with a list of levels such as 0 – 1 years, 1 – 3 years, … university or professional level.

Your aim is to identify job factors which you can apply to most of your jobs, but which help you to see the differences between them (see the example below).

Job factors	Score range
Education level needed to do the job (school attendance to age16, until age18, or completion of higher education)	0-20
Work experience needed to do the job (0 to 1 year, 2-5 years, 6+ years)	0-30
Efforts: Mental physical or emotional	0-20
Level of responsibility for staff or processes or equipment	0-50
Consequence of errors (on finance, customers or production)	0-50

Step 4: Score each job

Next you will need to give each factor in the list a value or score range. So, for example, skills and experience are worth between 0 – 30 points. The more skills or experience a job requires, the more points it will score on this factor.

By looking at each job description you will be able to work out the total score for that job. See the following example for a secretary and a security guard:

Job factors	Score range	Score for job of secretary	Score for job of security guard
Education level needed to do the job (school attendance to age 16, until 18, or completion of higher education)	0-20	10	0
Skills, experience needed to do the job (0 to 1 year, 2- 5 years, 6+years)	0-30	25	15
Effort: Mental, physical or emotional	0-20	5	1
Level of responsibility (e.g. for staff or processes, for confidentiality, e.g. payroll department employee, or equipment, e.g. maintaining and fixing office equipment)	0-50	30	25
Consequence of errors (on finance, customers or production)	0-50	30	34
Working conditions (e.g. exposure to oil and dust, frequent interruptions by telephone and in person, moderate and constant exposure to noise)	0-30	15	15
TOTAL		115	90

Remember the scores you give will relate to your business needs. If, for example, **your** business is in a place where robbery is common (as in the above case) the job of security guard will be more risky and more important and so score higher.

**Score the job not the job holder,
so the score will not have to be changed
when a new worker takes on the job.**

Do not let irrelevant characteristics affect your judgement:

If you want the best person for the job, you need to choose them because of their skills and experience, and look at what benefits they will bring to your business. If, instead you choose someone just because they are a particular race, skin colour, religion or gender, then you are not choosing the best candidate. If you decide not to consider someone because they have a disability, are older than average workers, have different political beliefs, or are members of a union, you will have a smaller pool of candidates to choose from.
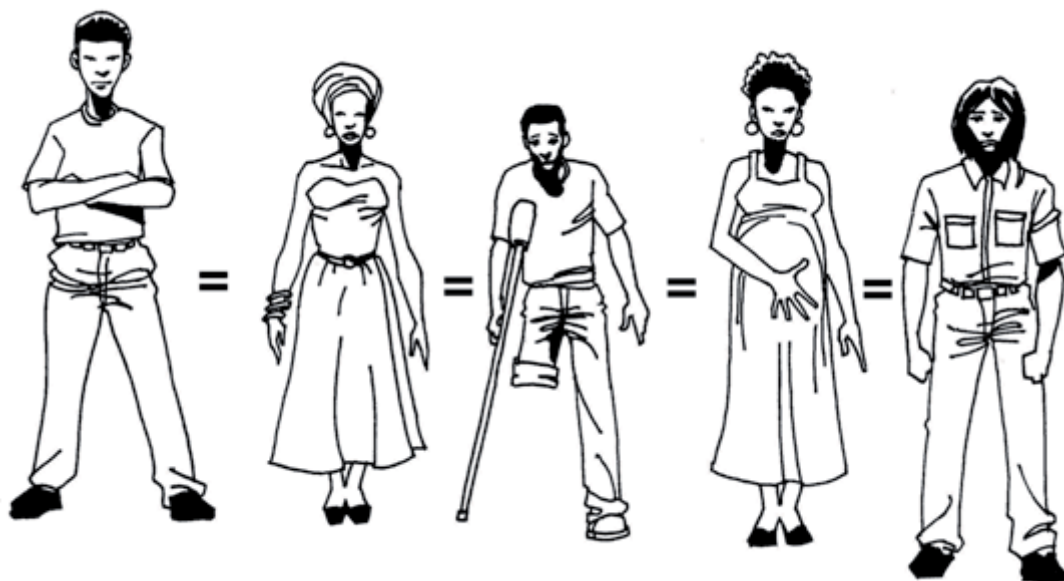
People may look different from each other or have different beliefs,
but they should not be valued less because of this.
Be objective when deciding what a job is worth: ignore the personal characteristics of the post-holder.

Remember that:

The score will only help you to put the jobs in order. If two jobs score very differently, this means one will be paid more than the other but it does not mean that the pay difference will be very big.

4.4
Offer Wages that Attract
and Retain Quality Workers

Once you have drawn up your organizational chart and ranked the jobs, you can move on to deciding the wage level for each job.

The advantages for your business

In a well-designed pay structure, the wage paid for a job is not just a single amount – say, 1000 coins. The job is put on a pay level, which has a bottom and a top point. Often workers start on the lowest point and gain points as time goes on, such as for each year of service.

Identifying the right pay level for any job is, possibly, the trickiest part of the wage structuring process, but also one of the most important to attracting and retaining the best workers. This is because workers who know that their pay will improve (as they gain experience) are more motivated.

A worker discusses his wage level with a manager.

Attracting and retaining the best workers => increased productivity

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What you can do

You will need to decide on two things:
- how much the job is worth and what you are willing and able to pay for it
- the number of pay levels and the range of pay within them

➢ **Respect laws and fairness:**

Checkpoint 30: Do not pay any worker less than the minimum wage in your country.

- No worker should be paid less than the legal minimum wage
- Workers doing the same job should be paid the same
- Jobs of equal value should be paid on the same pay level

> **Know the minimum wage:**
>
> Most countries have a law that sets the minimum wage for workers. In some countries there is one minimum that applies to all workers. In others, it is divided between regions or by work sectors. You need to find out the minimums that apply to your workers and make sure you do not pay below that level.

➢ **Gather information about the range of wages others pay for the same job:**

The legal minimum wage provides you with the lowest wage you can consider. But, if you want to attract and retain the best workers, the working conditions that you offer, including pay, need to be as good or better than the local (or national) businesses that you are competing with.

Use your investigating skills to gather information on the going rate from:

- Collective agreements covering any of your workers, including agreements reached across an industrial sector
- Guidelines on industry practice e.g. from chambers of commerce
- Wages offered in newspaper advertisements, particularly of competitors
- Salary surveys, often published on the web
- Interviews with job applicants
- Business network contacts, such as the WISE networks.

An entrepreneur checks the local papers to see what other employers are paying their workers.

Your investigations are likely to leave you with a list of different examples of wage levels for jobs that are similar to those in your business.

➢ **Look at what you can afford to pay and other things you can offer**

You cannot offer to pay workers more than your business can earn – this will lead you to bankruptcy and your workers to unemployment. So when you are deciding the wages for a particular post, you need to bear in mind your total wage bill, your present productivity, and the effect the appointment could have on it (More on this later).

Motivate Workers through Well-designed Pay Levels

The advantages for your business

In a well-designed pay structure, the wage paid for a job is not just a single amount – say, 1000 coins. Instead, the job is put on a pay level, which has a bottom and a top point. Often workers start on the lowest point and gain points as time goes on, such as for each year of service.

If you divide each pay level into a number of pay points you will benefit in two ways:

- You can put a number of similar jobs in a single pay level but starting on different points.
- You can use pay points to adjust the wage to the qualities of the worker.
  - If you have two people doing the same job, but one has a lot more experience than the other, you can pay the experienced worker more pay points.
  - The promise of receiving regular pay points can encourage workers to work hard and stay with the company.

Having clear pay levels in your pay structure will improve the clarity and fairness of pay decisions in your business and so improve worker-management and worker to worker relations. This means that you will spend less time dealing with workers' grumbles and disputes, and will have more time to focus on your growing business.

This entrepreneur is explaining the company pay structure to a new worker.

An adequate and fair pay structure => increased productivity

What you can do

Checkpoint 31: Give every job a pay range, so that workers have the chance to improve their pay over time, even if they stay in the same job.

1. Design your pay levels

You will need to decide on the top and bottom point of each level and the position and number of pay points within it.

Pay levels are not boxes that sit one on top of the other. They overlap like bricks in a wall. You can decide the difference between the start of each level. Ideally this is between 5% and 20% (but it can be as high as 50%).

See the example in Table One, where the difference in the base salary between levels 1 (100) and 2 (115) is 15 units (or 15%).

Table One	Base Salary	Level Differential
Level 1: Unskilled worker	100	–
Level 2: Skilled worker, Clerk	115	15%
Level 3: Quality inspector	132	15%
Level 4: Team leader	145	10%
Level 5: Accountant	159	10%

Table 1: Example of pay levels in a business

In Table Two, the difference between the bottom of level 1 and the bottom of level 2 is 5 more than the bottom of level 1. This means that a worker in level one who has many years of service can earn the same wage as a worker starting in level 2 and even level 3.

Level 1 in Table Two, could be divided into 5 pay points of 20 coins each (total possible increase is 100 coins). A point is normally awarded based on fixed criteria – for instance, for each 2 years of service an employee would go up one pay point). So, if for example, a worker works at the enterprise for 2 years, his or her wage increases by 40 coins (in addition to any changes to take account of inflation).

2. Fix pay levels for your business budget

When designing wage levels, you will need to take into account the impact that appointing people on these pay levels could have on your productivity in the future. If your productivity will not cover these costs, you can:

- look for ways to increase productivity through improvements in efficiency or organization
- try to decrease other costs, such as reducing the price paid for raw materials

BUT, if you are not able to balance the books you will have to look again at your job pay levels.

Table Two: Another way of showing pay levels

	Levels	
5		320-420
4		310-390
3		255-350
2		225-315
1		200-295

Wage range in pay
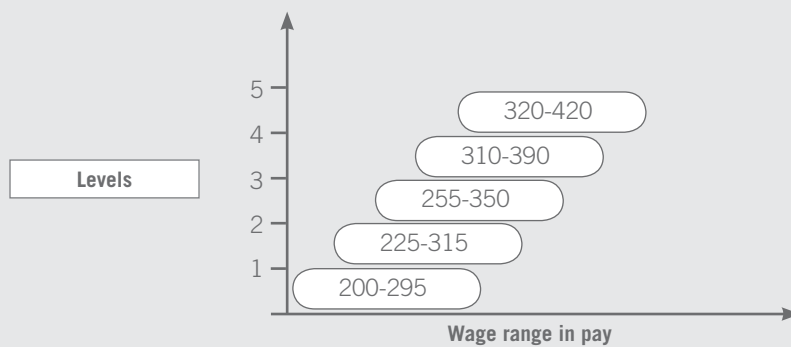
**Pay attention to jobs with high turnover
or those that are difficult to fill**

The benefits of overlapping pay levels: rewarding loyalty and experience

To build loyalty, it is important that long service is properly rewarded in pay levels. In the example you can see that a worker with , for example, many years of experience and dedication in a level 1 job can earn as much as a new worker on level 3.

Checkpoint 32: Consult on your pay structure and pay levels with your workers and their representatives.

Employers and workers talk about pay and incentives.

3.   Be open about the way your pay points are decided upon

When you design your pay structure you will need to make clear the criteria for awarding pay points. These might include points for:

- For each year (or number of years) of experience
- For each year with the company
- Training or diplomas obtained
- Extra duties taken on

4.   Think about other working conditions too!

The pay you offer should just be one part of the employment package, which should all be designed to boost the motivation of employees. (See later)

Pay points can be a motivator or a de-motivator:

If the way pay points are given or earned is clear, workers can see how they can progress and improve their pay. If, on the other hand, the reasons for giving them are not clear, pay points will cause jealousy and mistrust.

How to Link Pay to Work Done or Hours Worked

The advantages (and disadvantages) for your business

There are many ways of linking wages to work carried out. The most common is to pay for each hour, week, or month worked. But, there are other ways to calculate pay. Knowing the choices you have, and the advantages and disadvantages of each, will help you to make the best decisions for your business.

> **An appropriate link between work and pay => increased productivity**

What you should know

This worker looks at the price of goods in a shop window then checks if he has enough money to buy something.

There are three common ways of linking wages to work done:

1. ***A fixed wage (money and/or other goods) paid for a time period – hourly, weekly, monthly e.g. 200 coins per week***

   This system is often used for long or varied production cycles, when it is difficult to count output and when quality and stability are more important than quantity:

   Fixed rate pros and cons:

   a) Easy to administer and fixes wage costs/earnings which helps both business managers and workers;

   b) Gives business a more stable work force;

   c) Can add incentives and benefits to motivate and attract workers.

2. *Piece rates or payments by results: an individual or a team of workers is paid per product sold or produced or per task completed*

This system is often used for when output is precisely measurable –gaphen producing many examples of the same object.

Piece rate pros and cons:

a) Business only pays for work done, but output and wage bill not fixed;

b) It can be difficult to set the right piece rate – enough to provide fair wage and to encourage hard work;

c) To maintain fairness and morale, earnings have to be in line across all parts of the business;

d) Workers must have control over speed of output and quality needs to be measurable;

e) Risk of accidents or injuries can be higher:

f) Most workers prefer to work for a fair fixed wage (high worker turnover!)

3. *Mixes of the above (semi-fixed rate): usually a low fixed earning rate with an additional payment for, say, selling each product or attracting each new customer*

This Works best when quality is not as important as quantity, but worker motivation is important to success in the task e.g. selling

Semi-fixed rate pros and cons:

a) Many of the points relating to piece rates apply;

b) The fixed earnings can satisfy the minimum wage, and worker has a basic income for rent, food, etc;

c) Competition between workers can negatively affect worker relations;

d) Workers may be tempted to 'cheat' to sell more (e.g. misinform customers) which can lead to a loss of reputation for the business.

What you should do

Use your judgement! You do not have to choose only one method. You may decide to pay different jobs in different ways.

As you have seen, paying workers a fixed wage is easier to administer and, if set at the right level, it provides a more stable and trusted workforce. On the other hand, piece rates can encourage workers to work harder. You need to work out what your business needs, and make a choice on that basis. But, don't forget to involve employees in this decision, as this will help you make a choice that is good for worker motivation and performance.

These workers, who are paid a fair rate of pay, are going home after doing a good day's work.

Adjust Wages as the Cost
of Living Changes

The advantages for your business

Unfortunately, the price of fuel, food, and transport, and the employment market, do not stay the same for long. This means that a wage that helped you to attract experienced workers last year may not be enough for a trainee this year.

So, the argument for regular increases in pay is simple – if you don't change the pay you offer you will lose workers and find it more and more difficult to find new ones.

> **Regular wage increases => motivated workers => increased productivity**

What you should do

> **Checkpoint 33:** Adjust wages periodically in order to improve or, at least, maintain workers' standard of living.

A fixed annual review date is the simplest system for wage reviews. Without a review date, as life gets more expensive, workers will start to complain to you and to each other. They will be distracted by looking for ways to keep up with their bills and, as morale drops, so will productivity. But with a regular review pattern, workers will know that their situation will improve and disputes and stoppages are much less likely.

**The minimum wage tends to change from year to year,
so your wage levels should be reviewed to ensure
they respect the up-to-date minimums.**

An employer shares the business financial figures (costs and profits) with his employees.

To promote cooperation:

Meet with workers to discuss changes and give them a chance to present their views on the level of increase that is needed.

Be prepared to share business figures so workers can see the state of the business. Workers can then help to provide ideas for operational changes that will help to support increases in wages.

Encourage Workers with Incentives and Benefits

Incentives and benefits included in your 'wage' package can be used to further motivate and reward workers, but when, why and how they are earned needs to be thought through. Below, you will find just a few ideas on the use of cash and non-cash incentives and benefits.

The advantages for your business

If you have pay levels and pay points, why do you need incentives and benefits on top? The answer is that they are an additional motivator for workers to be efficient and to reach higher levels of productivity. In addition they can help:

- Attract and retain workers.
- Increase workers' sense of belonging.
- Make your business stand out from competitors.
- Improve worker welfare.

But, to get these results, the form and size of the incentives and the way they are awarded have to be known to your workers and seen as fair. If it is not, you will end up motivating one worker and de-motivating all the others!

> **Fair benefits and bonuses => motivated workers => increased productivity**

What you should do

> **Checkpoint 34:** Be sure to give all workers feedback about their performance and what they can do to access or compete for cash and non-cash rewards.

This employer is congratulating two workers on their good performance.

1.   Adopt one or more of these ideas

Types of bonus	Characteristics and advantages for business and workers
Attendance bonuses	For continuous attendance or arriving on time: • Reward workers for being present at work • Decrease absenteeism and lateness
Seniority bonuses	Paid after a given length of service: • Contribute to retention • Can be paid regularly or one-time (say, after 10 years service)
Savings/loans plans	Includes subsidies/good interest rates (e.g. housing, savings or loans): • Low cost way of increasing sense of belonging and attracting workers in high demand
Other bonuses	Performance bonuses, often linked to profits: • boost productivity if rules for giving bonuses are clear and there is a fair chance for all workers • show workers their performance is valued • give workers personal interest in productivity • but, it needs to be made clear, when and why rewards will be paid and who decides them

To promote cooperation: Communicate the rules that you will apply and who can (and who cannot) benefit. Make sure the evaluation criteria for receiving bonuses is clear, equally accessible for all employees, and does not discriminate against some workers because of their sex or age or nationality.

2.   Use non-cash incentives and benefits

Money is not the only thing that workers are interested in. So, when you are looking for ideas to attract and motivate workers, you need to be a little imaginative.

➢   Start by finding out what non-cash incentives your workers would particularly appreciate, by chatting with them, doing a survey or simply asking them for their ideas.

➢   Look at the costs and benefits for each idea: these will include the effect on recruitment and retention, industrial relations and productivity

Some examples are given below:
- Emergency loans
- Providing work clothing
- Food at work
- Providing transport home
- Longer rest periods
- Lunchtime or after work activities, such as keep fit
- Increased paid leave
- Insurance schemes and medical care
- Wage advances or loans

- Less overtime work
- Greater flexibility in working time arrangements to enable workers with family responsibilities to engage in paid work, while also looking after their families
- Educational or training assistance for workers or their children
- Child-care facilities at the enterprise premises or vouchers or subsidies for child-minding services provided by a third party
- Tickets to entertainment or sporting events
- Negotiate with another business to offer price reductions on products to each others' workers
- Provide short term loans for family emergencies, with an agreement that repayments can be deducted from salary.

Rewarding workers by allowing them a little extra time off
can be perfect for workers with family responsibilities.

Opportunities to improve health, work-family balance, leisure and social life, food, training opportunities … may be more valuable to your workers than a little extra cash.

4.9
Create a Transparent Wage Payment System

As an employer, you should always remember and be guided by a simple truth: the main, though not the only, reason that your workers come to work and perform the tasks they are given is because you have promised to pay them! A simple and efficient wage administration system is the best way to ensure that you can keep this promise.

The advantages to your business

If your pay system provides clear pay calculations and ensures the reliable delivery of wages, it will be a foundation for trust and confidence between you and your workers. It will greatly reduce the chance of disputes over pay so business time and energy will not be wasted on trying to identify and put right pay mistakes.

A good pay administration system will provide an efficient way for you to quickly calculate the wages, bonuses and rewards due to workers. It will also set out a clear procedure for making payments.

This employer is paying an employee and asking him to sign a payment record.

What you should do

Checkpoint 35: Keep good records on work done and wages paid, and develop an easy-to-read wage slip, so that workers can check their pay calculation with you.

As wages are paid every week or month, a little time spent on designing your payment system will save you time and energy over and over, for years to come.

The wage system you create and use will depend on a number of factors, including:

- the number of staff you have
- the ways workers' pay is calculated
- any duty to deduct tax, insurance, union dues, insurance, and other legal requirements
- local practice and practicalities
- the staff and technological support you have

When developing a system you should aim to keep things simple to operate and low cost.

The most important elements of an effective pay system are:

1. Put wage information in writing

For example, if a worker is paid by the number of boxes she packs, you will need to provide a way of recording that number and, ideally, a system that records her agreement to this number (e.g. by signing the record). You can apply the same idea to hourly paid workers, with workers filling in timesheets and supervisors countersigning them.

2. Develop an easy-to-read wage slip or receipt

This should be delivered before or with wages and should show how the wage has been calculated. You and the worker should both keep a copy of this, so that you can track earnings (and wage costs) over a longer period. Here is an example:

Salary statement for the period of ____ to ____:	Name of employee _____	Pay reference or employee number: _____
Amount earned	**Company deductions**	**Legally required deductions**
Base wages	– Salary advance repayment	– Income tax
+ Overtime wages	– Loan reimbursement	– Social security contributions
+ Other pay (e.g., bonuses)	– Contribution to enterprise voluntary savings plan or pension	
+ Maternity/paternity, sick pay		
Total gross pay (a)	**Total compagny deductions (b)**	**Total legally required deductions ©**
Total net pay (Gross pay less private and legally required deductions) (A-B-C)		(Cumulative) Year-to-date wages
		Number of days/hours worked during period

3. *Think about security*

If you pay your workers in cash and in a regular way (say, every Friday) you will need to give attention to the risks that this creates for you and your workers.

- Always check the references of workplace security workers and accounts workers carefully
- Use a safe to keep money secure
- Be careful when transferring money from home or bank to the workplace and do not do so at a regular time or take a regular route
- Provide transport home or encourage workers to have family members collect them

4. *Advise workers:*

- not to share the details of the payments dates or systems with others
- to put pay packets away so that they are not visible or easy to reach while workers are travelling home.

4.10
Use your New Pay Policy for the Advantage of your Business

If you keep your new pay policy locked in a draw, you will not get good value from it. So, having spent valuable hours and energy creating your new pay policy, it is worth thinking about how best to share it!

> **Checkpoint 36:** Get maximum impact from your wages and benefits program by communicating it clearly to workers.

The advantages for your business

By sharing your pay policy with your workers, you have immediately saved yourself or your managers a huge amount of time in answering individual questions. If each worker has a copy, and you put an extra one on the notice board, your workers will be able to find the answers to questions they have now such as, 'Why am I on point one of pay level 1?', or 'What happens to my salary if I take maternity leave?' without bothering anyone.

Small mistakes in paying workers can turn into confrontation and suspicion, so having written procedures for queries and complaints will help to reduce tension by reassuring workers that their concerns will be dealt with.

What you should do

1. *Be ready to answer questions*

    Make sure workers have easy access to a payroll person in case there are questions about calculations or errors are made.

2. *When corrections in payments are needed, make them quickly.*

3. *Involve your workers*

    Involve your workers in setting wage policies and procedures, and get their feedback on any incentives you propose. In a small enterprise, joint employer-employee participation can take the form of a committee composed of one employer's representative and two employee representatives. It is important to involve workers who have a direct knowledge of the main jobs that are to be evaluated. Female workers should participate in the evaluation, so that the characteristics of jobs done by them are not overlooked.

4. *As a minimum, every worker should be given information about their base pay, work schedules, and annual leave.*

Checkpoints for WISE-R Module 4 Managing wages and Benefits

Checkpoint 26: Be clear, fair, and consistent when you decide what amount you will pay your employees.

Checkpoint 27: Create an organizational chart with everyone, including you, on it.

Checkpoint 28: Prepare a comprehensive job description for each job.

Checkpoint 29: Rank jobs by comparing the skills they involve and their importance to YOUR business.

Checkpoint 30: Do not pay any worker less than the minimum wage in your country.

Checkpoint 31: Give every job a pay range, so that workers have the chance to improve their pay over time, even if they stay in the same job.

Checkpoint 32: Consult on your pay structure and pay levels with your workers and their representatives.

Checkpoint 33: Adjust wages periodically in order to improve or, at least, maintain workers' standard of living.

Checkpoint 34: Be sure to give all workers feedback about their performance and what they can do to access or compete for cash and non-cash rewards.

Checkpoint 35: Keep good records on work done and wages paid, and develop an easy-to-read wage slip, so that workers can check their pay calculation with you.

Checkpoint 36: Get maximum impact from your wages and benefits program by communicating it clearly to workers.

WISE-R

More
Work Improvement in Small Enterprises

Module 5

Family-friendly
Measures

Developed and piloted within the ILO/DANIDA project:
Improving Job Quality in Africa through concerted efforts by Government, Employers and Workers

Conditions of Work and Employment Programme

Introduction

What are "family responsibilities"?

"Family responsibilities" refer specifically to responsibilities in relation to sustaining and taking care of your family. They involve a number of unpaid activities, which are fundamental to a healthy society and workforce.

These unpaid services consist of providing care for infants and children (active and passive), the permanently ill or temporarily sick, as well as for older relatives and the disabled; and they can involve household maintenance, cleaning, washing, cooking, shopping; special events (e.g. funerals) and all volunteer work for community services.

Bear in mind two very important aspects that impact on the division of family responsibilities:

- There exist some *biologically determined differences* between women and men that are fixed. For example, only women can bear and breastfeed children (biological difference linked to **sex**).

- Other *socially and culturally determined differences* between the sexes are changeable and can vary over time, both within and between cultures and social groups. For example, both women and men can *rear children, take care of dependents and perform unpaid domestic activities and voluntary community work* (societal differences linked to **gender factors**).

> Typically, women shoulder most family responsibilities. However, men can and should share family responsibilities. Both women and men at the workplace will welcome family-friendly measures that help them care for family dependents, while also allowing them to be productive and valued employees at work. Pregnancy and nursing are the only circumstances that require special measures only for women.

This module will help you:

1. To understand family responsibilities and their link with your business and productivity;
2. To address maternity-related workplace issues;
3. To formulate and implement practical family-friendly workplace measures.

Why family responsibilities are part of working conditions?

Both workers and employers need the financial resources that they gain from working to provide for their family members. At the same time, they must ensure that their family dependents are looked after during working hours.

Often family and work responsibilities can lead to considerable conflicts and stress for workers and their families, having negative consequences for business productivity and efficient workplaces. Some working conditions can prevent workers reconciling their work and family responsibilities, harming both business and family interests.

Some key points related to family responsibilities are:

- They affect both women and men.
- Women tend to bear most responsibility for domestic tasks and care of dependents due to inequality at home and at work and gender stereotypes.
- Family responsibilities depend on the actual caring responsibilities of carers, not just legal status (married, divorced etc.).
- They involve a lot of domestic unpaid activities and can be very time-consuming.
- They may involve caring for young people and/or caring for elders.
- They can also involve single people (aunts, uncles, sons, daughters, siblings, adoptive/foster parents, widows, lone parents etc.) not just couples.

A number of societal changes and conditions influence work-life balance greatly:

- Women have increased their participation in paid work;
- Family members are less available to help parents with family responsibilities (migrations, increased need for income, older siblings' school attendance);
- Lack of public health and social care services;
- Impact of HIV/AIDS on families and/or carers - increased illness and care needs of family members, number of orphans, and funerals.

Have you or your workers ever experienced one of those circumstances?

In relation to family life, while men and women can share most responsibilities, women have the special role of maternity. This can represent an extra physical and psychological challenge for women during pregnancy and the post-natal period, which can be an increased source of work-family conflict.

Remember

Work-related problems may be linked to work-family issues.

Why family-friendly measures are good for your business

Employers can help reduce the negative effects of work-family issues through family-friendly measures that support stable and productive relationships, both at work *and* in family life.

While the government holds the main responsibility for setting the enabling legal and policy framework, much can be also done at the enterprise level, through collective bargaining agreements and/or management practices, to make conditions of work more compatible with family responsibilities.

> **Implementing family-friendly measures is a business strategy with a dual agenda of creating a win-win situation, achieving both organizational effectiveness and employee well-being.**

Positive work-family measures can lead to economic benefits because they:

- improve working relationships, morale and job satisfaction, reduce absenteeism and labour turnover;
- make it easier for employers to attract and retain talented and experienced workers;
- promote equal employment opportunities, reduce inequalities and prevent economic and social exclusion;
- reduce losses to individual employees and their families, improving their social and economic wellbeing and workplace conditions;
- are an important social measure, which contribute to increased growth and prosperity;
- improve the image and corporate social responsibility of the company.

What are workplace family-friendly measures in small and medium enterprises (SMEs)?

Family-friendly workplace measures are actions or procedures that help workers reconcile their work and family responsibilities. They refer to arrangements in work organization, systems and processes targeted at achieving work and family balance for the staff in their daily work.

Implementing a set of family-friendly measures may be very different for large firms and work settings than for small and medium enterprises, which may have different needs and resources.

SMEs are often organized around a family and managerial decisions can be implemented directly (being more informal and less bureaucratic). However, in many cases, the work and family pressure on employees in a smaller organization can often be higher than in a larger one, since the smaller number of employees may limit the opportunities for flexibility and imply high dependence on each person's contribution.

Limited financial and staff resources mean that the methods of achieving family-friendly workplace measures might require innovative and low-cost solutions, which, though small and relatively simple, can make a big difference.

Such arrangements can cover a range of options, including:

- **work organization and working hours arrangements**, such as flexible working hours and organization, part-time work, job-sharing, work from home;
- **statutory and non-statutory leave** for reasons such as family emergencies, paternity leave, illness or care for family members;
- **maternity protection arrangements**, such as maternity leave with pay, employment protection and non-discrimination, health protection and breastfeeding facilities;
- **Workplace care facilities and arrangements for family responsibilities**, such as workplace nurseries; partnerships for community-based social care services for elderly, sick and disable people; after-school spaces; subsidies for childcare; practical workplace support and information for employees taking care of a family member.

This Module reviews these family-friendly workplace measures and explains how to implement them at low or no-cost. The Module is divided into the following sections:

1. Make working time work for everyone;
2. Family-friendly leave arrangements;
3. Maternity protection at the workplace;
4. Help with care arrangements.

Make Working Time
Work for Everyone

As the manager of the enterprise, it is very easy for the time you spend at the workplace to get longer and longer, and the time you dedicate to your family to get shorter. When this happens, your performance at work may go down as your fatigue and stress increase. Many workers, who have little control over their working hours or shifts, face the same problem.

The results of this can be sickness, absences, lateness and, consequently, lower productivity. But good management of working time can greatly reduce such problems.

This entrepreneur is tired and still working late at night.

The advantages for your business

When your employees are unable to cope with their work and home responsibilities, this increases the pressure on you, and so has a double effect on your business. Taking positive control of working time costs nothing and can substantially improve productivity because it:

- Reduces stress levels;
- Reduces fatigue;
- Increases attendance and concentration;
- Reduces accidents;
- Improves morale and loyalty.

Changing such things as the length of the working day or the start time of a shift can have a strong impact on your ability to recruit and retain workers.

This manager is reprimanding an employee who arrived late, and does not know that the worker's child is in hospital.

What you can do

Checkpoint 37: Consult your workers on their family responsibilities and the difficulties they might have balancing these with workplace demands.

Lunch time can be the ideal time for employers to sit with workers and learn about the work-family challenges they face.

1.   Consult your workers:

Clashes between work and home responsibilities are often caused by a lack of flexibility at work and at home.

The challenge of successfully implementing workplace family-friendly policies is to meet the needs of your business whilst meeting those of your workers. Consulting your workers is key to identifying potential work-family conflicts as a basis for effective problem solving.

Understanding the problems faced by workers with family responsibilities, as well as the extent to which they affect your business objectives, helps you identify the most appropriate work-family measures.

During the consultation process, it is important to involve both men and women from different sections of the workforce, different age groups and diverse family and community backgrounds. This ensures that people's diverse needs and interests are taken into account. It also prevents the measures from being perceived as imposed or as "special perks", since a better work-life balance can benefit everyone.

Special consideration should also be given to the impact of HIV/AIDS and the other serious health problems on communities and the businesses in the areas of high prevalence.

2. Avoid long daily or weekly working hours:

Long hours do not equal higher productivity. In fact, the opposite can be the case. If you are spending 12 hours a day at work (not to mention travel time), it is likely that fatigue will make you inefficient, moody and prone to accidents. You are also very unlikely to have much time or energy for your family.

This entrepreneur and manager are monitoring the hours that individuals have worked.

Checkpoint 38: Arrange working hours with workers' family responsibilities in mind.

3. Design working time arrangements to be family-friendly:

There is not one 'right' way to do this, because it depends on your staff and your business. When you decide on your working time arrangements, you should keep in mind the difference they can make to your productivity and to your workers daily lives.

Be also aware of any national or local laws on the maximum number of weekly working hours and rest. They will help you to decide what working hours are reasonable.

This father's work schedule makes it possible for him to pick up his child from school after work.

4. *Some more tips:*

- Changing from rotating to fixed shifts offers workers more predictable schedules, which may fit much better with family routines;
- Offer shorter working hours or flexi-time arrangements (where workers have a set number of hours to work, but have some choice when to work them);
- Schedule meetings within normal working hours;
- Allow workers to have some control over their working hours, e.g. doctors visits, administrative formalities, etc.;
- Agree with carers what they can do if normal care arrangements breakdown, such as bringing children to work or working from home.

Checkpoint 39: Consider work sharing and job rotation, to allow workers to fill in for each other when someone is absent.

If you give workers a chance to learn more tasks and to take more responsibility, you will be increasing their skills and you will be able to rely on them to handle things when you or other workers need to take time away from the workplace. This can be useful for covering work when workers go on leave and when unexpected family emergencies require a worker to be absent on short notice.

To promote cooperation: Regularly consult with your workers about the working hours and shifts that would help them to meet their family and work responsibilities.

**For more training and practical tips
you can refer to the WISE-R module
on working time (Module 3)**

Family-Friendly Leave Arrangements

Everyone, including you, needs a break from work, whether for a holiday or for special reasons that arise now and again. Leave arrangements, according or in addition to leave entitlements provided in the labour legislation, influence the ability of workers to be absent for a short period to deal with a family emergency or to take a more prolonged leave for caring responsibilities.

The main leave arrangements of importance to workers with family responsibilities include:

- annual leave;
- sick leave;
- short emergency or care leave (for unexpected family problems or planned care needs);
- maternity, paternity, and parental leave.

Some of these leave arrangements (such as sick and emergency leave) will arise on short or no notice. However, most leave can be planned for so that you can maintain productivity and meet your business deadlines.

The advantages for your business

Trained and productive workers are a valuable asset in any business, so you should do your best to keep them. Providing paid leave is an attraction for experienced workers and it also improves performance because it provides workers with an opportunity to rest and rebuild energy so that they can continue to be productive at work.

More details on leave policies

1 **Annual Leave**

Annual leave is the period during which workers take time away from their work, while continuing to receive an income and to be entitled to their labour rights. Workers can take a specified number of working days or weeks of leave, with the aim of allowing them the opportunity for extended rest and recreation. Annual leave is available in addition to public holidays, sick leave, weekly rest, maternity and parental leave, etc.

Annual leave applies to all workers, irrespective of their family responsibilities. Allowing the employee concerned to have an influence on the timing of when annual leave is to be taken is important to enable him or her to plan the leave together with family needs, such as school holidays.

2 **Sick Leave**

Sick leave usually arises without notice, but being clear about how absences need to be reported and when a doctors' note is necessary will help with both management of workers and planning.

3 Short Emergency Leave

When daily routines are well organized, workers should have less need to be absent for family emergencies. Nevertheless, there are various types of unavoidable events which mean that workers need short-term absences. These events can include the sickness of a child or an elderly dependent, a doctor's appointment, a spouse's accident, the death of a relative, meetings with teachers or administrative formalities.

Lack of support for family responsibilities may constrain some workers to resort to absenteeism (use of unplanned annual leave, call in sick or taking leave without pay) to cope with those emergencies. Unplanned absences may be less necessary when a solution is available.

Sometimes provision for short emergency leave (some with wide definitions of emergency and others for specific events, such as bereavement) exist in the legislation, or more commonly in collective bargaining agreements or enterprise policies.

4 Maternity Leave

Maternity leave is the mothers' period of rest in relation to childbirth, which is a crucial means of protecting the health of the mother and her child. Please refer to section 4 below, *"Maternity Protection at the Workplace",* for more information on maternity leave.

5 Paternity leave

Paternity leave is leave for the father around the time of birth of the baby and is a key leave arrangement to promote equal sharing of family responsibilities between women and men.

Paternity leave is becoming more and more common in national law and in enterprise practice, particularly in collective bargaining agreements, reflecting the increasing importance attached to the presence of the father around the time of childbirth. Among the countries for which there is information on national provisions for paternity leave, the duration ranges from one day to three months and it is usually paid.

This father is pleased to have some time off to spend with his new baby.

6 Parental Leave

Parental leave refers to a planned longer-term leave available to either parent to allow them to take care of an infant or young child over a period of time usually following the maternity or paternity leave period. As provided in the ILO Recommendation on Workers with Family Responsibilities, 1981 (No. 165), both the mother and the father should have a right to take parental leave.

What you can do

Checkpoint 40: Inform your workers about all of the types of leave that you provide.

1. **Have clear leave policies:**

   These should explain to all workers their rights to take leave, the number of weeks they can take, how it should be booked, the notice required, and the pay that workers will receive. Having clear leave policies in place will help you and your workers to plan ahead for the benefit of the business.

These workers are able to check the enterprise leave policy, which is placed on the wall.

Checkpoint 41: Plan ahead for leave, so you avoid stoppages or interruptions that may cause loss of productivity.

2. **Plan ahead:**

   Most leaves can generally be planned ahead of time. Make sure you have a leave calendar that is available for everyone so that absences can be planned as a team.

   Planning ahead for all events and absences will keep your enterprise working smoothly. If, for example, a maternity leave is needed, good planning could include a pregnant worker showing others how to do her job before she takes leave. Planning ahead will help you to maintain production and reduce costs from sickness or unplanned absences.

3. **Give workers as much free choice as possible** about when they take their leave so that they can match it to family needs e.g. for school holidays and care of family members.

4. **Keep a clear record of leave taken** so that you can always know how much leave workers have left to take and you can take this into account in your production planning.

5. **Be flexible to help workers cope with family emergencies:**

   Try to accommodate parents with family responsibilities by providing additional leave days to cope with these emergencies and needs. Accepting that some sick leave can be used officially for such emergencies or planned events can also make a difference.

6. *Provide pay during leave:*

Pay is always important to workers. During sickness, and during maternity and paternity leave, this is especially important. Very few can afford to take time off if they are not paid and, usually, a sickness or a birth can involve a lot of expenses. On the other hand, if the leave is not taken, the consequences for the worker and business can be substantial.

If sick workers do not take time off, they can pass illnesses on to other workers, and can end up with long term health problems resulting in repeated absences. Absences relating to the birth of a child are also essential. If mothers do not take maternity leave, their health and the health of their children can suffer, resulting in increased absences due to sickness and poor health.

> If a social insurance system is in place, maternity and paternity leave will cost you nothing and it will help keep your employees healthy and able to return to work for you after their leave. In some countries, however, the law demands that employers pay workers during maternity and other leaves. Where no public safety net or maternity payment law exists, you will need to make a choice about what help you offer, bearing in mind the financial resources of the business.

The business arguments for paid leave:

Paid leave is a good investment because:

- The worker is likely to stay with your enterprise for many years;
- If the worker comes back to work early because of financial pressures, he/she may end up being absent later because he/she will not have taken the rest needed to properly recover;
- A rested, healthy worker will perform work more consistently and make fewer mistakes. Working when tired or unfit can cause mistakes or accidents due to poor concentration;
- You will save recruitment and training costs if your staff turnover is low;
- The worker has no other income.

5.3

Maternity Protection at the Workplace

Any life experience or event that affects you or your workers can also affect your business and its productivity. Maternity is a very significant event in the life of any woman and her family.

Maternity protection involves a combination of measures, designed to provide working women with protection from discrimination, harm or loss arising from pregnancy and maternity at work. Workplace maternity protection measures include:

- **Maternity leave:** Maternity leave is a paid leave of absence from work for maternity-related reasons. It is taken by a woman in the period around childbirth to protect her health and that of the child.

- **Employment protection and non-discrimination (the right to return):** This guarantees pregnant and nursing mothers that they will not lose their job because of their pregnancy and maternity and they will return to the same or equivalent position paid at the same rate after their maternity leave.

- **Health protection for the mother and her child, before and after birth:** This involves making sure that the workplace and the work practices are safe, so that a pregnant worker and her child are not injured or hurt.

- **Arrangements for breastfeeding:** This involves making simple arrangements so that mothers can continue to breastfeed when they return to work. Breastfeeding is vital to the health of the mother and child.

The following sections include more practical details on the implementation of those maternity protection components at the workplace.

The advantages for your business

1. *A good investment:* Experience shows that pregnant workers who have decent working conditions continue to be fully productive members of the workforce during their pregnancy and afterwards.

2. Generally speaking, it takes less management time and effort to manage maternity in the workplace well, compared to replacing workers who have to leave because of lack of protection.

This pregnant worker is able to carry on working without any problems.

3   Managing workplace maternity protection well can:

- enable women to work productively without disruption. Pregnant workers feel reassured, enabling them to concentrate fully on their job.
- reduce costs and help attract and retain experienced staff. Having long-serving and healthy workers is key to business growth;
- enhance the reputation of your enterprise, ensure business continuity, productivity and quality of services and products.

This chapter is divided into the following sections:

Part I: Some maternity basics you should know

Part II: Maternity leave and employment security

Part III: Health protection

Part IV: Arrangements for breastfeeding

PART 1: Some maternity basics you should know

Maternity is the period that covers the essential stages in human reproduction from conception to birth and up to the end of breastfeeding. Ensuring the health of mothers during this time is not only important to them and to your business, but also to the wider society and the future generations.

Pregnancy is not an illness and working during pregnancy is not, in itself, a risk, except immediately before or after the birth. Many women continue to work late into their pregnancies without any problems, remain highly productive, and return to work afterwards to resume normal duties.

Throughout the pregnancy a woman's body provides the space, nutrition and the life support needed to develop a child from one cell to a whole living and breathing individual. At the most basic level, the food a pregnant woman eats and the water she drinks must be enough for her own body and for the development of her baby. In fact, all her experiences, such as the air she breathes or the stress she feels, can have an effect on her future child.

A pregnant woman is eating and drinking for two people – herself and her baby.

The following is a short description of the changes that a woman experiences during pregnancy.

Stage 1: Early pregnancy (the first 3 months)

Strong smells make this pregnant woman feel sick.

A few months into a pregnancy, it is usually possible to see that a woman is pregnant because her shape changes. But this is not the only change that you need to be aware of. The chemicals and hormones inside the woman's body also have to adjust to provide the baby with a healthy environment. Together, these changes can affect pregnant workers in many ways:

- discomfort and nausea;
- sensitivity to smells;
- tiredness and the need for more rest breaks;
- the need to drink (and go to the toilet) more frequently.

As a general rule, the risk of miscarriage is greatest in the early months of pregnancy, so a healthy diet, plenty of sleep, gentle exercise, plenty of drinking water and early health checks are important in this critical stage.

Stage 2: ***Mid- to late pregnancy (4 − 8 months)***

As the baby develops further, the mother's ligaments soften so that her body is ready for the birth. This makes a pregnant worker more prone to injuries caused by lifting or handling heavy things.

As a pregnant woman gets bigger, bending can be difficult and more dangerous.
Having a work station that avoids the need for bending can help a lot.

When pregnant, the amount of blood in a woman's body increases. This means the heart of a pregnant woman has to work harder, especially when she is doing physically demanding work. As a result, the worker may experience:

- problems standing for long periods and dizziness;
- muscle aches and pains;
- loss of balance more easily;
- changes in breathing patterns that can result in inhaling more pollutants.

These changes are normal, but they make enormous demands on the woman. For instance, the daily energy requirements for simply maintaining the state of pregnancy (before doing anything else) are equivalent to two to three hours' arduous physical activity. Pre-natal medical visits are also very important at this stage.

Stage 3: ***Before and after the childbirth (9 months − 3 months after)***

In the final weeks of pregnancy a future mother needs to rest more and have some time to prepare herself and her family for the new arrival.

Each couple divides family tasks differently, but it is often the case that women do most work in the house and with the children. At this point in the pregnancy, fathers or other relatives may need to take on responsibility for some of the tasks that they may normally not do, such as collecting children from school. This can be a problem if their hours of work are inflexible.

Giving birth makes enormous demands on the woman and sometimes it may involve risks or health complications for the mother and her newborn, such as: delivery by caesarean section, multiple births, premature birth and stillbirth. However, regular medical checks and attention can often help detect and prevent problems.

This new mother is taking a much needed rest, with her baby.

After delivery, the woman needs time and rest to heal and recover. At the same time, the baby needs attention from both parents and feeding. Recovery time helps prevent complications, such as infections, abnormal clotting or haemorrhage after birth. Some women may also suffer from fatigue, anaemia, diabetes or post-natal depression. Health protection, including post-natal visits and vaccinations, is also vital in the post-natal period.

Stage 4: Breastfeeding

This is the last stage of maternity but extremely important for the future health of both the mother and child. Please refer to section 3.3 below, *"Arrangements for breastfeeding"*, for more information on this component.

Remember
- Pregnancy, childbirth and breastfeeding are not illnesses, but affect people differently;
- They place extra demands on the woman;
- Harm can occur at any stage, including harm to men and women before conception, but workplace health protection can help avoid the risks;
- Medical attention and preventive health care play a vital part in maternity protection, especially if there are risks of complications;
- Healthy breastfeeding protects both mother and child.

Make workplace maternity protection a reality

This part provides practical information to implement workplace maternity protection in your SME. Employers should, of course, comply with their national legislation, but you can also go further. You can:

● improve and extend maternity protection provisions;

● take practical and zero-cost action in the workplace;

● adapt and replicate models of good practice;

● train managers and supervisors so that they understand, implement and support the measures on a day-to-day basis.

PART II: Maternity leave and employment security

Maternity leave is leave of absence from work for maternity-related reasons. It is not sickness or holiday leave. It is taken by a woman around childbirth to protect her health and that of the child. During this time her employment is protected and the woman has the right to return to her job or to a comparable post with no loss of pay or seniority on her return.

Maternity leave is so important for the health of the mother and child that almost all countries have laws to provide for it and set out how much pay the worker should be paid during her absence. It is important for you to know your country's requirements, your business needs, and your workers' needs to assess the amount of time you should provide for maternity leave.

This new mother is healthy and ready to get back to work after a period of maternity leave.

The ILO Maternity Protection Convention, 2000 (No. 183) provides:

● a minimum period of 14 weeks maternity leave, including a compulsory period of 6 weeks leave following childbirth

● Income replacement during leave of at least two-thirds of earnings, preferably through social insurance benefits or payments from public funds during this time. This is intended to prevent the woman from being pressured to return to work as this could put her health or that of the child at risk.

What you can do

Checkpoint 42: Provide all workers with maternity and paternity leave, and the right to a similar job at the same pay when they return.

If maternity leave is not paid through social insurance or public funds in your country, and if the law does not require employers to provide pay during maternity leave, you could still think about alternatives, such as:

- voluntary payment of maternity leave benefits;
- helping the worker to save in advance;
- giving the worker a small advance on future pay with a long repayment period.

1. **If workers think they will lose their job if they take leave, they are not likely to take it, even when it is essential.** Nowadays, most new mothers want or need to return to their former job after leave, so that they can carry on meeting family expenses and, where possible, maintain their career path. This is good news for businesses.

   Knowing that leave comes with the right to return will reassure workers and improve their loyalty and their feeling of being valued by the business.

   This manager and worker are planning for the worker's return to work.

2. **Allow pregnant workers to stay working as long as they feel able** to before the birth, so long as the law allows this. Most are keen to keep earning and prefer to save their leave for after the birth.

   This worker is healthy and able to carry on working late into her pregnancy.

However, you also need to be aware of national laws on this. Some laws, for example, require that women have a medical check-up to determine how long she can work before the birth.

3.   **Remember men have babies too** (not physically of course) and should be given leave (paternity leave) to spend time with their new baby and support the mother as she recovers. Fathers may take some of this time at the birth and some later. This can also be planned for though, again, flexibility is very important.

Finding out when a worker is pregnant

If employees understand the need for advanced planning and have confidence that they will be treated fairly, they will report their pregnancy early. Never interrogate or intimidate employees to get this information.

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4.   **Build trust by being open about maternity protection and telling workers clearly:**

   - you will be allowed to take some time off for medical checkups;
   - during maternity leave, you will (or will not) receive pay or social insurance benefits (essential for financial planning);
   - we will welcome you back after maternity leave into your present job or a similar one;
   - you will be considered for promotion equally with other workers;
   - you will be able to take breastfeeding breaks for a period (state the number of months) when you return to work.

5.   **Discuss maternity protection planning periodically, as part of routine consultations with workers.** It is good practice to consult your workers or their representatives when considering any working conditions, including maternity protection. In fact, an individual worker's pregnancy may raise issues that need to be discussed with other workers. In a small business, one worker's pregnancy might have an effect on other workers. For example, other workers may have concerns that a worker's absence will affect their workload. Keeping other workers informed will reduce this possibility.

Most new mothers are happy to receive a visit from work colleagues and catch up on the latest news.

To promote cooperation: It is important that women on maternity leave are allowed to rest and have their time with their baby. However, some women are reassured about their future by being kept up to date. Encourage colleagues (rather than managers) to keep in touch with her informally and, near to her return date, you could send her a message to let her know that, if she wishes, you would be happy to talk to her about her future work schedule needs.

This manager is consulting with workers on how best to arrange work tasks whilst one worker is on maternity leave.

**Do not tell workers any personal or confidential information about another worker, including maternity information.
It is for each worker to decide how much information to share with workplace colleagues.**

6. ***To encourage information sharing, make it clear to workers that your door is always open to them.*** If a worker tells you that she is pregnant, advise her of the protections you provide and encourage her to keep you informed of her plans.

- Ask your workers to help in planning work reorganizations.
- Give other workers the chance to extend their skills by temporarily replacing the pregnant worker or swapping jobs.

This pregnant worker is training a colleague to do her job in preparation for her maternity leave.

7. ***Learn from pregnant workers about their needs and what medical professionals are advising.***

PART III: Health protection

During pregnancy, childbirth and breastfeeding, there are certain things or actions at the workplace that may be hazardous for the health and safety of pregnant workers or their babies. Some of these will also be harmful for male workers, and can affect their fertility or their ability to father healthy babies.

Maternity protection does not mean you will automatically have to make changes to workplace practices or incur costs. Often, no changes are needed, but this depends on the industry, the job the worker does and the conditions she works in. But, as an employer, you can be held responsible for injuries to workers if they are caused by a workplace hazard. Acting to remove risks could save your business from expensive work interruptions.

The advantages for your business

Most risks that pregnant workers face can also be dangerous for other workers, e.g. working in extreme heat or at height. This means that any hazards that you are able to remove will improve the health and safety for all workers and so lower the number of accidents and stoppages.

Experience has shown that reorganizations made to improve conditions of work can directly improve process efficiency and motivation and can add to, rather than reduce, profits.

What you can do

Checkpoint 43: Carry out a risk assessment (including those relating to exposure to chemicals) and discuss it with your workers.

1. *Identify workplace risks:*

All workers face risks at work. These can be very obvious, such as the risk of injury from lifting and carrying heavy loads or the chance of ingesting pollution when working with chemicals.

Accidents can happen to anyone. However, the consequences can be more serious for pregnant workers.

Other hazards are more subtle, such as the effect of the timing, length and flexibility of work shifts and breaks. Of course, any worker can trip and be injured or become sick if they have no rest. However, for pregnant workers, the results can be more dangerous. For example, without frequent toilet breaks, a pregnant woman can develop a kidney infection.

Every workplace is different. This is why you or a manager needs to go around the workplace and do a risk assessment with the needs of pregnant workers in your mind.

Identify the action to be taken, which may include training on safe handling, the use of personal protection equipment, or a temporary transfer of an employee to another post.

This pregnant worker is being transferred to work away from these chemicals, as they represent a risk to her and her baby's health.

> **It is important that risks are monitored continuously and you do not wait until you know a worker is pregnant to think about this. A worker may not know she is pregnant for the first few months, which is the time when the growing baby is most vulnerable.**

Involve the pregnant worker and/or her workplace representative in the risk assessment process. You can help each other to identify and understand the risks or problems and come up with solutions together.

To promote cooperation

When looking at the risks and solutions, involve workers (including the pregnant worker) and their representatives. They may have some good ideas and will be pleased to be consulted.

Checkpoint 44: Take action to remove identified risks.

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1.   *Take action!*

When you have completed the risk assessment, you may end up with a small list of work-place risks. Now you can act to remove these risks where possible or reorganize things, so that all of your workers, including those who are pregnant, can work safely. Many actions can be low-cost or even no-cost.

Remember that the needs of pregnant women change as the pregnancy progresses, so a flexible approach is essential.

Does your enterprise use chemicals?

If so, see the WISE Chapter on Control of Hazardous Substances. One recommendation is to get a **chemical safety data sheet** for each chemical that you use or produce. These sheets provide information about the chemical, such as how to use it properly, precautions to be taken, and potential hazards for workers of reproductive age. It is important to make sure that you and all your workers understand the data sheets and take action to remove/avoid the risks.

**Exposure to toxicants before or during pregnancy can cause women to miscarry
or give birth to premature, low-weight or disabled babies,
as well as significantly increase the risk of neonatal mortality.**

Checkpoint 45: Ensure ready access to safe drinking water and to clean toilets, at any time, without restrictions.
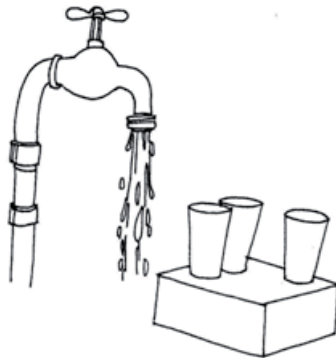
Checkpoint 46: Accommodate or reassign pregnant workers to tasks that do not require continuous standing, uncomfortable movements/postures, heavy physical effort or risk of slipping and falling.

Other basics steps include:

➤ Remove tripping hazards;

➤ Provide a chair or stool for sitting while working, or rotate jobs. Standing for long periods is not comfortable for anyone. For pregnant women it can cause swollen feet, make walking painful and increase the risk of slips, trips and injuries.

➤ Avoid shifts that have non regular patterns, long hours, or missed rest periods, as they increase the risk of malnutrition, dehydration, and exhaustion.

2. **What if a risk is a part of the job and cannot be removed?** Pregnant workers should not do heavy lifting (more than 10 kg). Where, for example, the process involves moving heavy weights from one part of the workplace to another, you should look for ways to reorganize work processes, tasks, or workers, so the pregnant worker does not face this risk.

  ● Introduce team working so that workers can share their work between them in a way that keeps everyone working and safe;

  ● Reposition storage areas so carrying distances are reduced;

  ● Other workers may be pleased to get the chance to take on a different task for a few months and, at the end of the period, you will have the benefit of a more flexible workforce.

This work team have temporarily changed the way they work, so that their pregnant colleague does not carry heavy loads and can sit whilst she is working.

To promote cooperation:

● Your workers are familiar with the workplace and may have some innovative, low cost, reorganization ideas;

● Cooperation between small businesses can save costs and boost profits. Use your network of WISE employers to make contact with other small business owners and learn how they have improved their workplaces.

PART IV: Arrangements for breastfeeding

When workers with new babies return to work they are likely to be breastfeeding. Supporting working mothers' breastfeeding makes sense because breastfed babies are healthier and are less prone to illnesses. To encourage and support your worker to breastfeed, let her know before maternity leave that when she returns to work, you will provide a clean and private place where she can feed her child or express and store her breast milk.

The advantages of breastfeeding for mother and baby

It is now widely understood that breastfeeding a baby is one of the most important things a mother can do to protect her child's short and long term health, because it:

- Passes on resistance to illnesses from the mother to the child;
- It provides the ideal nutritious diet the baby needs;
- It is hygienic, so the chance of waterborne disease is lower;
- It increases the speed of recovery of the mother;
- It reduces the risk of certain illnesses and diseases for the mother, such as anaemia, breast cancer and ovarian cancers.

Bottle feeding is an alternative, but it does not provide the same health benefits for the child or the mother. It is also a costly and often impractical option for parents who may not have easy access to clean water for sterilizing bottles or making up the powder, at work or at home.

The World Health Organization (WHO) recommends exclusive breastfeeding of babies until the age of 6 months, and continues breastfeeding with appropriate complementary foods for up to two years.

Breastfeeding and HIV

- Pregnant women living with HIV are at high risk of transmitting HIV to their infants during pregnancy, during birth or through breastfeeding.
- Breastfeeding by a mother with HIV increases the risk of transmission to her baby by 5-20 %;
- In many places, though, it may not be possible or safe *not* to breastfeed, especially where water isn't clean;
- WHO advises: *"when replacement feeding is acceptable, feasible, affordable, sustainable and safe, avoidance of all breastfeeding by HIV-infected mothers is recommended. Otherwise, exclusive breastfeeding is recommended during the first six months of life".*

Checkpoint 47: In addition to normal breaks, allow at least one 1-hour break for breastfeeding mothers.

The advantages of breastfeeding for your business

Breastfeeding a baby gives it the best chance of having a healthy future.

The most obvious benefit of breastfeeding for your business will be the lower rate of sickness of both mothers and their babies. This will mean less unplanned leave on the part of mothers and fathers to look after a sick child. You can add to this, higher employee loyalty, motivation and productivity, and a boost to the public image of your business. This will help you to attract the best workers and new customers.

What you can do

> **Checkpoint 48:** Provide a clean and quiet area for breastfeeding or expressing milk.

1. ***Provide a breastfeeding area:*** This does not need to be a fancy space. A weather-protected, screened area, with a chair, access to drinking water, and hand washing facilities, is better than nothing at all.

A simple (low-cost) breastfeeding area, such as this, provides privacy and basic comfort for breastfeeding mothers.

> **A simple breastfeeding programme**
>
> Mothers should have the choice to either bring their babies to work to feed (if it is safe) or express the milk and store it in a bottle for the infant's next feeding after they return home at the end of the day.   Breast milk does not need to be refrigerated for the first few hours after being expressed.
>
> *All you need is:*
>
> * A clean and private room (not a bathroom or toilet) or a screened-off area;
> * A table and a comfortable chair;
> * Drinking and running water and soap for washing;
> * Giving the worker some extra free time for breastfeeding;
> * Managers and co-workers who understand the programme and support it.

Checkpoint 49: Help workers get information on mother-to-child transmission of HIV.

2. ***Provide information on HIV/AIDS:*** Workplace information to address the particular needs of HIV-positive women during pregnancy and breastfeeding (see WHO recommendations in the earlier *"Breastfeeding and HIV"* table) can help mitigate the impact of the epidemic for your business. In particular:

   a. targeted awareness-raising in the workplace and workplace policies can help extend information, education and counselling on HIV/AIDS and pregnancy, facilitate access to voluntary and confidential testing, provide information on infant feeding options for HIV positive women and prevent mother-to-child transmission of HIV. This will help you to prevent recurring sickness of the baby and absence of the mother from work.

   b. Help workers to get access to information on all health matters, including HIV/AIDS, malaria and tuberculosis from the local health clinic or maternity service.

3. ***Offer temporary flexible working time arrangements***

   New babies do not always eat, sleep or get sick, according to a timetable. So, flexibility in working time is important for parents, particularly for mothers who are breastfeeding. It can also help when making appointments for check-ups and immunizations.

   Some employers give mothers the right to reduce their working hours for a period after maternity leave. For mothers who cannot afford this or who want to keep working full-time, or if this would not work for your business, you can help workers in other ways. For example, let nursing workers:

   * arrive a little later (as needed, or with an agreed routine);
   * leave one hour earlier or take an extra 'breastfeeding break' at an agreed time each day;
   * save up some of their break time so they can leave early when needed.

   This enterprise allows breastfeeding mums to start a little later in the morning, so they can feed their baby before going to work.

4.   **Help workers to find childcare near to work if they wish, so they can quickly get to, and feed their child, during the working day or at the end of it.**

These simple arrangements can solve many stressful problems for workers and so improve concentration and performance.

Help with Care Arrangements

Meeting the care needs of family members can be a big challenge for workers, women and men alike.

Care demands of family members are particularly high when workers are responsible for children, elderly or sick relatives. The HIV/AIDS-epidemic in Africa raises a particular challenge. In some countries the infection rates is between 15-25 % of the population. This means in a family with 10 members, 1 to 3 of them will be (on average) infected by the virus.

The help you can give to deal with care needs will depend on the resources and premises you have, and the number of workers concerned.

Some employers provide support by supplying information and advice and permitting flexibility in working time and arrangements. Others directly provide childcare, or give financial help with care costs for children, sick relatives or other dependants. Whatever help you can give will increase your chances of keeping your best workers on board.

When parents know that their children are safe and happy, like those above,
they can concentrate better on their work.

What you should know

The care support needed by workers depends on the number, condition and age of the dependants and the available help with providing care. In many societies, most of the unpaid work of providing care rests on women; however, both men and women have care responsibilities and workplace supports will be appreciated by both men and women.

What you can do

1. **Help and encourage workers to share information and to come together to arrange care.** You could do this by calling a lunchtime meeting to discuss this and see how much interest there is.

2. **Consult all workers to find out their needs and preferences.** For instance, childcare that is close to work can be ideal for some workers, because they can then easily breastfeed or deal with problems that may arise. However, its advantages will depend on the circumstances of each worker and the distance and transportation between the place of work and the worker's home.

> **Checkpoint 50:** Offer practical support to workers with family responsibilities.

3. **Make sure that, in cases of emergencies, workers know they can:**

   - leave work without risking their job;
   - communicate with family members during working hours (use a company telephone).

This office worker is reassured by being able to use a workplace telephone to keep in touch with a sick relative.

4. **Provide a place for children to wait.** Most parents do not finish work at the same time as their children finish school. If you have a small weather-protected space available, this could be used as a place for children awaiting a parent to sit and read or do homework.

This simply constructed waiting area gives children somewhere safe to wait until their parents finish work.

5. ***Develop a list of reputable and affordable child care providers close to the workplace.***

6. ***Help with transport:*** Support transportation needs for workers in remote areas or where / when safe public transportation is not available (e.g. at night).

7. ***Provide HIV/AIDS awareness raising programmes:*** This could include opportunities for voluntary testing, and links with HIV/AIDS business associations (present in most African countries).

8. ***Support unpaid domestic tasks,*** by providing information and/or help with labour saving technology or services for cooking, cleaning, laundry.

Checkpoint 51: Create partnerships so you (and other small businesses) can help workers with care arrangements.

This enterprise has arranged for a local health centre to offer health checks to employees.

9. ***Work in partnership:*** If your business is small, you may not have the resources to tackle all issues. Establishing partnerships and forming networks with other enterprises, employers' and business organizations, NGOs and public bodies can be helpful.

    Small businesses which are close to each other can sometimes join together to:
    - make a childcare area in a rented hall or other safe and covered area;
    - negotiate with a local childcare provider for their workers to get discounted places;
    - advocate for community services for family facilities and home-care;
    - provide HIV/AIDS awareness raising programmes together.

You can encourage two types of partnerships:

- **Business to business partnerships:**
  This entails a partnership between 2 or more companies. It could involve only SMEs or involve an SME establishing a partnership with a bigger company where, for example, the bigger company could include the workers of the SME in their care arrangements.

  Pooling experience, efforts and knowledge with other businesses, to produce imaginative, cost-saving solutions to common challenges can make a difference. As well as saving money, working together can be a way of building contacts and bonds between businesses and within the community.

- **Business links with public and charitable bodies:**
  When thinking about maternity, family responsibilities and HIV/AIDS challenges, there are many organizations that can help you with support and ideas. Your local health clinic, NGO, or local government office is a good starting point for information. To get expert advice, practical guidance, or financial help, children's charities, chambers of commerce and industry as well as trade unions can also help.

  You could work with a local health care clinic or community worker to:

- offer health screenings such as blood pressure checks for you and your employees;
- get help with your workplace risk assessments;
- display some informational posters on health, HIV/AIDS awareness and maternal health.

Business to business partnerships can help small businesses to provide the most attractive conditions and services for staff.

Checkpoints for WISE-R Module 5
Family-friendly Measures

Checkpoint 37: Consult your workers on their family responsibilities and the difficulties they might have balancing these with workplace demands.

Checkpoint 38: Arrange working hours with workers' family responsibilities in mind.

Checkpoint 39: Consider work sharing and job rotation to allow workers to fill in for each other when someone is absent.

Checkpoint 40: Inform your workers about all of the types of leave that you provide.

Checkpoint 41: Plan ahead for leave, so you avoid stoppages or interruptions that can cause a loss of productivity.

Checkpoint 42: Provide all workers with maternity and paternity leave, and the right to a similar job at the same pay when they return.

Checkpoint 43: Carry out a risk assessment (including exposure to chemicals) and discuss it with your workers.

Checkpoint 44: Take action to remove identified risks.

Checkpoint 45: Ensure ready access to safe drinking water and to clean toilets, at any time, without restrictions.

Checkpoint 46: Accommodate or reassign pregnant workers to tasks that do not require continuous standing, uncomfortable movements/postures, heavy physical effort or risk of slipping and falling.

Checkpoint 47: In addition to normal breaks, allow at least one 1-hour break for breastfeeding mothers.

Checkpoint 48: Provide a clean and quiet area for breastfeeding or expressing milk.

Checkpoint 49: Help workers get information on mother-to-child transmission of HIV.

Checkpoint 50: Offer practical support to workers with family responsibilities.

Checkpoint 51: Create partnerships so you (and other small businesses) can help workers with care arrangements.

International
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More
Work **I**mprovement in **S**mall **E**nterprises

Module 6

Create
a Respectful Workplace

Developed and piloted within the ILO/DANIDA project:
**Improving Job Quality in Africa through concerted efforts by Government,
Employers and Workers**

Conditions of Work and Employment Programme

Introduction

As a business owner, you will be used to thinking about safety and health in the workplace, looking for issues that can cause accidents or diseases, and taking action to remove or avoid them. You do this for many good reasons:

➢ because the law requires it;

➢ because accidents cost time and money;

➢ because you want to protect your workers.

Workplace harassment may not be covered by a law in your country but, just like safety and health problems, it can damage your business and your workers.

Harassment at work is very common everywhere in the world but often hidden. Employees who are harassed or bullied suffer in many ways including feeling worried, stressed, or frightened about what will happen to them. They often also suffer a loss of concentration and personal and professional confidence, so that they feel uncomfortable and don't dare to use initiative or share ideas.

When you realize how badly victims of harassment feel, it is easy to see how this could affect their health and their productivity. This module will help you to spot it and to deal with it, so your workplace is happier and your staff can concentrate on doing their best for your business.

The objective of this module

1) To uncover the nature of harassment at work

2) To provide cost-free measures to prevent harassment

3) To help you to contribute to a respectful environment in your company

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This Module is divided into the following sections:

1) Harassment and how to deal with it

2) Develop an HIV/AIDS workplace policy

3) Involve your workers in maintaining a respectful work environment

4) Be a positive model

6.1

Harassment
and How to Tackle it

A 'respectful workplace' is a productive workplace and this is what all businesses aim to be. In a respectful workplace workers and managers treat each other fairly and equally and with respect. Harassment and bullying are the opposite of these things so need to be dealt with.

These workers are arriving at work, happy to have a healthy and respectful workplace.

The advantages for your business

No matter where it occurs, harassment is costly and unproductive. It reduces motivation and productivity, and has a bad effect on collaboration between workers, as well as making the work environment unpleasant.

So it is in the interest of all business to tackle harassment problems and to take steps to avoid them in the future. The good news is that this is not hard to do and costs nothing: you just have to use good management techniques.

What you should know

1.   What is harassment?

Harassment refers to a wide spectrum of offensive or upsetting behaviour. It is a behaviour (normally repeated) that causes someone distress and has no legitimate purpose.

There are lots of other words that are used instead of harassment and which describe a similar idea, such as bullying, tormenting, bothering, or pestering.

2.   Who harasses whom, and why?

Harassment normally happens when there is a difference in power or strength between one person and another. This means that bosses or supervisors can certainly harass workers. But, workers can also harass or bully each other.

The person doing the harassing (the perpetrator) acts in this way because he or she believes that they will win something. The gain could be money, or getting someone else to do tasks for them. But it could also just be the feeling of power or control that they enjoy.

It could happen that the perpetrator is not aware that he/she is disturbing or upsetting the victim (the upset is unintended). Even so, the perpetrator needs to be informed about the undesired effects his/her behaviour has on a colleague. This gives the perpetrator the chance to change this behaviour quickly.

3.   What sort of actions can be harassment?

Harassment comes in many forms. It is present in all parts of the world, in poor and rich countries, and in small, medium and large enterprises. Some common types of harassment are shown in the box below.

A supervisor shouts at a worker.

An angry boss pushes two workers.

This entrepreneur acts inappropriately by putting his arm around his assistant.

4.   Who is most at risk?

> Harassment is normally a build up of actions rather than a single event. It often includes one or more of the actions below:
> - Name-calling.
> - Yelling/Shouting.
> - Physical abuse – slapping or pushing.
> - Criticizing/correcting the employee in front of others
> - Assigning a large amount of work to be completed in an impossibly short time and then criticizing the employee for not finishing the work.
> - Hovering over the employee while he/she is working.
> - Abusing the employee mentally.
> - Making fun of someone.
> - Sexual harassment – where a worker of the opposite sex treats a colleague in a way that suggests or threatens a demand for a sexual relationship
> - Threatening to give poor performance rating or fire the employee if the employee makes a complaint to the owner/manager.
> - Making threats of violence
> - Workers refuse to eat with, or use the same toilet as, a worker known to have HIV.
> - Workers demand protective clothing because of their fear of catching an HIV infection from another worker.
> - Management proposes to move a worker known to be HIV+ from a post where she/he meets the public.

Anyone can be harassed. You, for example, could be harassed by a competitor or by a corrupt official.

But commonly victims of workplace harassment are:

Different: this can be a physical difference such as colour, race, gender, disability, illness, or a difference of personality (being quiet or shy). HIV/AIDS discrimination is common – sometimes provoked by the fact that the person is absent for a long period or is losing a lot of weight.

Isolated: they have no close workplace friends, or they work out of sight of others.

Controlled by a manager or supervisor: they have to do what the bully says if they want to keep their job.

Have no way of complaining: if there are no workplace procedures or policies for dealing with harassment, there are likely to be more victims.

What you can do

Step one: identify harassment risks and problems

Take a good look at your workplace and try to identify the risks of harassment happening and, of course, try to spot any on-going harassment.

Be aware of all types of harassment. Note that sexual harassment is one of the most common forms found in the workplace.

Examples of Sexual Harassment

Unwelcome physical contact

- Rubbing or brushing against one's breast or behind.
- Repeatedly squeezing a worker's shoulder and putting a hand around her waist.
- Exposing body parts.
- Excess attention.
- Forcing sexual interaction – physical assault and rape.

Non-physical

- Written or verbal remarks, profanity, obscenities, or sexual jokes.
- Sexual or offensive posters, graffiti or pictures, magazines or cartoons.
- Whistles or verbal comments.
- Making excessive comments on a person's appearance.
- Sexist remarks.
- Asking questions about sexual conduct.
- Invading personal privacy inside or outside the workplace (e.g. harassing telephone calls).
- Written or verbal abuse of a sexual nature.
- Harassment constantly targeted at one sex even if the content of the verbal abuse is not sexual.

Step two: Take action!

Keep a clear record of all incidents, taking notes of dates and times, potential witnesses and details of what took place.

Doing nothing is not an option. It leaves the victim to suffer and sends a message that the behaviour is acceptable. Both of these will cause reduced performance and production.

This supervisor is politely giving instructions to workers.

This manager signals to workers to follow him

This entrepreneur is talking respectfully with his assistant.

1.   Make changes in the workplace to reduce the risk of harassment

Harassment usually takes place in secret so you can reduce the risk by reducing isolation:

➢   Ensure that women are not working alone in remote areas of the enterprise.

➢   Add lighting to poorly lit areas and open up spaces where people may be isolated.

To avoid harassment by supervisors, train supervisors and managers in respectful management practices (see below).

2.   Develop a policy for maintaining a respectful work environment including fair procedures for dealing with complaints

A policy may just be a piece of paper, but it sends a strong message about the working environment you want to create. A good policy on harassment should:

● Clearly define different types of behaviour that will be considered harassment.

● State that every worker is entitled to a respectful workplace.

● Make it clear that harassment will not be tolerated.

● Set out a procedure for helping the victims of harassment.

● Be the subject of consultation with workers.
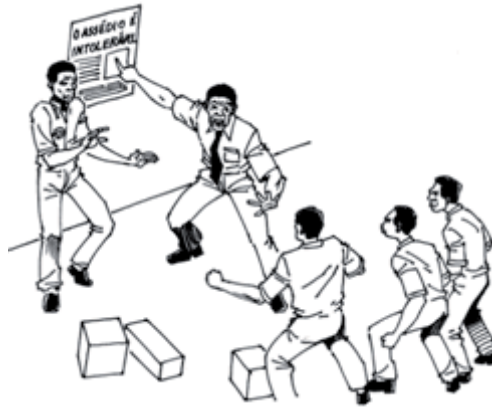
This manager has spotted three workers bullying a colleague, so he tells them to stop and points to a poster that says, "Harassment Will Not Be Tolerated."

Harassment, especially sexual harassment, is often hidden and considered shameful. It may continue for a long time, damaging business performance, unless people know that it will not be tolerated. A written policy gives employees the confidence to act against harassment and ensures that the rules are clear and known by all.

Checkpoint 52: Develop (in consultation with your staff) a written policy for promoting a respectful workplace, including a fair procedure to resolve complaints of harassment.

Fair and independent procedures to resolve complaints

Complaint procedures should be realistic and not too complicated.

Some complaints may be resolved **informally**:

- The procedure should provide that, if the victim agrees, the supervisor can speak to the 'harasser' informally – on a private basis without assessing the merits of the case – and agree a resolution.
- Sometimes establishing trusted workers/colleagues as the focal point for harassment complaints makes it easier for problems to be resolved informally. Where sexual harassment is a risk, a female focal point will make it easier for victims, who are most often (but not always) women, to talk about what has happened. Consider more than one focal point, so workers have a choice of a few people they could turn to for help.

Some complaints need to be dealt with **formally**:

- Perhaps because the victim or the harasser does not want it to be dealt with informally, the allegation is too serious or because the harassment is continuing despite an informal resolution.
- The formal procedure should provide that the complaint will be investigated objectively and confidentially (as it is important to minimize rumour and blame).

- The procedure should also ensure that the persons involved can, if needed, be accompanied by a person of their choice to help them feel comfortable when explaining the circumstances of the situation.

This young worker has been harassed, and is relieved to have a trusted colleague to talk to.

> **Checkpoint 53:** Designate a person or persons trusted by you and your workers to be a focal point for harassment complaints.

3. Share and explain your harassment policy with staff

Once the policy is developed, it is important that your workers and managers understand it so they know what the expectations are and what will happen if they do not respect the policy:

- All workers need to know that it is okay to file a complaint and that they will be safe and not suffer because of it.

- Managers and supervisors need to be taught to recognize improper conduct among colleagues and employees.

- Consider giving special training to supervisors, managers and focal points on how to prevent and deal with harassment, especially sexual harassment. These are people in power positions and they need to understand their roles and responsibilities.

- The policy, and some training on it, should be given to each new employee when starting his/her job.

In this workplace, productivity has increased because harassment problems have been tackled.

6.2
Develop an HIV/AIDS
Workplace Policy

HIV/AIDS hits the world of work in numerous ways.

Large numbers of workers have the infection, including many experienced and skilled workers, managers, and vital producers of food. In badly affected countries, it cuts the supply of labour as well as reducing the income for many workers. Projections made by the ILO for eight African countries with the highest prevalence rates indicate that the labour force could be up to one third (32 %) smaller by 2020 as a result of HIV/AIDS.

The effects of HIV/AIDS are likely to be felt in 3 main ways in your enterprise:

- Loss of productive staff and lower availability of trained workers
- Increased need for workers to have working time arrangements that allow them to care for sick relatives
- Incidents of discrimination and harassment against infected workers leading to less motivated staff

Having a good workplace policy on HIV/AIDS can greatly help workers to handle their condition and their work.

The advantages for your business

Developing concrete actions in your workplace related to HIV/AIDS will not only contribute to a possible decrease of the number of infections, but it will also create a work environment that is conducive to higher productivity.

Having an active policy on HIV/AIDS (and helping to lift the stigma from it) will be much appreciated by your employees, some of whom might be affected by the epidemic, either by being infected or having someone in their family who is infected. It will reduce the stress on the workers, who will feel more able to talk about this problem and also reduce discrimination against HIV/AIDS infected employees.
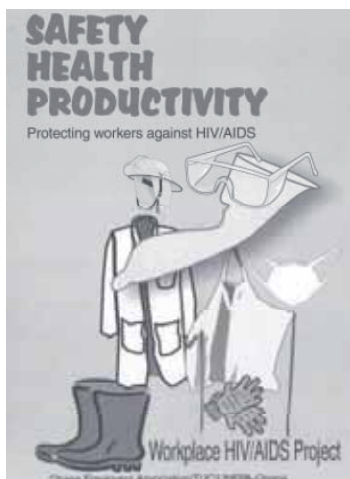
What you can do

In many countries there are recognized business organizations that support enterprises (mostly without charge) to develop HIV/AIDS workplace policies.

For help with implementing the policy, you can establish partnerships with NGOs or care institutions (as discussed in the module on Family-Friendly Measures). You could, for example, establish partnerships to ensure free testing and the provision of medicines.

Consider HIV/AIDS as an integral part of the daily reality in your company, as shown on this company poster: think about how you can protect your workers.

And give special attention in the policy to combating HIV/AIDS discrimination / harassment at your workplace.

Checkpoint 54: Avoid HIV/AIDS discrimination by workers and management, by developing and implementing an HIV/AIDS policy for the workplace.

6.3

Involve your Workers in Maintaining a Respectful Work Environment

If you want a policy to be supported and applied by workers and managers, it is important that they are involved in creating it. All workers should be represented in the consultations - women as well as men – so all perspectives are understood and taken into account. When it comes to discussing sexual harassment, women are the most frequent targets and their input will help their male co-workers to understand the impact of unwanted sexual attention.

What you can do:

- Set up a "Comments box" where employees can post their opinions and ideas confidentially.
- When discussing harassment, encourage them to describe all forms of harassment and give examples of what it is and what it is not. This type of activity reinforces the topic and helps motivate them to take positive action to be respectful to one another.

> **Checkpoint 55:** Remove all suggestive or provocative photos, posters, and other items from display in the workplace.

- Ensure that workers and managers do not put on display or pass around any pictures, posters or jokes that are offensive or include sexual innuendo.

6.4
Be a Positive Model

It is vital that you act the way you want your employees to act. Treat all your employees with dignity and respect if you want to sustain a respectful work environment. Your managers and supervisors need to act this way too.

Speak to workers and managers respectfully, avoiding shouting or being rude.
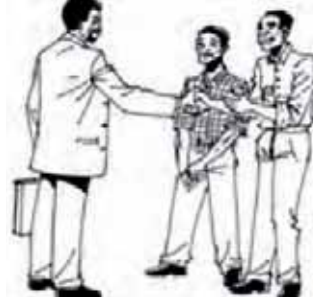
This business owner greets his employees in a respectful way.

Be aware of the difference in power between you and your employees and how they might feel forced to say yes to the boss, when they really want to say no!

> **Always be objective, but supportive, if complaints are made,**
> **and make it clear that you take them seriously.**

Summary: Rules for creating a respectful work environment

- Be aware of all types of harassment
- Make changes in the workplace to reduce the risk of harassment
- Develop a policy for maintaining a respectful work environment including fair procedures for dealing with complaints
- Develop an HIV/AIDS policy for your workplace
- Share and explain your harassment policy with staff
- Involve your workers in sustaining a respectful work environment
- Be a positive model

Checkpoints for WISE-R Module 6
Create a Respectful Work Environment

Checkpoint 52: Develop (in consultation with your staff) a written policy for promoting a respectful workplace, including a fair procedure to resolve complaints of harassment.

Checkpoint 53: Designate a person or persons trusted by you and your workers to be a focal point for harassment complaints.

Checkpoint 54: Avoid HIV/AIDS discrimination by workers and management by developing and implementing an HIV/AIDS policy for the workplace.

Checkpoint 55: Remove all suggestive or provocative photos, posters, and other items from display in the workplace.