WIB Promoting Participatory Improvement Activities

WORK IMPROVEMENT ON BOARD

2016

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Preface

The WIB (Work Improvement on Board) program was born in Japan in 2005 as the product technical cooperation between the Maritime Institute Science of Labour Science, Tokyo, Japan and National Institute for Sea training, Yokohama, Japan. Many seamen and fishermen in Japan have actively and voluntarily pra tcipated in the WIB training and implemented significant improvements in safety, health and working conditions using their own resources and wisdom. On the basis of the previous WIB version in 2011, texts have been revised to reflect the new achievement and findings. Many new illustrations and photos showing good example. The same team who had developed the previous WIB version; Dr Shuji Hisamune, Economic department, Takasaki City University of Economic and Dr Kazutata Kogi, the Institute for Science of Labour, Tokyo, Japan, prepared the text, arranged photos. A special acknowledgement must to Dr Tsuyoshi Kawakami, Safety and health Specialist of ILO, and Fishery Agency, Ministry of Agriculture, Forestry and Fisheries, and Ministry of Land, Infrastructure, Transport and Tourism in Japan, supervised the WIB program and Miho Tutui for developing the illustrations. It is our sincere with that a powerful and effective tool to improve their safety, health and working conditions

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1. Introduction

Concerns are growing about the safety and health of seamen exposed to high risks at work on vessels [1]. In 2013, their accident rate was 13.5 per 1000 workers, 6 times higher than that in industry. Meanwhile, the death rate of seamen from accidents in 2014 was 0.2 per 1000 workers, 5 times higher than that in industry. In order to mitigate the risks of seamen at work [2], we have developed the Work Improvement on Board (WIB) program by applying participatory action-oriented training (PAOT) methods that have proven effective for reducing work-related risks in small enterprises, construction sites and agriculture [3]. The WIB program is increasingly applied in different groups of seamen, including activates within the scope of the occupational safety and health management systems (OSHMS). This spreading use of the WIB program reflects its unique characteristic of taking practical steps that can be simplified and adapted to the size and technical means of the workplace.

The PAOT training packages, represented by the work improvement in small enterprises (WISE), the work improvement in neighborhood development (WIND) for small-scale farmers and the POSITIVE program for trade unions, have been developed and tested extensively by the International Labour Organization and occupational safety and health programs in many countries [4]. They represent simplified forms of risk assessment and control similar to the implementation of OSHMS.

The effectiveness of these participatory methods is based on the common experiences that the workers know the high risks and necessary countermeasures based on their own experiences and that the improvements implemented by them focus on ergonomic principles for reducing multifaceted risks at work. The WIB program takes advantage of these participatory procedures leading to similar improvements including ergonomic improvements implemented on vessels. It is useful to apply the WIB program to different groups of seamen and fishermen.

The WIB program is now applied nationwide by various groups of seamen and fishermen with the support of many local associations and relevant government agencies.

This manual presents the basic steps undertaken in the WIB program and the action-oriented tools used in the program. It is hoped that the manual is widely used as a means of promoting work improvements on vessels in different local situations of seamen and fishermen.

2. How to conduct a WIB program

Each WIB program is conducted in the form of a brief workshop involving seamen or fishermen. Usually, 20–40 people can participate in the workshop. This workshop of 1–2 hours can be followed up by encouraging the participants to use the manual distributed at the workshop in their own vessels and to plan and implement improvement actions.

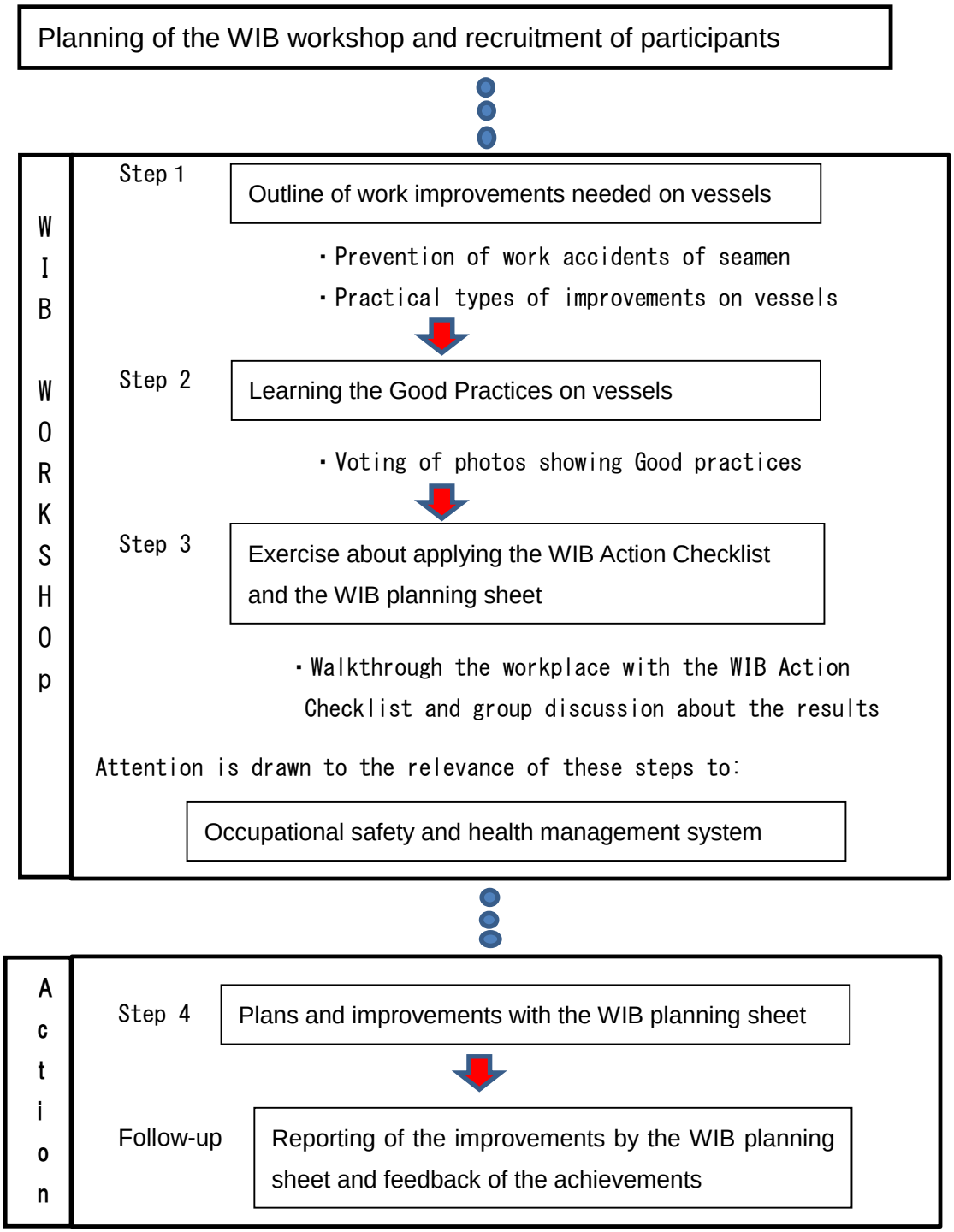
In the workshop, the participants learn local good practices, have a trial to apply an action checklist and make plans for immediate improvements in their own vessels. The purpose is to enable the participants to look at their own working conditions and propose practical improvements for better safety and health at work. A clear emphasis is placed on low-cost improvements that are feasible in the local situations of the participants. The participants are trained in this way about checking their existing conditions as well as planning and implementing practical improvements in multiple technical areas relevant to their daily work. Action-oriented tools used by the participants can facilitate not only the learning process but also the implementation of available improvements.

Participatory tools used in the WIB program are suited to the planning and implementation of practical improvements on vessels. Each WIB program for seamen and fishermen consists of an introductory presentation of the WIB methods, learning good practices achieved by seamen and fishermen, application of an action checklist for promoting feasible improvement actions and planning of immediate actions by using an action sheet. Usually, the program is conducted as a one-hour or two-hour workshop. Each program is followed up to know the improvements done by the participants.

Each set of tools include an action checklist, good examples and an improvement action sheet. The 28 items of the action checklist cover (a) work space and its maintenance, (b) preventing falls, (c) machine safety and protective equipment, (d) lighting, (e) mooring and fishing equipment, (f) work operations, and (g) communication and welfare facilities. The participants check their vessel by utilizing the WIB action checklist. Then the participants discuss the existing good practices and the ideas for work improvements that can be implemented by themselves. At the end of the workshop, participants agree to propose 3 work improvements for their vessel and workplace. Many of the proposed improvements have been implemented with visible effects on safety and health at work.

The steps taken in each WIB program are shown in the following figure. The workshop comprises three steps that can enable the participants to learn good practices and propose practical improvements by means of the action checklist and the planning sheet.

〈 Steps taken in a WIB program 〉



Step 1. Outline of work improvements needed on vessels

Presentation of the current status of work accidents of seamen

The current issues of occupational safety and health of seamen are presented by a trainer. The need for voluntary improvement actions is emphasized for preventing work accidents and work-related illnesses at the initiative of seamen and fishermen.

Broad-ranging improvements applied by the WIB program

Types of practical improvements useful for improving safety and health of seamen are discussed based on the various achievements from the WIB activities in various groups of seamen and fishermen. A clear emphasis is placed on low-cost improvements that can reduce the work-related risks encountered during various work operations on vessels at sea. Practical types of such improvements are incorporated in the WIB Action Checklist. The benefits of these low-cost improvements are discussed.

The action-oriented training steps taken in the WIB workshop are then explained. The participants are guided about how to plan and implement the practical improvements identified by themselves as part of the Occupational Safety and Health Management Systems promoted by the Ministry of Land, Transport and Infrastructure.

The characteristics of the WIB program are discussed in facilitating the actual planning and implementation of broad-ranging improvements feasible in particular working conditions on vessels in each local situation.

Step 2. Learning the Good Practices

Learning from local achievements

Local good examples showing low-cost solutions that can reduce work-related risks at sea are presented and discussed as voluntary goals of the participants. The importance of addressing multifaceted technical areas of working conditions on vessels is emphasized.

Voting of photo examples achieved in multiple technical areas on vessels is conducted by the participants to understand the practical improvement actions required. It is essential to cover the multiple areas of good practices feasible in local conditions of vessels and working operations at sea as indicated by the typical good examples shown below.

Examples of typical improvements achieved by seamen and fishermen

1. Preventing falling down or stumbling

A warning sign and non-slippery coating on the steps.

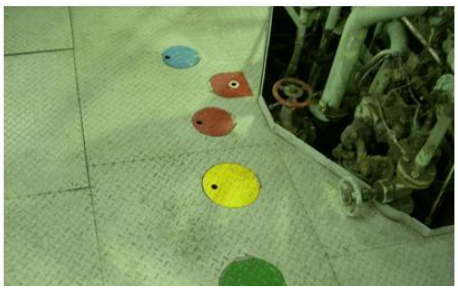
2. Mobile storage of tools

The tool rack is moveable.

3. Prevention of crashing each other

There are mirrors where it is difficult to watch out.

4. Coding by colors



The covers on the floor are separately indicated by colors

5. Sharing information jointly

The work processes are indicated with corresponding pictures.

6. Spot coolers in a hot workplace

Mobile spot coolers are sued to prevent heat stress during work.

7. Protecting the body in transportation

Clearly indicated buffer board.

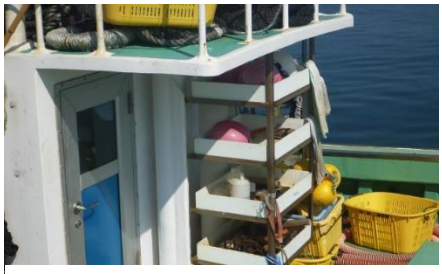
8. Home for each tool

Pictures of tools indicate the places where tools should be returned.

9. Containers with hand grips

Containers with had grips stored at designated places.

10. Multi-level shelves for placing different tools



Newly installed storage shelves for tools.

11. Flat surfaces of the fish storage

Plates designed to cover the fish storage.

12. Work table to have a good posture

The work table re-designed to allow working at elbow level.

13. Machine guards for preventing injuries at work

Machine guarding for preventing being

14. Wearing of the life vests

The life vests are worn regularly.

15. Signs indicating toxic materials

Hazardous chemicals stores in designated places with a warning sign.

16. Emergency stop buttons indicated clearly

Color-coded emergency switches.

Step 3 Application of the WIB Action Checklist and the WIB Planning Sheet

Applying the WIB Action Checklist

The participants are guided about how to apply the WIB Action Checklist about working conditions in their own vessels. The outline of the checklist is explained. The checklist covers the seven technical areas: (a) work space and its maintenance, (b) preventing falls, (c) machine safety and protective equipment, (d) lighting, (e) mooring and fishing equipment, (f) work operations, and (g) communication and welfare facilities. In each area, typical low-cost improvements feasible in the participants' vessels are listed. The participants check their working conditions by using the checklist.

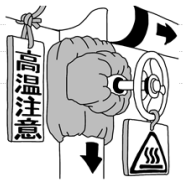
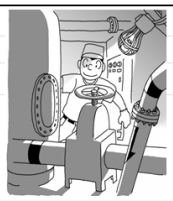
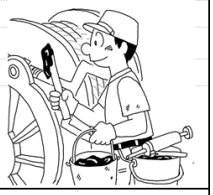
Where possible, the participants go their own vessels and use the checklist by means of a quick walkthrough in each vessel. They are encouraged to identify good practices already in place in their vessels corresponding to some of the check items. The results of checklist application are discussed by the participants. These results make it easy for the participants to plan their improvement actions and fill in the WIB Planning Sheet.

How to use the Action Checklist:

1. Define the work area to be checked. The vessel premises, work activities and living areas can be checked. In the case of a larger vessel, particular work areas can be defined for separate checking.
2. Read through the checklist and spend some minutes walking around the work area before starting to check. Read each item carefully. Look for a way to apply the improvements. If necessary, ask some questions to the seamen.
3. If the improvement is already in place or it is not needed, mark NO under " Do you propose action? "If you think the improvement is worthwhile, mark YES. Use the space under REMARKS to put a description of your suggestion or its location.
3. After you have gone through all the items, look again at the items you have marked YES. Then, choose a few items where the benefits seem likely to be the most important. Mark PRIORITY for these items.
4. Before finishing, make sure that for each item you have marked NO or YES, and that for some items marked YES you have marked PRIORITY.
5. Remember the checklist is not exhaustive and other areas may need examining. Note that the check items can be used for identifying good practices.

Data year month day Name		
HOUSEKEEPING AND STORAGE		
1. Use multi-level shelves or racks for storing tools, materials, and equipment. (Remarks)	Do you propose action? No Yes Priority □ □ □	
2. Keep passageways clear in good condition for the movement of people and materials. (Remarks)	Do you propose action? No Yes Priority □ □ □	
3. Eliminate sudden height differences and holes on transport routes. (Remarks)	Do you propose action? No Yes Priority □ □ □	
4. Choose tools that can be operated with minimum force. (Remarks)	Do you propose action? No Yes Priority □ □ □	
5. Remove or relocate sharp, dangerous objects in labelled positions. (Remarks)	Do you propose action? No Yes Priority □ □ □	
6. Place frequently use materials and tools within easy reach. (Remarks)	Do you propose action? No Yes Priority □ □ □	
FALL PREVENTION		
7. Clean up oil spills or other slipping hazards. (Remarks)	Do you propose action? No Yes Priority □ □ □	

8. Use safety devices which prevent slipping hazards. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
9. Provide handrails and barriers for stairways, or near machines. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
10. Remove or cover protruding portions and provide warming displays if needed. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
AVOIDANCE of HAZARDS		
11. Ensure the wearing of life jackets and protective devices such as clothes, gloves and helmets. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
12. Attach proper guards to dangerous moving parts of machines. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
13. Provide covers or guards to noisy machines and use earplugs where needed. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
14. Keep hazardous chemicals in safe and designated places. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	

15. Ensure safe use of electricity *(Remarks)*	Do you propose action? No ☐ Yes ☐ Priority ☐	
16. Make the emergency controls clearly visible and quickly accessible (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
LIGHTING		
17. Improve general lighting or provide local lighting. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
18. Eliminate glare or reflections which strain the workers' eyes. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
DECK DEVICE, FISHING DEVICE		
19. Maintain and restore tools, equipment and devices. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
20. Keep all equipment without damages and corrosions. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
REACH, POSTURE		
21. Ensure that displays and controls are easy to distinguish from each other. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
22. Choose work methods to avoid bending, squatting postures and twisted. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	

23. Use rollers, conveyors or carts and other mechanical means for moving or lifting heavy materials. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
24. Adjust the work height so that work is done at elbow level or slightly lower than elbow level. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
COMINICATION.HYGIENE		
25. Hold the meeting before work. by all involving the team members. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
26. Provide safety and health information to the all the team members. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
27. Provide resting corners and facilities for recoverry from fatigue. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
28. Provide clean, hygienic toilets and drinking water. (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
(Add subject No.1) 29 (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	
(Add subject No.2) 30 (Remarks)	Do you propose action? No ☐ Yes ☐ Priority ☐	

Filling in the WIB Planning Sheet

On the basis of the checklist results, the participants usually, make plans for improving their own working conditions on their vessels using the WIB Planning Sheet. Usually, the WIB Planning Sheet shown below is given to each participant together with a copy of the Planning Sheet printed with examples of plans and their results as also shown below.

Each participant is encouraged to propose three improvement actions and write down these actions in the Planning Sheet in the order to priorities. Examples shown below are very helpful in filling in the Planning Sheet. During the workshop, the participants may write down at least the improvement points. The deadline and costs sections may be filled in at a later stage

Conducting the planned improvements and reporting

At the end of the workshop, the participants are encouraged to implement the improvements they have planned and report the results, also using the right-hand column of the WIB Planning Sheet as indicated by the examples.

The WIB CHECKPOINTS included in this manual can be used for the planning as well as implementation of these improvements by the participants. The CHECKPOINTS refer to the WIB Action Checklist items and present low-cost improvements applicable on vessels.

Usually, the trainers and local organizations cooperated in organizing the workshop compile the reported results. Since the participants are guided to insert photos or illustrations showing BEFORE and AFTER situations of the workplace, the compiled data about the improvement results are used to evaluate the WIB program outcomes.

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WIB Planning Sheet

Date		Name of vessel	
Members	A		

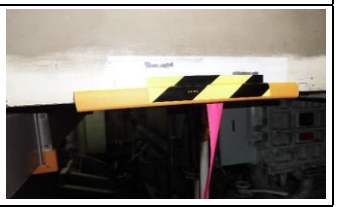
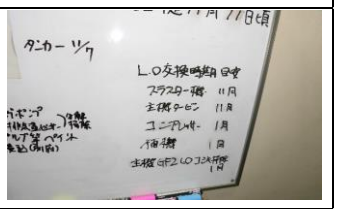
Plan of improvements				Results	
Order in priority	Improvement points	Deadline	Costs	Actions taken	Photos
1					
2					
3					

(Sample)

Date	1 June 2014	Name of vessel	○○vessel
Members	A, B, C		

Plan of improvements				Results	
Order in priority	Improvement points	Deadline	Costs	Actions taken	Photos
1	Providing non-slip mats	End of August	Paints ¥○○, non-slip material ¥○○,	Using paints with sand	
2	Preventing hitting the head	End of July	Urethane ¥○○, black-and-yellow tapes ¥○○,	Placing warning signs at head level	
3	Making it easy to locate tools	End of June	Wooden board ¥○○, hooks ¥○○,	Placing tools according to their sizes	

WIB Planning Sheet

	Data	Name of vesse	●●●●●	
	Menbers	●●、●●●、●●、●●		
Plan of improvements	Plan of improvements	Plan of improvements		Plan of improvements	
		Deadline	Costos	Actions taken	Photos
1	Preventing hitting the head	End of June	Urethane black–and–yellow tapes	Placing warning signs at head level	
2	Making it easy to locate valve	End of November	Paints	Using red paints	
3	Making it easy to show meintenance schedule			show the meintenance schedule by White board	

WIB Planning Sheet

	Data	Name of vesse	●●●●●	
	Menbers	●●、●●●、●●、●●		
Plan of improvements	Plan of improvements	Plan of improvements		Plan of improvements	
		Deadline	Costos	Actions taken	Photos
1	Providing non–slip mats	End of August	Paints, non–slip material	Using paints type	
2	Making it easy to find meter in the dark	End of August	Florescen t tape	Using Florescent type on the meter	
3	Providing clash the vehicle	End of October	Safety Vest Reflective plate Guide light	Put safety vest Using Reflective plate and Guide light	

Fig. Good practices

WIB Planning Sheet

	Data	Name of vesse	●●●●●		
	Menbers	●●、●●●、●●、●●			
Plan of improvements	Plan of improvements	Plan of improvements		Plan of improvements	
		Deadline	Costos	Actions taken	Photos
1	Preventing hitting the head	End of August	black–and–yellow tapes	Placing warning signs	
2	Preventing hitting the head	End of August	Urethane black–and–yellow tapes	Placing warning signs at head level	
3	The covers on the poler are separately indicated by colors	End of August		Separately indicated by colors	

WIB Planning Sheet

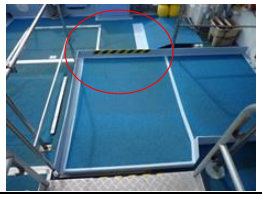
	Data	Name of vesse	●●●●●		
	Menbers	●●、●●●、●●、●●			
Plan of improvements	Plan of improvements	Plan of improvements		Plan of improvements	
		Deadline	Costos	Actions taken	Photos
1	Preventing hitting the foot in tha deck	End of October	black–and–yellow tapes	Placing warning signs	
2	Preventing hitting the foot in tha cabin	End of October	black–and–yellow tapes	Placing warning signs	
3	Preventing hitting the foot in tha cabin	End of October	black–and–yellow tapes	Placing warning signs	

Fig. Good practices

3. Relevance of the WIB program to the Occupational Safety and Health Management System

The implementation of the WIB program can be regarded as covering the essential elements of the Occupational Safety and Health Management Systems (OSHMS). This is because the implementation of the WIB program leading to actual improvements on vessels corresponds to the Plan - Do - Check -In Act (PDCA) cycle required in organizing the OSHMS. In fact the steps taken in the WIB program taken in the WIB program correspond to setting goals learned from good practices (Plan), implementing on the basis of group assessment of existing conditions by means of action checklist (Check), and continual action by further repeating and sustaining the WIB-based activities for stepwise improvement (Act).

This relevance to the OSHMS can be ensured by recording and revering the WIS program activates as follows.

(1) **Occupational safety and health policy**

Establishing the long-term policy for the company or vessel and write it down as that all the members know it.

(2) **Organizers**

Define the members organizing the WIB program, by stating the responsibility of each members.

President ○○ ○○ (Over all members this project)
Manager □□ □□ (Secretariat, Managing the project)
Supervisor △△ △△ (Leader of each vessel)

(3) **Planning and implementation**

Hold a meeting once every month and make the minutes.

Keep the results of checking on the vessels, operating situations of the vessels, training on the vessels and informing being health.

Please check work place with all crew when they can attend. If you use WIB, you can check your vessel and suggest plans of safety in one hour. If, all crew check their work place, the opinion of crew are reflected and promoted.

Planning meeting (.../month/year)
Implementation (.../month/year)
Training (.../month/year)

(4) **Recording the outcomes**

Review the actives during a year and record them in terms of meeting, program implementation and training situation.

Meetings (.../month/year)
Implementation (.../month/year)
Training (.../month/year)

(5) **Continual Improvement**

Note down the plans for continuing the improvement actions.

4. WIB CHECKPOINT

Contents

CHECKPOINT 1:

Multi-level shelves or racks for tools, materials and equipment.

(Relating check item)

1. Use multi-level shelves or racks for storing tools, materials and equipment.

WHY

Multi-level shelves and racks allow a better use of space and help you keep products or tools in good order. By placing things on multi-level shelves, you can easily find necessary items. By keeping the tools in designated places, you can save time and effort locating them. Multi-level shelves and racks promote safe storage of materials, which may reduce the risk of accidents and fires.

HOW

1. Place multi-level shelves and racks where you can easily access them. Fix them to the wall so that you can make full use of the space.
2. Put labels or draw shapes of the items and tools on the front of shelves or containers to show their designated places. This will help locating the item.
3. Ensure that the shelves are strong enough to store heavy materials and products. If applicable, fix the shelves to the wall.

WAYS TO PROMOTE COOPERATION

Start by making a simple change in your vessel such as building a small shelf for materials or tools. All members can see the change. This will help members understand the benefit and promote further similar improvements. Encourage people to exchange ideas and good practices.

SOME MORE HINTS

Place frequently used items at a level between your waist and shoulder, and the heavy and less frequently used items at a lower level. Light and infrequently used items can be stored at a higher place. Use small trays or pallets to store items of similar size and shape so that they are easily identified. Use mobile racks and trolleys to store and carry items which are used in remote places.

POINTS TO REMEMBER

Proper use of multi-level shelves and racks can save your time and efforts.

WIB IMPROVEMENT ACTIONS

Figure 1a. Tools storage

Figure 1b. Hand tools tidily placed on the hangers and multi-level racks.

Figure 1c. Fish storage with well-designed containers placed in designated places.

CHECKPOINT 2:

Transport routes

(Relating check items)

2. Keep passageways clear in good condition for the movement of people and materials.

3. Eliminate sudden height differences and holes on transport routes.

7. Clean up oil spills or other slipping hazards.

8. Use safety devices which prevent slipping hazards.

10. Remove or cover protruding portions and provide warning displays if needed.

WHY

If workers have to move materials and tools on a route in poor condition, this increases the risk of injury particularly if manual effort is required. The transport of materials and tools is an important part of work. They are often heavy and varied in shape, and this makes it difficult to handle them. Poor conditions of transport routes such as narrow, rough or slippery places further increase the difficulty.

Transport routes in good condition increase safety and efficiency in transport, prevent products from being lost or damaged and protect you and other people from accidents and injuries. Also, the wide and well-maintained deck and corridors in your own vessel promote safe and effective work.

HOW

1. Make routes wide enough for safe and efficient traffic and transport, and keep them well maintained.

2. Improve and clean up routes if you find a problem or have difficulty in transportation.

For example, where routes become slippery in the rain and wave season, paint them with small pieces of sand or cover them with non-slippery surfaces.

3. Do not place any obstacle on the transport routes. Provide designated places for storage and waste disposal.

WAYS TO PROMOTE COOPERATION

Start from simple and low-cost improvements in main routes. For example, clean the path in front of your room or the main transport route leading to the bow. This will raise awareness of the advantages provided by routes in good condition for safe and efficient transport.

Build up the habit of regularly cleaning and maintaining transport routes, in cooperation with other workers.

SOME MORE HINTS.

Make the boundaries of transport routes easy to see, by paintings.

POINTS TO REMEMBER

Clear, wide and non-slippery routes make traffic and transport easier, and help prevent accidents, injuries and damage.

WIB IMPROVEMENT ACTIONS

Figure 2a. Main route (Engine room)

Figure 2d. Deck (Fishing vessel deck)

CHECKPOINT 3:
Tools and devices

(Relating check item)
4.Choose tools that can be operated with minimum force.

WHY

Well-designed tools ensure the correct working posture and greatly reduce your workload and fatigue. They can prevent accidents and improve productivity.

The use of inappropriate and poorly designed tools, e.g. heavy or over-sized ones, will make you tired quickly, resulting in lower efficiency and a higher risk of accidents.

Tools used on vessels vary largely depending on the type of work.

For example, rope handling and net picking need sharp hooks with easy-to-grip handles.

Stronger tools with sturdy handles are used for these kinds of work.

HOW

1. Choose lightweight but sufficiently strong tools to reduce the workload on the upper limb muscles. Larger tools such as a hook and deck brush need handles of an appropriate a length to ensure correct working posture. Attach sturdy easy-to-grip handles to the tools for safe operation.

2. You can design and make tools yourself.

For example, a manual device invented by a seaman has been widely used on vessels.

3. Turntables and rotating worktables enable tasks to be carried out without having to manually lift and rotate the object. They are particularly helpful for repairing and maintaining machines and other equipment.

WAYS TO PROMOTE COOPERATION

Find good practices on easy-to-use tools designed by local people. Such tools increase productivity by saving energy and time and also by improving safety and health. Listen to your co-workers and discuss how to create useful tools by using locally available resources.

Share good practices with each other. When you are interested in a new tool, consult somebody in your team who has already used it. Any major problems with a hand tool can be identified by trial use.

SOME MORE HINTS 。

Avoid overuse of a particular group of muscles by operating the same tool for long hours. Choose appropriately designed tools that do not require unbalanced muscular effort. When choosing a new tool, consider all possible uses for it, for example, operation by the right and left hands, standing and sitting.

POINTS TO REMEMBER

Appropriately designed tools and devices help you reduce fatigue and accidents, and increase productivity.

WIB IMPROVEMENT ACTIONS

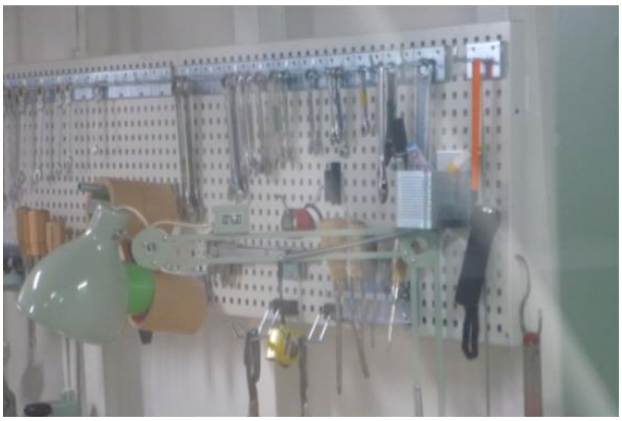


Figure 3a.Workstations and work tools

Figure 3b. Tools and a desk for good working posture.

CHECKPOINT 4

Home for tools

(Relating check item)
5 .Remove or relocate sharp, dangerous objects.

WHY

Working in a cluttered area where tools and materials are scattered around on the floor is neither safe nor efficient. Besides, your valuable and often expensive tools may be damaged or lost, resulting in time, effort and money to replace them. In addition to your disappointment, your stress and strain will increase. Providing a home for each tool is a simple and effective solution and will increase safety and efficiency. By returning a tool to its designated position each time after use, you can easily and quickly find the one you need and also recognize when one is missing.

HOW

1. Make a simple home for each tool. A home for each of your working tools and devices, using readily available resources such as pieces of wood.
2. Put labels, or draw the shapes of the different tools, on the board to indicate the designated place of each item. You will see at a glance the location where the tool should be returned to.
3. For work to be performed at multiple locations, design and make tool boxes to transport your tools easily so they can be kept safely and in good order.
4. Store small tools or work items in bins, cans or trays to help prevent losing them.

WAYS TO PROMOTE COOPERATION

Start from simple improvements which you can implement immediately. There are many practical and easily applicable solutions, such as a tool hanger made from wood, or just drawing the shape of each tool on the board or wall. Invite ideas from your team members and share practical and visible achievements.

SOME MORE HINTS 。

Attach wheels to your tool cabinets or racks so that they can be easily moved to different worksites when necessary.

POINTS TO REMEMBER

Providing a home for each tool is a low-cost way of improving safety and efficiency at work.

WIB IMPROVEMENT ACTIONS

Figure 4a. A cabinet for tools:
Pliers, hammers, sickles, etc. hung neatly on both sides, in clearly labelled positions.

Figure4b. Multi-level racks for tools:
A wooden board for hanging tools, with the shape of each tool clearly and distinctly marked.

CHECKPOINT 5:

Easy reach

(Relating check items)

6. Place frequently use materials and tools within easy reach.

20. Keep all equipment without damages and corrosions.

WHY

Putting frequently used tools and materials within easy reach minimizes unnecessary movements. This avoids unnecessary stretching or bending which may cause musculoskeletal problems and contributes to saving time and energy. The easy-reach principle is essential for all sorts of work. On the vessel, tools should be placed within easy reach. Power switches and control panels should also be within easy reach of the operator. This will help you perform your work more efficiently.

HOW

1. Identify the most frequently used materials and tools on the vessel. Ensure they are placed within easy reach of those who use them.
2. Move less frequently used tools and materials to appropriate storage places.
3. If necessary, use shelves, racks or hangers to keep the tools and materials within easy reach.

WAYS TO PROMOTE COOPERATION

The tools you frequently use may also be used frequently by others. Talk together and agree on the best place for those tools to be stored so that everyone who uses them can reach them.

Observe other vessels in the neighborhood, and collect and share good practices. Help each other to develop innovative solutions by using local resources.

SOME MORE HINTS

You can design special equipment to place materials within easy reach. For certain work, a wheeled device is convenient as it allows easy transportation of tools. Specially designed belts or bags are often utilized to carry hand tools frequently used on the vessel, such as scissors, knives, or hammers is a good option.

POINTS TO REMEMBER

Time and energy are saved by placing tools and materials within easy reach.

WIB IMPROVEMENT ACTIONS

Figure 5a. Workstations and work tools

Figure 5b. Work tools placed in good order.

Figure 5c. Work tools easily accessible.

CHECKPOINT 6:

Machine guards

(Relating check items)

9. Provide handrails and barriers for stairways, or near machines.

12. Attach proper guards to dangerous moving parts of machines.

13. Provide covers or guards to noisy machines and use earplugs where needed.

WHY

Access to moving parts of machines increases the risk of accidents. For example coming into contact with gears, rollers or belts may cause serious injuries. In addition, objects may be ejected by the machines, in the form of sharp objects and hot metal. Simple, even hand-made guards can significantly reduce such hazards and risks. Machines can harm not only the users but also co-workers who are just passing by.

HOW

1. Attach guards and covers to the moving parts of machines.

1. Use available materials such as pieces of wood or steel. Select strong, durable materials so that other people cannot remove them.

2. Make guards and covers detachable for repairs and maintenance, which should be done only by experienced and qualified persons following the safety maintenance procedures.

3. When continuous monitoring of the machine operation is required, use a transparent material for the guard such as plastic or metal mesh.

4. Install fences made of sturdy materials such as wood or metal to limit access to machines placed in areas where many people pass by.

WAYS TO PROMOTE COOPERATION

Together with your co-workers, observe the various tasks carried out in your vessel using machines. Identify when, where, what and how machines are used. Identify the hazards and risks of these machines and assess the need for guards. Discuss feasible solutions and the steps to be taken. When necessary, design and make proper guards using locally available materials.

SOME MORE HINTS

Ensure that the guards are tightly fixed to the machines to avoid accidental removal which may cause serious injuries. Before operating the machine, carefully check that all nuts and bolts attaching guards are securely tightened.

POINTS TO REMEMBER

The best protection against potential accidents is to avoid contact with moving parts of machines by attaching proper guards.

WIB IMPROVEMENT ACTIONS

Figure 6a. Special guard on a powered hand tool to prevent accidents and injuries to the operator and people nearby.

Figure 6b. Hand-made safety guard made from locally available material.

CHECKPOINT 7:
Personal protective equipment (PPE)

(Relating check item)
11. Ensure the wearing of life jackets and protective devices such as clothes, gloves and helmets.

WHY

Personal protective equipment (PPE) protects your life from falling in the sea, and specific parts of the body against hazardous agents or substances such as dust, noise and chemicals. PPE must be used when other primary measures cannot control exposure to the hazard.

HOW

1. Review the type of hazards you may be exposed to and identify appropriate PPE and learn how to use it. Consult suppliers or experts and get their technical assistance.
2. Organize and participate in training to understand the importance of using PPE. Also, continuous training to obtain knowledge and skills for proper use of PPE is vital.
3. Clean the equipment after each use and store it in a secure place.
4. Regularly check the functioning of PPE and provide necessary maintenance.

WAYS TO PROMOTE COOPERATION

Get and share up-to-date information and encourage workers to use PPE properly. Check each other to make sure that the equipment is being properly worn. If you do not feel comfortable using specific equipment, discuss with managers and experts and find a reasonable solution. Do not abandon the use of PPE.

SOME MORE HINTS

Choose correct shapes and sizes of PPE and ensure it is compatible. In particular, check whether the mask and life jacket fits the user well. Even a small space between the mask and the face allows chemicals into the breathing zone reducing the effectiveness of the PPE. Consider particular climate factors such as tropical/cold and choose suitable PPE. Be aware of the importance of good storage for PPE. Certain types of equipment may be affected by temperature and humidity. Repeatedly practice the proper wearing of PPE.

POINTS TO REMEMBER

Correct choice and proper use of the life jacket and personal protective equipment is critical for your life and health.

WIB IMPROVEMENT ACTIONS

Figure 7a. Workers wearing the life jacket.

Figure 7b. Workers wearing the helmet.

Figure 7c. Workers wearing the life jacket.

CHECKPOINT 8:

Chemical safety

(Relating check item)

14. Keep hazardous chemicals in safe and designated places.

WHY

The misuse of hazardous chemicals may result in severe damage to your and others' health and to the environment. The original labels on chemical products are written in technical terms, and often in a foreign language, usually of the country of manufacture or distribution. It makes end-users difficult to understand information and follow the instruction. Therefore make sure that workers can understand the labels.

HOW

1.Read the labels on the containers of all chemical products carefully. If they are not clear, seek technical assistance from advisors or health personnel.

2. If persons are having difficulty understanding the information on the label, put an additional label on the container clearly indicating the name, purpose and warning in the local language.

3. Never remove labels even when you dispose of the container.

4. When you purchase pesticides and other chemicals in large quantities and divide them into smaller containers, label these appropriately and do not use beverage bottles or food containers. This will prevent misuse.

WAYS TO PROMOTE COOPERATION

Labelling is useful to identify something and to avoid its misuse. Exchange information and share experiences with your team members and other people on the usefulness of adequate labels. You may wish to invite experts from local health centers and organize a session on safe use of hazardous chemicals and safety management.

SOME MORE HINTS

Choose water-resistant, permanent-ink bold pens for labelling. Use only simple and clear text which everyone understands. It is a good idea to use pictograms and symbols such as skull and crossbones to ensure everyone understands. When the label is worn out or not in good condition, replace it without delay. Labelling pesticide and hazardous chemicals is usually obligatory and regulated by law. Do not purchase hazardous chemicals without proper labels.

POINTS TO REMEMBER

Label all containers of hazardous chemicals in the local language to avoid misuse.

WIB IMPROVEMENT ACTIONS

Figure 8a. Clear easy label.

Figure 8b Clear easy label.

Figure 8c. Labelling hazardous chemicals in symbols such as crossbones.

CHECKPOINT 9:

Electrical safety

(Relating check item)
15. Ensure safe use of electricity.

WHY

Electricity is essential for life today and is used for many purposes at work. But electricity can kill or injure people and damage property. Unfortunately, electrical accidents including electric shock and burns are constantly reported at work in vessels. In vessel tasks, many kinds of machines such as deck machines or water pumps are used in outdoor settings and/or wet surroundings. This increases the risk of accidents if the power cables and electrical connections are not properly maintained. Extension cables, often used for vessel work, may increase risks particularly if there is any damage to the plugs, sockets, electrical connections and the cables. Unsafe use of electricity can cause death and injury, both for the person operating the equipment or machine and others by fires or other serious accidents.

HOW

1. Always use cables and outlets equipped with earth leakage circuit-breakers. Never leave appliances plugged in where they might come into contact with water and corrosive or flammable materials.
2. Regularly check all wiring connections. Use proper connectors or cable couplers to join wires. When they are not available, wrap the joins carefully with electrical adhesive tapes. Never leave any joins uncovered. Replace the electrical adhesive tape immediately when it becomes loose or worn out.
3. Install electrical junction boxes and containers for electrical connections.
4. Protect all circuits with circuit-breakers or fuses. Main power switches and breaker boxes should be clearly marked.

WAYS TO PROMOTE COOPERATION

Electrical safety requires special skills and experiences. Ask assistance and technical advice from qualified persons in vessels or in the area.

It is a good idea to organize a brief on-site training on electrical safety in collaboration with local organizations. Share experiences and develop a joint plan for the safe use of electricity.

SOME MORE HINTS

Use certified appliances which are suitable for your working environment. Poor-quality products may cause short-circuits, resulting in injuries, fires or damage to property. Provide enough socket outlets and avoid overloading.

Carry out preventive maintenance regularly. All electrical equipment should be correctly earthed. Check local regulations for earthling systems and follow them.

POINTS TO REMEMBER

Proper choice, installation and maintenance of electrical appliances can prevent accidents and damages.

WIB IMPROVEMENT ACTIONS

Figure 9a. Control panels and switches maintained with caution.

Figure 9b. Properly covered and sheathed electric wires.

CHECKPOINT 10:

Emergency switches

(Relating check items)

16. Make the emergency controls clearly visible and quickly accessible.

21. Ensure that displays and controls are easy to distinguish from each other.

WHY

Emergency stops must be clearly visible, identifiable and located within easy reach of the normal operating position. Accidents happen unexpectedly. When a danger or impending danger arises during machine operation, the most critical action is to immediately stop the machine. In emergency situations, it is difficult to read or recognize text. Selecting the right button or switch to stop the machine from the control panel is vital. Therefore, emergency stop devices must be well designed so that everybody, including visitors can easily see, clearly identify, and readily access them.

HOW

1. Place emergency stops within easy reach of users. Separate them from other switches and buttons.
2. When emergency stops are placed in the same control panel or close to other buttons, make them clearly visible and identifiable. The color red is generally used for emergency stop devices.
3. Make emergency stop buttons large.
Avoid screw-type devices.
4. If necessary, attach labels in large clear characters. Avoid text and foreign languages.

WAYS TO PROMOTE COOPERATION

You may also find emergency stops on machines in the vessel. Check the location and condition of these stops with your members. Discuss and design together visible, identifiable and accessible emergency stops.

SOME MORE HINTS

A red device or button on a yellow background, with or without text behind, is often used as an emergency stop. Never disable an emergency stop device.

POINTS TO REMEMBER

Clearly visible, identifiable and readily accessible emergency stops will save you and your friends in an emergency.

WIB IMPROVEMENT ACTIONS

Figure 10a. Emergency stop, large and colored red, within easy reach.

Figure 10b. Emergency stop, large and colored red, within easy reach.

Figure 10d. Emergency stop easy to find within the panel.

CHECKPOINT 11:

Provide general artificial lighting adequate for the work tasks.

(Relating check items)

17. Improve general lighting or provide local lighting.

18. Eliminate glare or reflections which strain the workers' eyes.

WHY

The use of artificial lighting will reduce workers' time and effort to produce quality products as well as prevent accidents and mistakes. The appropriate level of lighting differs according to tasks and workers. For example, when reading printed text, a 60-year-old worker needs five times more light than a 20-year-old worker.

Provision of artificial lighting together with daylight will often solve the problem. The benefits of better lighting will be immediately evident. Everyone will realize how easy it is to work and see improvement in work efficiency.

HOW TO IMPROVE

1. Walk through your workplace and identify areas where daylight alone does not provide sufficient light. Do not forget to check staircases, corridors, back doors and storage rooms. Accidental trips and falls can occur in these areas.

2. Simple improvements such as cleaning all the bulbs, changes to LED equipment, relocating the workstations, and using reflectors will dramatically improve your work efficiency.

3. Provide artificial lighting in your workplace. When combining daylight with general lighting, you should take into account the direction of daylight.

WAYS TO PROMOTE COOPERATION

Jointly examine the lighting conditions with managers and workers working in the same area. Identify the work that needs additional lighting to make sure it is safe and can increase productivity. Your past experiences should be discussed to find possible preventive measures. Develop ideas for using the three light sources (daylight, general lighting and local task lights) most effectively.

SOME MORE HINTS

- Avoid shadows. Shadows reduce general lighting on the work surface and cause eyestrain, fatigue and mistakes. Make sure there are no obstacles blocking the light sources.
- Ensure regular maintenance of artificial lights. Without maintenance, the amount of light could be reduced with time by half or more in a few months.
- Sudden or frequent changes of brightness cause eye fatigue in workers. Minimize the lighting contrast between work areas so that workers can reduce eye fatigue and mistakes.

POINTS TO REMEMBER

Artificial lighting needs careful planning and maintenance to be effective.

WIB IMPROVEMENT ACTIONS

Figure 11a. Artificial lighting.

Figure 11b. The deck light changed to LED light.

CHECKPOINT 12:
Lifting and handling devices

(Relating check items)
19. Maintain and restore tools, equipment and devices.
23. Use rollers, conveyors or carts and other mechanical means for moving or lifting heavy materials.

WHY

Work-related musculoskeletal disorders are the most common type of occupational ill-health issues. The principle of prevention is to avoid hazardous manual handling operations by using appropriate equipment such as rollers, conveyors, carts or lifters, which can often be home made from locally available materials. Awkward and strenuous bending postures may cause low back injury and should be avoided.

HOW

1. Use roller conveyors to move heavy loads for short distances.
1. Fix both ends of the rollers onto stable places at the appropriate height for loading and unloading.
2. Learn from good practices around you on devices for lifting, carrying and handling loads. Design a new device or modify an existing one to suit the load to be carried.
3. When moving heavy objects at floor level, place a wheeled pallet underneath.
4. Use inclined conveyors to move loads between two places with a height difference.

WAYS TO PROMOTE COOPERATION

Hand-tracks, conveyers and slides often require two or more persons to operate them. Exchange ideas on the design of such aids to improve their application and organization of joint work.

Discuss sharing the cost and use of machinery.

SOME MORE HINTS

Lifting and handling devices need regular maintenance to ensure effective operation. Check all parts, such as rollers, steel beds or rubber beds, at regular intervals.

POINTS TO REMEMBER

The use of appropriate devices makes lifting and handling heavy loads easy, safe and effective.

WIB IMPROVEMENT ACTIONS

Figure 12a. Use Rollers.

Figure 12b. Short rollers between different heights for loading fish.

Figure 12c. Fish pump.

CHECKPOINT 13:

Good work postures

(Relating check item)

22. Chose work methods to avoid bending and squatting postures as much as possible.

WHY

You may carry various kinds of heavy items in your work. The task is strenuous and often accompanied by a high risk of musculoskeletal problems such as back injuries. The risk can be reduced by good practices for reducing muscle load in lifting, carrying and handling loads.

HOW

1. Divide the loads into lighter packages, taking into account the weight that you can carry without risk. Carrying two packages of 10 kg each is better than carrying one package of 20 kg.
2. Firstly examine the shape, size and weight of the load and use well-designed containers to move it.
3. Attach sturdy easy-to-grip handles to the container so it can be filled, emptied, lifted, carried and handled easily.

WAY TO PROMOTE COOPERATION

Learn from good examples already put into practice and promote their application. Try to use the same shape and size of containers so that people can cooperate in transporting products.

SOME MORE HINTS.

Choose smaller containers that can be easily and safely handled. Wearing gloves and wrapping grips/handles of containers with soft cloths may help with handling. Keep your wrists in a comfortable and straight position while transporting loads. Where possible, use the same containers for transport and storage. This removes the need for double handling and saves time and effort. When lifting or carrying a heavy load, separate your feet until you reach a stable position. Bend your knees. Lift the load gradually and smoothly. Keep the load close to your trunk. Do not turn your trunk while lifting the load.

POINTS TO REMEMBER

A lighter weight is a safer weight. Divide heavy loads into lighter ones to ensure safety and higher productivity.

WIB IMPROVEMENT ACTIONS

Figure 13a. Well-designed containers with easy-to-grip sturdy handles.

Figure 13b. Containers with easy-to-grip sturdy handles.

CHECKPOINT14:

Carts and other devices

(Relating check item)

23. Use rollers, conveyors or carts and other mechanical means for moving or lifting heavy materials.

WHY

Carrying materials, tools and products is an important part of your work. The use of carts, hand-trucks, vehicles or boats reduces your workload, minimizes damage to the products and reduces the risk of accidents.

HOW

1. Use carts or hand-trucks with firm handles for transporting heavy or large quantities of products/materials.
2. Improve the routes and deck for smooth passage of carts.
3. Adapt the carts and hand-trucks so items can be carried safely and securely.

WAYS TO PROMOTE COOPERATION

Walk around your vessel with fresh eyes. Discuss with your co-workers how they carry loads. There may be excellent examples of using self-made carts or hand-trucks. Exchange ideas and experiences to reduce your workload and improve safety and efficiency.

SOME MORE HINTS

Attach appropriate side-boards to carts and other vehicles to prevent the load from falling off. Choose suitable carts or other vehicles in accordance with the load and the type of transport work. Learn from good examples. Simple maintenance work can reduce the risk of accidents. Well-maintained routes maximize the effectiveness of using carts for transport.

POINTS TO REMEMBER

There are many kinds of devices used for transport. You can learn from local experiences relevant to the local conditions.

WIB IMPROVEMENT ACTIONS

Figure 14a. Home-made wheeled rack.

Figure 14b. Wheeled spot cooler.

CHECKPOINT 15:

Work height

(Relating check item)
24. Adjust the work height so that work is done at elbow level or slightly lower than elbow level.

WHY

In order to prevent muscle strains and pain, and to increase productivity, workstations must be appropriately designed. A working height at elbow level minimizes your muscular efforts. This rule is applicable to both standing and sitting postures. This is particularly important in work such as sorting and packaging, or assembling products. Working at too low a height requires a bending posture which imposes strains on your back and may cause low back pain. On the other hand, when the work height is too high you must elevate your arms and shoulders. This causes gradual stiffness and pain, and you will find it difficult to continue working in such a posture.

HOW

1. Look at your workstations, work tables and work surfaces. Adjust their heights to the elbow level of the person who works there most frequently. This will mean they can carry out work in comfort and this may increase efficiency and productivity.
2. When many people of different height work at one work table, provide foot platforms for small persons and item holders for tall persons. This allows them to adjust their work height to elbow level.
3. For work requiring a lot of movement and physical effort, such as cutting products or repairing tools, arrange workstations slightly lower than your elbow level.

WAYS TO PROMOTE COOPERATION

Fishermen often squat on the ground when sorting or packaging fish products. This causes strains and pain. Encourage your workers to work at appropriate workstations (chairs and tables) and to adjust the work height to elbow level. Discuss and find feasible workstations and work heights which are the best possible for every worker. Evaluate and share the benefits of height adjustment.

SOME MORE HINTS

Make sure that you can reach major work items comfortably in your normal standing position. Materials, tools and containers should be within easy reach.

POINTS TO REMEMBER

Arrange appropriate work heights and avoid bending or squatting postures to reduce fatigue and musculoskeletal problems and to increase productivity.

WIB IMPROVEMENT ACTIONS

Figure 15a. Improved arrangement to avoid strenuous working postures.

Figure 15b. Improved arrangement to keep good working postures.

Figure 15c. A foot platform for a smaller person to adjust the work height to elbow level.

CHECKPOINT 16:

Efficient teamwork

(Relating check items)

25. Hold the meeting before work by all involving the team members.

26. Provide safety and health information to the all the team members.

WHY

The tasks are often monotonous and repetitive, especially when the work is machine-paced. This may cause fatigue and loss of concentration, resulting in low productivity or even accidents. Task rotation within a working team may decrease such negative consequences and lead to better performance. There are also some tasks you cannot carry out alone. You can manage them by working together with other seamen in collaboration. Well-organized teamwork can increase efficiency and productivity.

HOW

1. Look at your tasks and identify those you have difficulty in performing. Examine the possible benefits of completing these tasks as part of a team.
2. Form a working team of relevant members. Designate a coordinator if appropriate.
3. Organize work schedules and job rotation in the team.
4. Consider all relevant factors that may affect performance of the team, such as the capacity of each member, the nature of the task (regular/temporary/seasonal, manual/ machine paced), and the workload. Arrange rest breaks appropriately.

WAYS TO PROMOTE COOPERATION

Working in a team can be productive only if it is well planned and coordinated. The scheduling of the tasks and their rotation must be discussed and agreed on by all the team members.

Learn from other vessels or communities about good practices in teamwork; especially for work arrangements during the busy season.

SOME MORE HINTS

List all possible advantages and disadvantages of team working. Some of your tasks may be better performed individually. Good communication is a key to successful teamwork. When you work with a machine, adjust the speed of operation for your comfort and work efficiency. This is also important for your safety.

POINTS TO REMEMBER

Good teamwork improves your safety and productivity.

WIB IMPROVEMENT ACTIONS

Figure 16a. A brief meeting for work improvement.

Figure 16b. Meeting for work improvement.

CHECKPOINT 17:
Refreshing facilities

(Relating check items)
27. Provide resting corners and facilities for recovery from fatigue.
28. Build clean, hygienic toilets and drinking water.

WHY

Clean toilets and washing facilities are basic needs for well-being at any workplace. Lack of adequate toilets may harm health as well as the environment. It is reported that certain types of illnesses are caused by the lack of adequate washing facilities and poor personal hygiene practices. Washing the hands and bodies after work is essential to prevent infection and health problems due to exposure to hazardous, chemical and other contaminations. This is particularly important before eating and drinking.

HOW

1. Install enough toilets near your work area with a supply of toilet paper, a covered bin, and as far as is reasonably practicable, running water. If this is not possible, consider alternatives such as water containers.
2. In remote areas, consider constructing simple latrines.
3. Provide washing facilities with a supply of soap and a means of drying hands. The basin must be large enough to wash the hands and forearms.
4. Keep facilities clean.

WAYS TO PROMOTE COOPERATION

Also develop a joint plan for cleaning and providing necessary supplies.

SOME MORE HINTS

Where possible, separate facilities for men and women. Practice good personal hygiene: Washing hands after defecation, especially before eating. Never restrict fluid intake during work because a toilet is not available. Restricting fluid intake harms your health. Consider possible options such as portable cabins or chemical toilets.

POINTS TO REMEMBER

Clean toilets and washing facilities that are readily accessible are necessary for your well-being and productive work.

WIB IMPROVEMENT ACTIONS

Figure 17a, Toilet with appropriate washing facilities.

Figure 17b. Provide washing facilities with a supply of soap and a means of drying the hands.

5. Development of WIB activities in different groups of seamen and fishermen

The WIB activities are now spreading to different sectors of maritime work. It is necessary to exchange positive experiences in these sectors and promote further application of the WIB program nationwide and internationally. Recent experiences clearly show the merits of applying the WIB program by organizing short-term training workshops explained in this manual.

We should note the action-oriented nature of the WIB program with the consistent use of simple procedures for applying participatory steps explained in this manual. This action-oriented feature of the WIB program has proven useful for encouraging various groups of seamen and fishermen in recognizing their own existing good practices and further exploring new improvements based on their own positive experiences. The action tools of the WIB program are certainly useful for training seamen and fishermen towards making similar improvements in their own vessels.

It is hoped that this manual will be used extensively by different groups of seamen and fishermen so that the occupational safety and health management of their working conditions can be better organized and the work-related accidents and illnesses can be prevented more effectively in the broad areas.

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