

Guidebook for Improving Logistics Operations (KAIZEN - Guidebook)



Establishment of Improvement
Promotion System

Grasping of Current Situation of
Logistics Operations

Improvement Planning

Execution of Improvement

Evaluation / Establishment /
Horizontal Deployment

Purpose of this guidebook

The environment for corporate management is drastically changing, with factors such as economic globalization and the product life cycle becoming shorter. Amid such circumstances, the industrial community is promoting the establishment of supply chain management and higher efficiency for logistics, to survive global competition and enhance corporate value. In order to make supply chain management and logistics function effectively in the current situation, in which high speed and higher efficiency are strongly sought, it is absolutely necessary to strengthen the “Skills required to improve logistics operations,” to cope with the environmental changes in business management. Further, it is important to implement improvement activities for logistics operations, for the purpose of strengthening the “Skills required to improve logistics operations.”

Japan Institute of Logistics Systems (JILS) created the “Guidebook for Improving Logistics Operations” in 2007 to provide impetus to the activities for improving logistics operations, and has repeatedly revised it for dissemination since then.

In this guidebook, the implementation process for activities to improve logistics operations is divided into four stages, and it is recommended that activities should be deployed in line with this “Cycle for activating improvement activities.” Thus, activities to improve logistics operations can be disseminated broadly in the industrial community. The “Checklist for activating improvement of logistics operations,” the “Checklist for finding problems,” and the “Competences required as a leader of logistics operations” are also introduced in this guidebook.

Furthermore, this guidebook is full of hints and company examples to strengthen the “Skills required to improve logistics operations”. There are also six viewpoints for companies’ establishing and revitalizing activities to improve logistics operations, based on a questionnaire taken by 188 companies in 2017.

Please use this guidebook to gain awareness of the necessity of improving logistics operations, solve problems, and step up activities.

Efforts of JILS to Support Activities to Improve Logistics Operations

▶ Human Resource Development

- Certified Logistics Kaizen Master Course
- Seminar on Improvement of Logistics Operations

▶ Awards System

- Logistics Rationalization Award
- Logistics Rationalization Effort Award

▶ Improvement Cases

- Collection of Improvement Cases of Logistics Operations
- Lecture Meeting for Promotion of Improvement of Logistics Operations

▶ Improvement Case Presentations

- All-Japan Convention for Logistics Improvement Case Studies
- Kansai Logistics Improvement Case Presentation Meeting
- Chubu Logistics Improvement Case Presentation Meeting
- Kyushu Logistics Improvement Case Presentation Meeting

▶ Support Tools

- Guidebook for Improving Logistics Operations
- Checklist for Activating Improvement of Logistics Operations
- Checklist for Finding Problems
- Competences Required as a Leader of Logistics Operation

Introduction

Improvement of Logistics Operations

Improvement of Logistics Operations indicates activities to contribute to enhancement of Customer Satisfaction and Employee Satisfaction, through all workers participating in them and continuously improving the work methods and content as well as the work processes, for a series of operations and auxiliary work in a distribution center, such as transportation, receipt of goods, inspection, sorting, storage, picking, packing, cargo handling, loading, shipment and distribution.

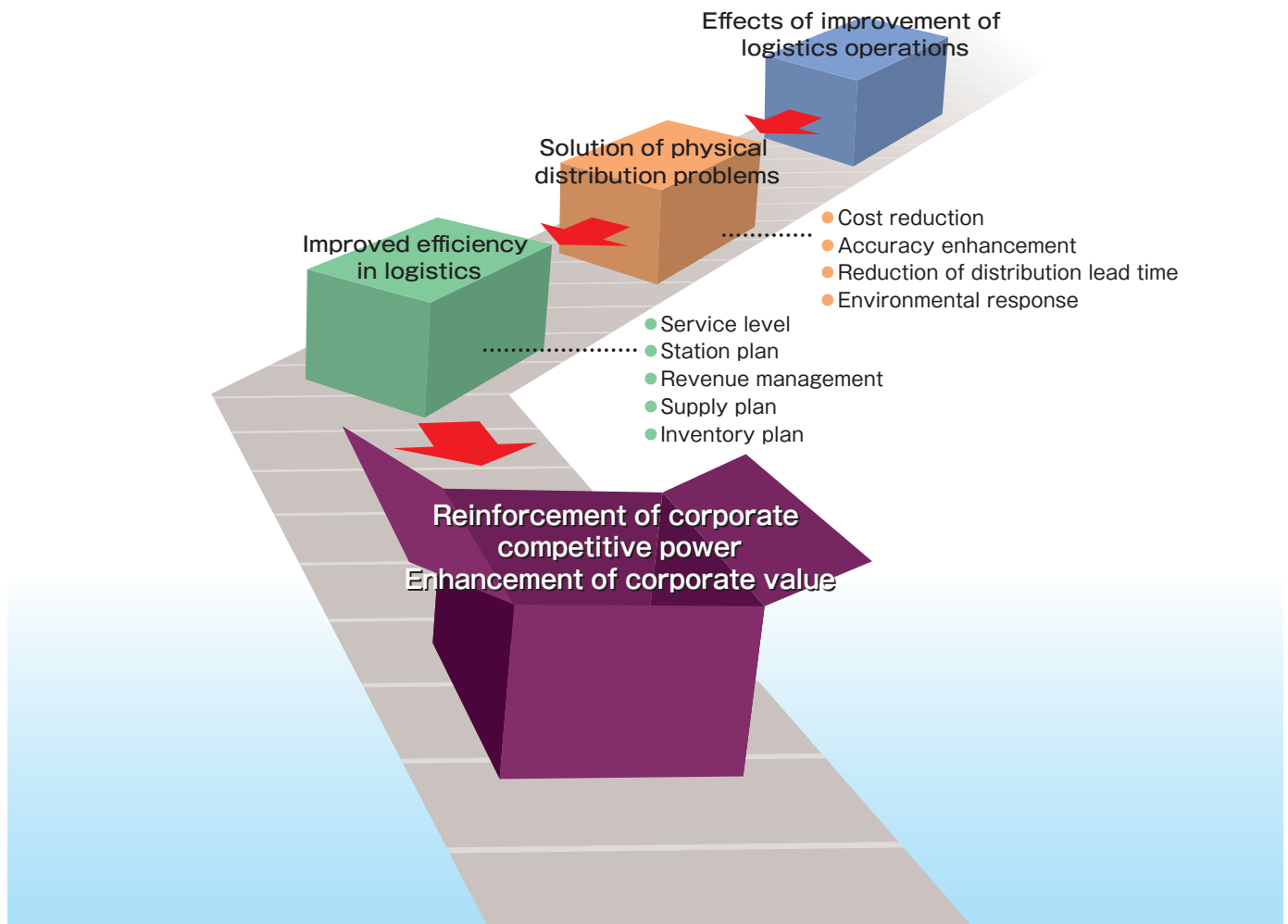
Effects of Improvement of Logistics Operations

[Enhancement of Customer Satisfaction(CS) and Employee Satisfaction(ES)]

- Enhancement of work productivity
- Improvement of distribution quality
- Safety improvement
- Improvement of work environment
- Reduction of operation cost
- Enhancement of article management accuracy
- Reduction of environmental burden

Impact of Improvement of Logistics Operations

Higher logistics efficiency will be attained as a result of solving various distribution problems through the results of improvement of logistics operations, and reinforcement of corporate competitive power and enhancement of corporate value will be achieved.



Basic Flow of Activities to Improve Logistics

Basic Flow of Activities to



Area Division



- This guidebook describes the scope, work, related departments and roles in the three areas of “Logistics,” “Physical Distribution” and “Distribution Work.”
- It is possible to use this guidebook as an overview of the total image of logistics and physical distribution, and when confirming logistical functions, and the target areas for improvement activities.

   Pages 4 to 5

Cycle for Activating the Improvement Activities



- This guidebook describes the points in each process by dividing activities to improve logistics operations into the four processes of “Awareness and Problem Grasping,” “Improvement Activities,” “Information Sharing and Horizontal Deployment” and “Evaluation and Rewarding.”
- The process and the cycle (flow and circulation) of activities to improve logistics operations are confirmed and it is recommended that improvement activities should be deployed in line with this cycle.

   Pages 6 to 7

Six Viewpoints to Establish and Revitalize Activities to Improve Logistics Operations



- This guidebook describes the points to be worked on by the entire organization to establish and revitalize activities to improve logistics operations, using each of the following six viewpoints: “Human Resource Development,” “Setting of Policy and Targets,” “Establishment of System and Framework,” “Organizational Structure and System,” “Company Climate and Communication,” and “Inter-Company Collaboration,” with company cases as examples.
- It is possible to use this guidebook to grasp the current situations of, and consider policies for, improvement activities in the entire organization.

  Pages 8 to 11

Checklist for Activating Improvement of Logistics Operations



- A checklist in which the implementation levels of activities to improve logistics operations (20 items), based on the cycle for activating the improvement activities, are represented in four stages.
- It is possible to use this checklist to grasp the strengths and weaknesses of the company’s improvement activities and stages of activities (i.e., prior to activity, initial stage, implementation, and revitalization).

     Pages 12 to 13

     The colors in the frames indicate the typical uses of the contents, corresponding to the color

Operations and Use of this Guidebook

Improve Logistics Operations



Frequently Occurring Problems, Activities to Improve Logistics Operations, KPI



- This guidebook describes the problems in distribution work (i.e., transportation and delivery, receiving and shipping, inspection, loading, storage, sorting, picking, packing, packaging, etc.), and examples of implementation measures for improvement activities.
- It is possible to use this guidebook to confirm the procedures for improvement activities for the target work and achieve the action plan with concrete examples of problems, issues, improvement measures, a scale for evaluation, etc., all arranged in line with the cycle for activating improvement activities.

 >>> Pages 14 to 17

Checklist for Finding Problems



- A checklist in which the implementation levels of logistics operations and management (20 items) are represented in four stages.
- It is possible to use this checklist to detect problems and grasp the stages of activities (i.e., prior to activity, initial stage, implementation and revitalization) in your company.

 >>> Pages 18 to 19

Competences Required as a Leader of Logistics Operations



- This guidebook describes the competences required as a leader of logistics operations, such as “Ability to Grasp Current Situation,” “Ability to Plan Improvement,” “Ability to Perform Improvement” and “Ability to Evaluate and Establish,” and their content (competence requirements).
- Leaders can use this guidebook to recognize their own strengths and weaknesses by performing self-diagnoses on these competence requirements, and to plan future self-development and training to overcome their weaknesses.

 >>> Page 20

Visual Samples (Frequently Occurring Problems in Logistics Operations and Examples of Improvement Activities)



- This guidebook describes frequently occurring problems in logistics operations and examples of implementation measures for improvement, in an easy-to-understand manner.
- It is possible to use this guidebook as material for awareness about problem detection in activities to improve logistics operations, and in planning improvement measures.

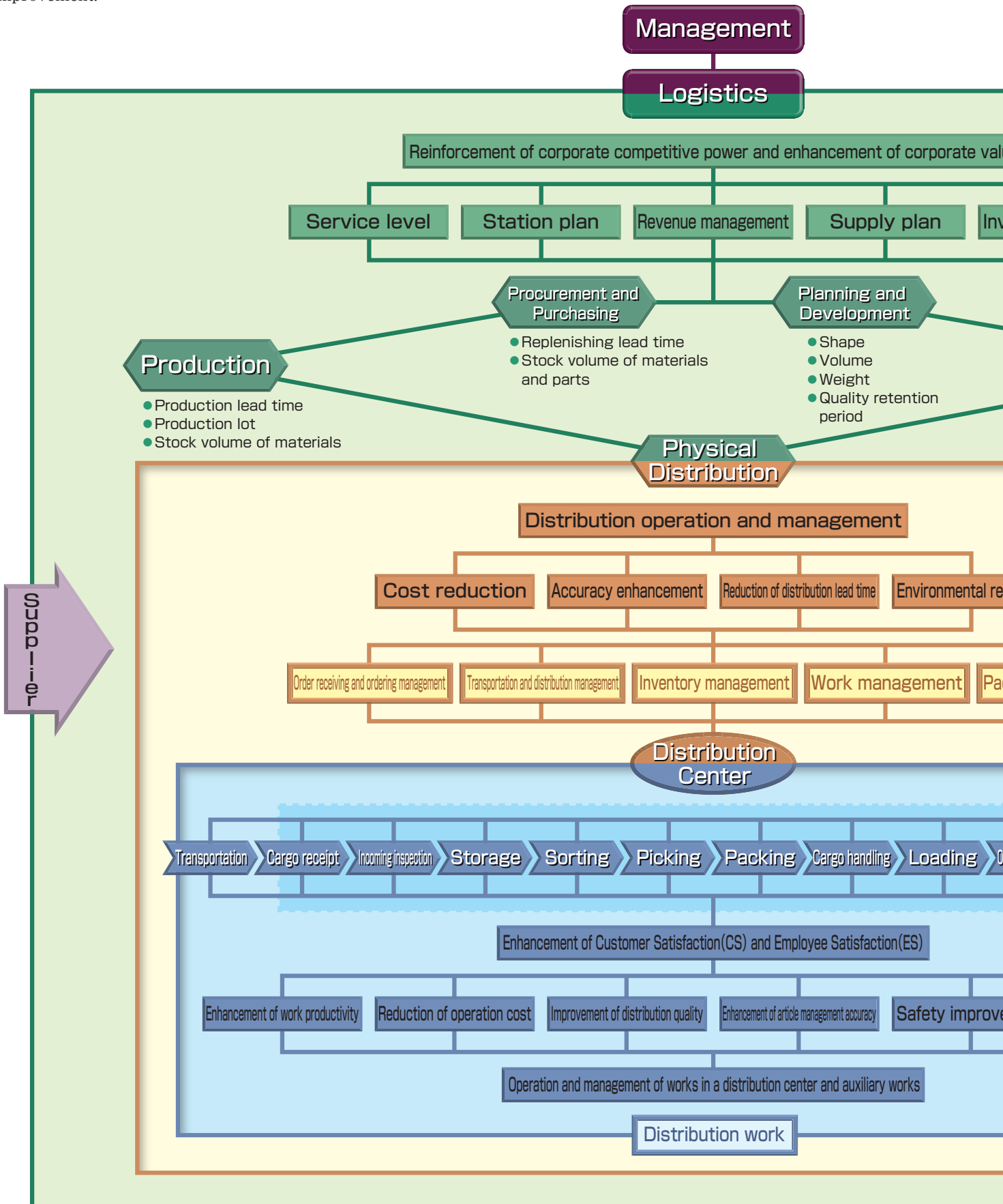
 >>> Pages 21 to 29

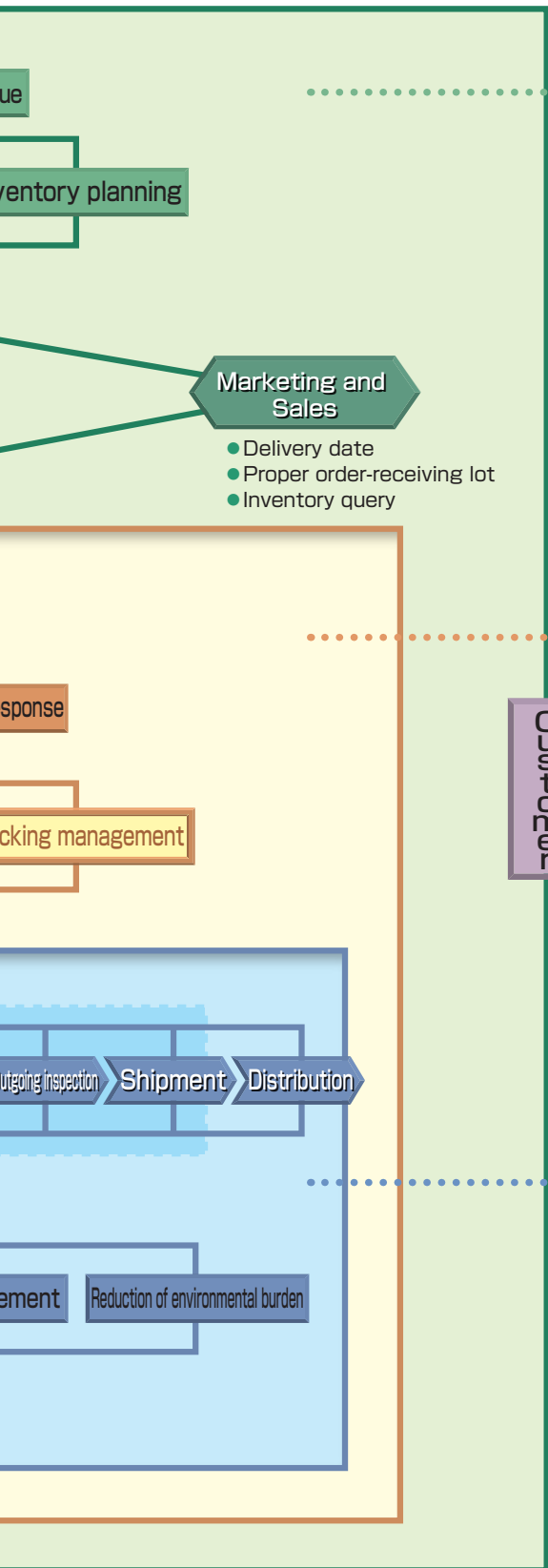
of each process in the “Basic Flow of Activities to Improve Logistics Operations”

Division into Areas

With the division into the three areas of “Logistics,” “Physical Distribution” and “Distribution Work,” one operation that goes to make up “Logistics” is defined as “Physical Distribution,” and within “Physical Distribution,” the work in a distribution center and the auxiliary work are defined as “Distribution Work.”

In this guide book, improvement of “Distribution Work” (the blue section in the figure below) is classed as “Distribution site improvement.”





[Area Division]

Logistics	
Target scope	The target is the integrated scope of: planning and development; production; physical distribution; and marketing and sales.
Target work	Planning and development; procurement and purchasing; production; physical distribution; and marketing and sales
Related departments	Cross-departmental (collaboration with subcontractors)
Roles	Service level; station plan; revenue management; supply plan, inventory planning; etc.

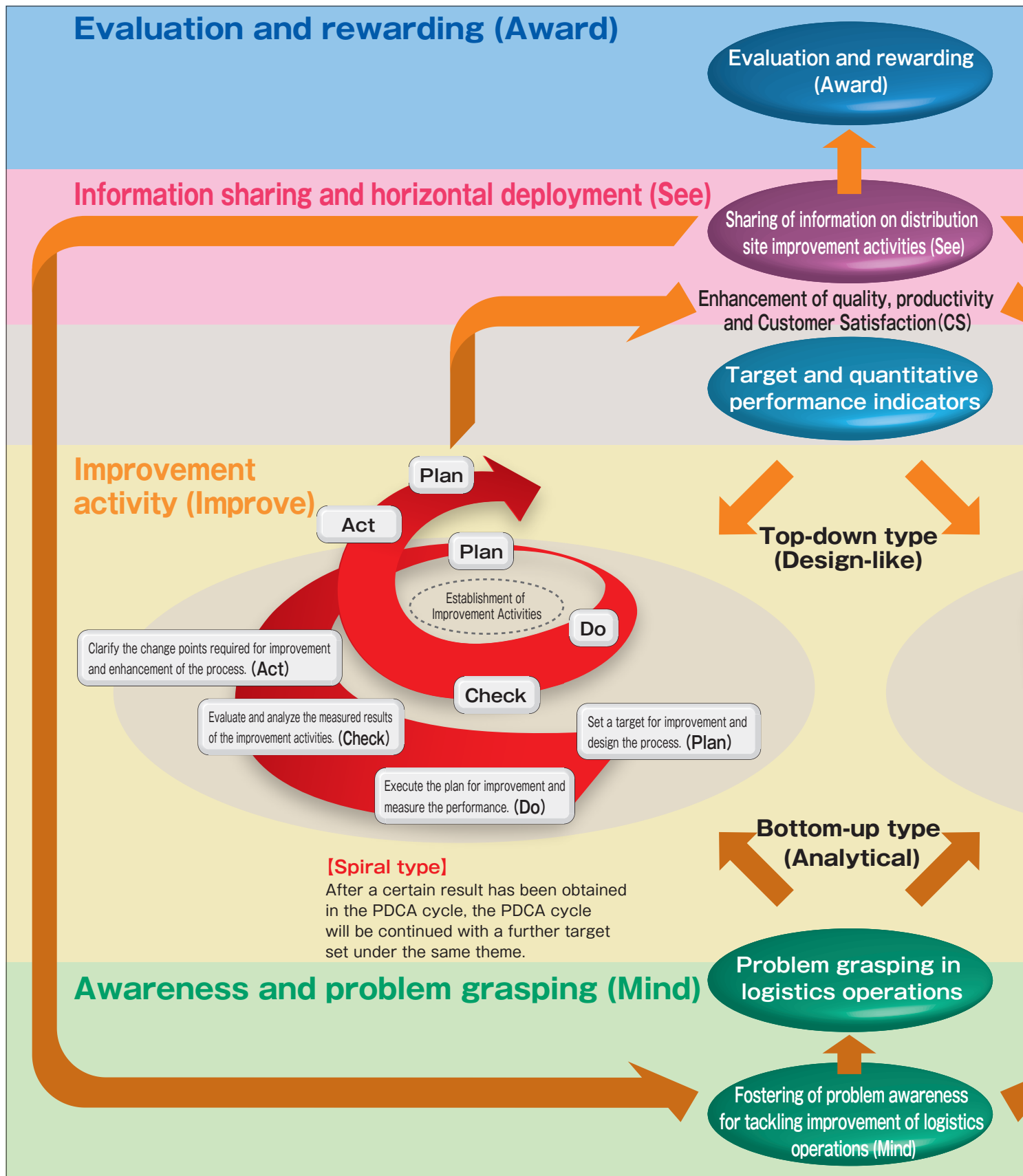
Physical Distribution	
Target scope	The target is the integrated scope of multiple distribution operations and processes.
Target work	Order receiving and ordering management; transportation and distribution management; inventory management; work management; and packing management
Related departments	Distribution department
Roles	Cost reduction; accuracy enhancement; reduction of distribution lead time; environmental response; etc.

Distribution Work	
Target scope	The target is a small group that can complete the work in one workplace (site).
Target work	Transportation; cargo receipt; inspection; storage; sorting; picking; packing; cargo handling; loading; shipment; and distribution
Related departments	Distribution center
Roles	Enhancement of work productivity; reduction of operation cost; improvement of distribution quality; enhancement of article management accuracy; safety improvement; reduction of environmental burden; etc.

Cycle for Activating Improvement Activities

The cycle for activating improvement activities indicates the improvement activities appropriate for each process, when the activities to improve logistics operations are divided into four processes.

In this guidebook, it is recommended that activities should be deployed to improve logistics operations in line with the cycle for activating improvement activities. As an impetus to improvement, awareness and grasping the problem are achieved, improvement activities are performed to solve the problem, and the results are shared as information and deployed horizontally. Furthermore, to connect this to the next improvement, it is important to link the results with awareness and problem grasping, firmly establish the activities to improve logistics operations, and at the same time evaluate and reward the results both internally and externally.



Awareness and problem grasping (Mind):

Indicates the stage of understanding the necessity of improvement and grasping where the problem lies, in a situation where distribution site improvement activities are not performed. What is required: To provide an impetus for distribution site improvement activities.

Information sharing and horizontal deployment (See):

Indicates the stage of sharing information on and horizontally deploying the results, in a situation where distribution site improvement activities are performed continuously. What is required: To use these results as an impetus to cause a ripple effect to other sites and thus lead to new distribution site improvement activities.

Improvement activity (Improve):

Indicates the stage of performing distribution site improvement activities with the PDCA cycle through accurate target setting and a systematic approach, in a situation where a problem has been grasped and a distribution site improvement activity is performed. What is required: To get results from and firmly establish the distribution site improvement activities.

Evaluation and rewarding (Award):

Indicates the stage of evaluating and giving a reward for the improvement results on which information has been shared, both internally and externally, and thus enhancing motivation to perform distribution site improvement activities. What is required: To broadly commend the results not only within the company, but outside it as well.

[Key points for firmly establishing the cycle]

[Evaluation and rewarding]

Self- (internal) and mutual development:

- Internal evaluation system
- Transmission of information to the outside
- Evaluation from the outside

[Information sharing and horizontal deployment]

Information sharing : ● Accumulation of improvement database
 ● Presentation in the company and in the group

Horizontal deployment : ● Firm establishment Compiling into manuals

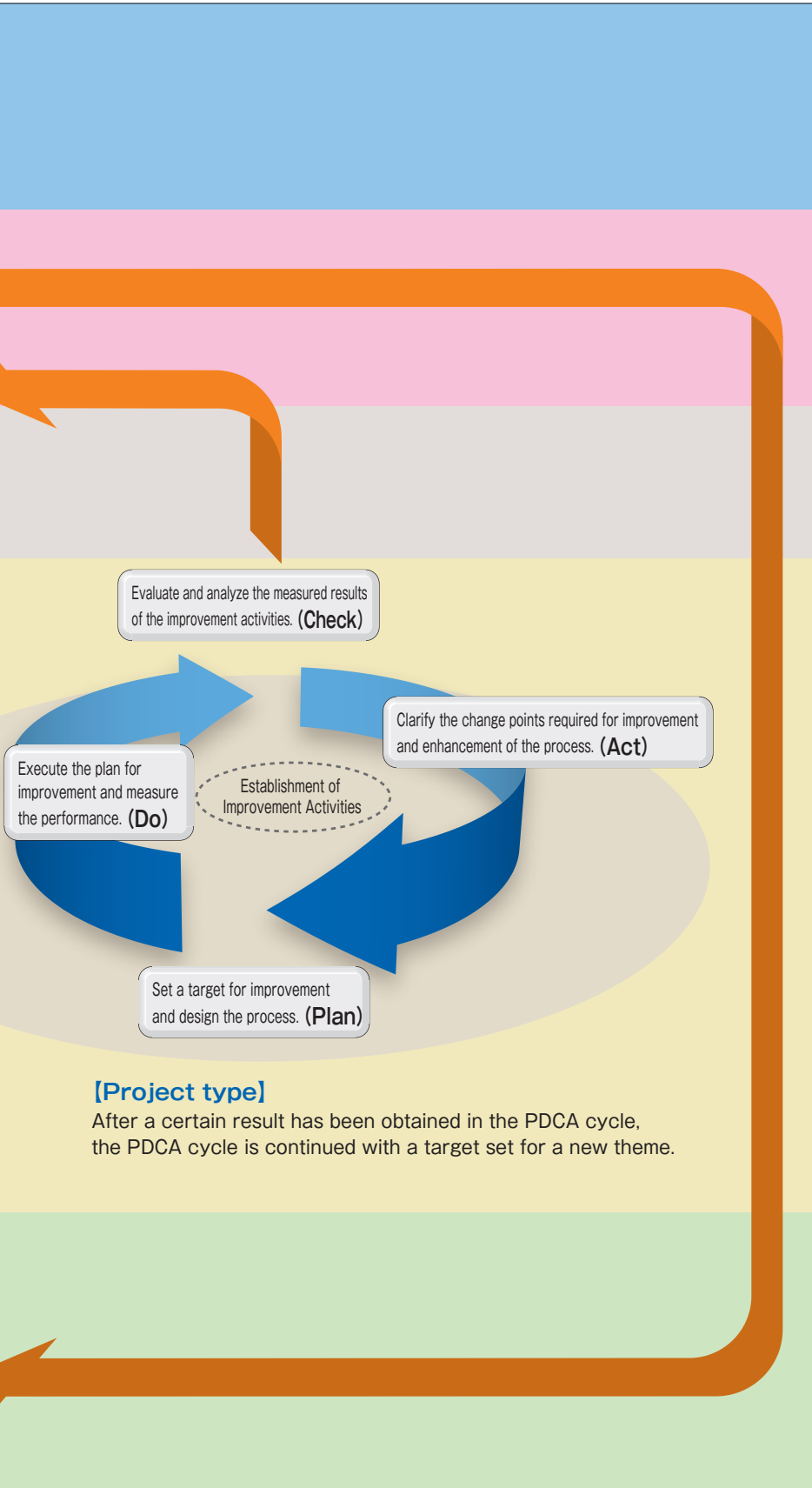
[Improvement activity]

Support from organization : ● Intentions of top management

Education : ● Development of human resources

Workplace environment : ● Mechanism for participation of all employees
 ● Environment for continuation and establishment

Firm establishment : ● Standardization



[Project type]

After a certain result has been obtained in the PDCA cycle, the PDCA cycle is continued with a target set for a new theme.

[Awareness and problem grasping]

Human : ● Desire to tackle improvement

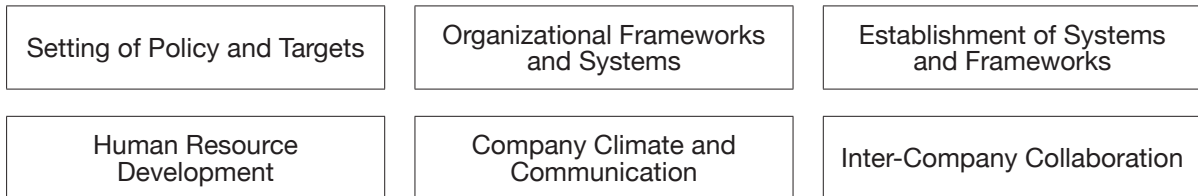
Environment : ● Easiness of tackling improvement

Six Viewpoints for Establishing and Revitalizing Activities to Improve Logistics Operations

It is necessary to “work on improvement in the entire organization” to establish and revitalize activities to improve logistics operations. It will be important to create the organizations and frameworks for deciding policies and targets and promote improvements under the guidance of management and senior executives.

Having performed questionnaires and interview surveys targeting companies that perform activities to improve logistics operations, JILS has summarized the points for establishing and revitalizing activities to improve logistics operations from six viewpoints. These are introduced together with company cases.

Six Viewpoints for Establishing and Revitalizing Activities to Improve Logistics Operations



Setting of Policy and Targets

It is indispensable to set not only company-level strategy and targets but also the policy and targets for improvement of logistics operations. It is necessary to share them company-wide, from the management to the workplace level, and to work on improvements toward achieving the targets in line with the policy.

Points for Promotion

- Set the policy and targets for improvement of logistics operations in a way that relates them to the strategy, policy and targets in the company.
- Set the targets concretely and quantitatively. Set the Key Performance Indicators (KPIs).
- Make the policy and the targets thoroughly known among the company members and get the significance of KPIs to be understood through day-to-day communication, so that company members will actively participate in and work on improvement activities.
- The management and senior executives must not simply leave the activities to the site, but shall actively maintain contact with it and work to ensure its members have the same sense of purpose, all while listening to their voices.
- Strive to achieve the targets while confirming the KPI trends with the people concerned.

Example: Sharing of Policy and Targets through Continued Direct Communication

(Business type: Logistics subsidiary)

- In Company A, policies and targets, etc., on improvement are summarized in the improvement promotion department and decided by means of the President's Report.
- On the basis of the fact that achievements from improvement of logistics operations will be reflected in "Cost" and "Quality," the "Cost Reduction Rate" and the "Number of Complaints" are defined as Key Goal Indicators (KGIs).
- In the distribution centers throughout Japan, for the purpose of achieving the KGIs, the KPIs for achieving cost reduction and reducing complaints to zero are defined and improvement activities are proceeded with.
- Policies and targets for improvement of logistics operations are shared through the heads of distribution centers having many opportunities to have direct conversations with employees.
- The heads of distribution centers participate in small group improvement activities wherever possible, and give guidance on improvements and share the progress situations of the improvements in each distribution center, using their daily morning and mid-day meetings.
- Through continued communication, a foundation is being created in which policies and targets for improvement of logistics operations are shared by all members, from the management and senior executives to the site staff, and then improvements are carried out.

Organizational Frameworks and Systems

A specialized department shall be established and persons in charge shall be assigned to manage company-level improvement activities. Many duties shall be performed, such as support for and control of improvement at each distribution site, creation of a human resource development plan and horizontal deployment of improvement results.

Points for Promotion

- To get activities to improve logistics operations established in the whole company, senior executives shall get actively involved and also conduct top-down promotion.
- Make the approach not only top-down but, bi-directional with a bottom-up approach too. Company members from the top management to employees shall have the same sense of purpose.
- Establish a department to perform company-wide management of activities to improve logistics operations, and assign a dedicated person in charge of improvement and a person in charge of improvement concurrently with other duties at each distribution center.
- The persons in charge of improvement shall manage and support the activities to improve logistics operations and extend cooperation through reporting, communication and consulting with senior executives.
- Because the scope of the work for the persons in charge of improvement is broad and diverse, proceed with the work systematically through multiple members with shared duties.
- Senior executives shall create an environment in which the persons in charge of improvement can perform activities easily.

Company Example: Assigning Dedicated Persons in Charge of Improvement of Logistics Operations

(Business type: Logistics company)

- In Company B, three dedicated persons in charge of improvement, including managers, have been assigned, and internal management for improving logistics operations is performed so that the internal improvement of logistics operations can be promoted.
- The dedicated persons in charge cover a wide range of work, undertaking guidance for improving logistics operations based on KPIs, management of small group activities in the whole company, the role of lecturers in internal training on improvement of logistics operations, evaluation and commendation of the achievements of each improvement activity, and support for external presentation meetings, etc.

(Business type: Logistics subsidiary)

- In Company C, two dedicated persons in charge of performing company-wide summarization of improvement of logistics operations and one person in charge of improvement work at each site (concurrently with routine work) have been assigned, and are promoting improvement of logistics operations.
- The dedicated persons in charge are proceeding with improvement work in collaboration with the person in charge at each station while managing the progress of improvement activities. Furthermore, they provide support, etc., when monthly study sessions are held on improvement activities or excellent improvement cases are presented at internal/external presentation meetings.

Establishment of Systems and Frameworks

Providing opportunities to present the improvement activities and achievements internally and externally will lead to revitalization of improvement. Furthermore, it will be effective to create and implement various systems and frameworks to promote improvement activities.

Points for Promotion

- Hold an improvement case presentation meeting every year internally, share improvement results with the whole company and perform horizontal deployment of improvement activities.
- Raise the motivation of employees and revitalize improvement activities further by commending and rewarding excellent improvement cases, posting them in the in-house newsletter and on the bulletin board, etc.
- Announce the results of excellent internal improvement cases at external improvement presentation meetings.
- Link improvement activities with the personnel system (promotion and increase in status).
- Establish and revitalize improvement activities by establishing systems and frameworks to support them.

Company Example: Implementation of Improvement Case Report Meeting and Evaluation of Improvement Results

(Business type: Retailing)

- In Company D, a report meeting (presentation of improvement cases) is held three times a year jointly with other companies concerned. Five to ten companies get together at the report meetings, and improvement cases are presented that have been tackled by each company. Company members from senior executives to persons in charge of the workplaces participate. These report meetings are held every year, with the improvement promotion department as the main organizer.
- The aim of presenting improvement cases at the report meetings is to bring problems to the attention of senior executives and managers, create an opportunity for the relevant companies and departments to easily collaborate with each other and handle them as problems that belong to the whole company, and give the persons in charge the authority to solve them.
- In the report meetings, sympathy awards (for cases that have gained sympathy) are selected through voting by the meeting participants, and certificates of commendation and rewards are granted according to the ranking.
- Holding of the report meetings creates the driving force for improvement activities and the fact that “the persons in charge of the workplace take a leading role” enhances motivation.

Human Resource Development

The development of human resources capable of improving logistics operations is regarded as most important also in companies where improvement of logistics operations has become firmly established. The key to it will be further development of and the playing of active roles by leaders for improvement of logistics operations.

Points for Promotion

- Create a system and education program for the development of distribution human resources through mutual cooperation between logistics and personnel departments, while taking into consideration the relationship with the company-level education system.
- Classify what internal training is possible and what is not possible, and make use of external training.
- Provide education on knowledge and the improvement methods required according to each stage of the procedures for improving logistics operations (grasping of the current situation, problem detection, improvement planning, implementation, evaluation, establishment and horizontal deployment).
- Teaching is learning. Therefore, have the employees who have learned improvement techniques and gained practical experience serve as lecturers for internal training.
- Secure an education budget every year to perform human resource development continuously.

Example: Human Resource Development by Means of a Systematic Education System

(Business type: Logistics subsidiary)

- In Company E, a framework has been established in which the yearly schedule is set under a systematic education system structured to address common, stratified and cross-functional needs, and all employees, from new staff to the president, can learn through group training or e-learning, etc.
- Regarding improvement of logistics operations, improvement techniques and methods such as the “Seven Basic Tools of QC*,” “Small group activities**” and “Improvement practices using Industrial Engineering (IE)” are being widely taught, and the degree of mastery is determined by conducting tests.
- In internal training, experienced middle-ranking or higher-ranking employees serve as lecturers. Through this, know-how on improvement is provided, and at the same time, it leads to growth and level improvement for the employees serving as lecturers.
- To create the foundation for improvement of logistics operations, including the education system, the persons in charge in the improvement promotion department have worked on building the cooperation system together with the personnel department, rather than just working on it in the logistics department alone, and have developed the system into a company-wide framework.

*Seven Basic Tools of QC : A set of methods that enables anyone to easily use SQC (Statistical Quality Control) as a tool to analyze the cause of observation of the facts and from the data obtained there, leading to problem solving such as quality improvement. Seven Basic Tools of QC are Cause-and-effect diagram, Check sheet, Control chart, Histogram, Pareto chart, Scatter diagram, and Stratification.

**Small group Activities : A method for improving activities to make employees construct a small group of 10 people or less, to raise labor motivation through voluntary joint activities, and effectively achieve the purpose of the company.

To achieve smooth communication, it is important to perform various activities with flexibility. This will break down the barriers between organizations, enhance inter-departmental collaboration and teamwork among employees, and thus lead to revitalization of improvement activities.

Points for Promotion

- Actively go to the site and have communication opportunities because the strength of connection between the site and the management and senior executives will be a big advantage when promoting improvement activities.
- Considering the variety of effective activities that can be performed across the whole company, and in each department and group, it is important to have flexibility.
- Interactions between employees who do not routinely work together are effective.
- Provide opportunities to enable people to come into contact with each other for reasons other than work.
- Use not only direct interaction but also the in-house newsletter.
- Consider the budget required for guiding the plan toward achieving smooth communication.

Company Example: Implementation of Activities for Smooth Internal Communication

(Business type: Logistics company)

- In Company F, recognizing that “Internal Communication” is important to establishing and continuing improvement activities, the following activities are being implemented.
 - ▷ Interaction through participation by the management in the morning meeting.
 - ▷ Pointing out of things to be improved through mutual communication between the persons in charge at different sites.
 - ▷ Introducing as many employees as possible through photos in the in-house newsletter.
 - ▷ Active holding of convivial parties, such as welcome/farewell parties.
- Through these various activities, smooth company-wide communication has been achieved, the employees’ teamwork has been enhanced, and activities to improve logistics operations have been revitalized.

(Examples from other companies)

- In other companies, activities to create “opportunities for communication between people” are being performed.
 - ▷ Holding study sessions in the workplace.
 - ▷ Conducting study tours.
 - ▷ Promotion of “smiling and greeting” campaigns.
 - ▷ Holding dinner and lunch parties.

Even between interested companies (i.e., between a consignor and a consignee, between a shipper and a logistics company, between logistics companies, etc.), it is necessary to share policies and targets for distribution improvement, and also share information and give it consideration while communicating with each other.

Points for Promotion

- Because relations involving interested parties tend to occur in many situations between companies that have business relations, clarify the purposes, targets, and policies for related companies as a whole, and work on improvements from the viewpoint of total optimization.
- Share the progress of activities and the results of improvements among the related companies as a whole, and create a mechanism that enables everyone to get a sense of achievement.
- Set a periodic joint meeting between companies, share the progress of improvement and problems/issues, and promote improvement activities through mutual cooperation.
- Make the targets, the actual results, and the differences between them quantitatively visible. (Setting of KPIs)
- Make efforts toward smooth day-to-day communication and information transmission, so that information can be shared on occasions other than periodic meetings.

Company Example: Sharing of Improvement Policy and Improvement Proposals that goes beyond Inter-organizational Barriers

(Business type: Logistics subsidiary)

- In Company G, the policy “Pursue the interests of the entire group” has been declared and is shared between the parent company and the company itself, and distribution improvement is promoted through mutual collaboration.
- The company has a system in place to immediately propose an improvement idea to the persons in charge in the departments related to development, materials, procurement, production, etc., in the parent company when it finds “an opportunity” for distribution improvement in them.
- Based on improvement proposals, both companies examine the necessary investigation, designing of parts, changes to delivery conditions, etc., through mutual cooperation.
- This company is promoting improvement of logistics operations jointly with the parent company, not only at the periodic meetings, but by using smooth day-to-day communication and collaboration between departments as a foundation.

(Examples from other companies)

- Meetings with senior executives from shippers and logistics companies that are related to each other through the supply chain are held on a regular basis, and implementation measures for each company are decided that are based on policy collaboration from the viewpoint of total optimization.

Checklist for Activating Improvement of Logistics Operations

JILS recommends activities to improve logistics operations that are in line with the cycle for activating improvement activities.

The purpose of this checklist is for you to identify how you differ from the industry's average with regard to which processes in the cycle for activating improvement activities you have strengths or weaknesses in.

↓ Please self-analyze the present level of your company and fill out the response sheet using numerical values.

Category	Item	Points	Level 1 (1 Point)	Level 2 (2 Points)
Awareness and Problem Grasping	1	Recognition of necessity	Necessity of improvement is not recognized.	Necessity of improvement nothing has been done.
	2	5S	No definition of 5S (Seiri, Seiton, Seisou, Seiketsu, Shitsuke)	Being performed occasionally
	3	Periodic cycle	Being handled on an ad hoc basis.	There is a system for raising irregularly.
	4	Knowledge for observation	There is no viewpoint for recognizing waste.	Education on waste elimination
	5	Education	No education is being provided.	Education is being provided,
Category Total				
Improvement Activity	6	Activity in small groups	No activities in small groups are performed.	It is impossible to create activities regularly.
	7	PDCA cycle	The word PDCA is known.	The content of PDCA is is not being run.
	8	Reporting, informing and consulting	Being answered when asked.	There is a format but not being
	9	Conference body	There is no conference body regarding improvement.	Being held irregularly.
	10	Organization and personnel affairs	There is no organization and no person in charge of improvement.	An organization and a person in charge established/assigned, but no sufficient
Category Total				
Information Sharing and Horizontal Deployment	11	Personnel changes	There are no personnel changes.	There are no periodic personnel
	12	Information collection	There is no environment that enables information collection.	As there is no place where improvement takes much time to collect information.
	13	Introduction of improvement cases	There is no introduction of improvement cases.	Introduction is only done in a simple
	14	Posting on in-house intranet	There is no intranet.	There is an intranet, but no appears on it.
	15	Transmission of improvement information to the outside	Information is not transmitted.	There are opportunities for improvement transmitted to the outside, but the respo
Category Total				
Evaluation and Rewarding	16	Corporate policy	There is no periodic announcement of the policy.	The policy is periodically an content cannot be understo
	17	Improvement proposal system	There is no improvement proposal system.	There is an improvement pro it is not utilized.
	18	Internal qualification	There is no qualification system.	An internal qualification sys to a partial extent.
	19	Personnel evaluation and promotion	Evaluations are not fed back.	Evaluations are fed back, enabling their own weaknesses.
	20	Improvement case presentations	Presentations are not held.	Presentations are held, but not recognized.
Category Total				
Total points and activity stages			Pre-activity stage (20 to 29 points)	Initial stage (30 to

(Target: Organizational units of small groups, etc.)

	Level 3 (3 Points)	Level 4 (4 Points)
is recognized, but	The necessity of improvement is recognized and worked on.	The necessity of improvement is recognized, and an environment that makes working on it easier is in place.
as a campaign.	Seiri, Seiton, Seisou, Seiketsu and Shitsuke are being displayed, and have taken form	Setting criteria are being reviewed and updated.
a problem, but	Detecting problems is conducted regularly.	New themes are set according to annual policies.
is being provided.	The viewpoint of the Seven Wastes is understood.	Wastes have been eliminated, thus leading to productivity improvement (cost reduction).
but not regularly.	An education curriculum and the texts for it have been created and education is provided.	An education curriculum and the texts for it have been created, education is provided, and the content is reviewed as required.
opportunities for	Small groups are registered and conduct activities regularly.	Leaders of the members have been re-elected and things have become active.
understood, but	The content of the PDCA cycle is understood and activities are performed in accordance with the cycle.	The PDCA cycle is always being run.
continued.	"Reporting, informing and consulting" is prepared regularly.	There is a mechanism for feeding back by superiors.
	Meetings are periodically held under the theme of improvement.	Information is shared through the minutes.
of improvement have been results are being seen.	An organization and a person in charge of improvement have been established/assigned, and the sufficient result is seen.	The results are reviewed periodically.
changes.	Personnel changes are performed periodically.	Personnel changes are performed that can be understood as development of human resources based on "the right man in the right place" .
information is reported, it	There is a place where improvement information is reported (collected).	Information is systematized.
and fixed format.	There are opportunities for improvement cases to be introduced regularly.	Improvement cases are being horizontally deployed internally in an active manner.
information	Improvement information is posted on display and updated regularly.	The effects of posted information are verified.
information to be nses are not collected.	There are opportunities for improvement information to be transmitted to the outside, and the responses are being collected.	It is possible to determine the level of the company compared with other companies.
nounced, but the od.	The policy is periodically announced, but it does not lead to a sense of achievement.	People's responsibilities are reviewed using numerical values, and this is connected to the targets for the next year.
positional system, but	There is an improvement proposal system and proposals are submitted, but it does not lead to improvement results.	An improvement proposal system has been firmly established in the workplace, improvement proposals are made willingly, and this leads to improvement results.
tem is available	A qualification system has been put in place internally.	Promotion and qualification responsibilities are linked with each other.
employees to recognize	Improvement activities are evaluated.	There is a company climate whereby highly evaluated individuals and teams advance further.
their necessity is	Company-wide periodic presentation conferences for are held.	The presentations are used for PR directed toward the outside.
49 points)	Implementation stage (50 to 69 points)	Revitalization stage (70 to 80 points)

Frequently Occurring Problems and Examples of Improvement Activities

Practical measures for improvement activities are described from the viewpoints of “Target Work” and “Main Cause of Problem” with regard to the problems mentioned, such as “The cost is high,” “There are many complaints,” “Work efficiency is low,” “Distribution is inefficient,” “There are many errors,” “The safety level is low,” and “The environmental burden is large.”

	Mind	Improve	
Target Work	Viewpoint for Awareness and Problem Grasping	Issue to be solved	Improvement
Transportation and Delivery	Big gaps in the loading efficiency between various transportation/delivery routes	Delivery routes may not be appropriate	Reduce waiting time
	Too many vehicles	Too much idling time (waiting time) for vehicles	Review the routes
	Too many delays in delivery	Unable to ascertain the amount of cargo in advance	Identify appropriate types of vehicles (e.g. use of bigger/smaller vehicles)
	Damage to the goods	Rough driving	Improve the quality of transport by producing a manual for proper driving procedures
	High environmental burden	Consumption of too much fuel	Reduce the amount of fuel
			Consumption of too much fuel overall
Receipt/shipment/inspection/loading of goods	It takes time to receive goods and process shipments	Most cargo handling is done manually and it takes a long time to reach final confirmation	Introduce automatic recognition technology
	It takes a long time to inspect delivered cargos	The layout is not in line with the work flow	Introduce a unit loading system
	Inventory discrepancies occur	Storage is not in one place	Change the layout
		Repeated inspections are being done more than necessary	Review the list of items for inspection
Storage	Not enough storage spaces	Storage is not all in one place	Complete control of the stock in hand
	Storage places not easy to identify	The appropriate storage size for the line of goods has not been identified	Change the layout
	Too much space for storage	Space is not put to effective use	Complete control of the location
	No stock when orders are received	No stock of “required goods.” Discontinued goods are being neglected	Change the size of storage

Main Cause of Problem: The items for which improvement of logistics operations is required (The color for each main cause corresponds to the color in the Viewpoint of Awareness and Problem Grasping in the table below.)

Cost	Distribution Quality	Working Time	Work Accuracy	Environmental Response
------	----------------------	--------------	---------------	------------------------

		Measure for evaluation / Achievement			See	Award		
Improvement Measures		Improvement Effect	KPI Candidate	Achievement				
<p>Consider measures to reduce the loading/unloading time</p> <p>Set the most appropriate routes to standardize the loading efficiency and the delivery time (⇒①)</p> <p>Review the mixed-loading with goods from nearby centers and other companies and the delivery method for such mixed consignments (⇒②)</p> <p>Use cushioning materials to eliminate the gaps</p> <p>Reduce the waiting time, teach driving methods with less fuel consumption, reduce idling time (⇒③)</p> <p>Promote modal shift (⇒④)</p>		<p>Loading time reduction</p> <p>Reduction in driving time</p> <p>Reduction in the number of trucks</p> <p>Less damage to goods in transit</p> <p>Less fuel consumption CO₂ emission reduction</p>	<p>Decrease loading time by X min. / truck (Yt)</p> <p>X min. reduction in driving time</p> <p>Decrease the number of trucks by X</p> <p>X% reduction in damage to goods in transit</p> <p>Decrease fuel consumption by X%</p>	<p>Enhancement of Customer Satisfaction (CS) and Employee Satisfaction (ES)</p> <p>Enhancement of work productivity</p>	Detent Standardization and firm establishment of effects	Sharing of achievement and horizontal deployment		
<p>Use barcodes, IC tags, etc. (⇒⑤)</p> <p>Reduce manual cargo handling by using fork lifts, conveyors, sorters, etc.</p> <p>Setup work spaces and provisional storage spaces to meet the needs of ordering and/or delivery of goods</p> <p>Ensure that workers understand the issues which are "necessary"</p>		<p>Reduction of working time</p> <p>Reduction of the time to receive goods and process shipments</p> <p>Improvement in the accuracy of inspection of goods received and goods for shipment</p>	<p>X min. reduction in working time</p> <p>Processing time to be reduced by X min.</p> <p>Inspection accuracy to improve by X%</p>	<p>Reduction of operation cost</p> <p>Improvement of distribution quality</p> <p>Enhancement of article management accuracy</p>			Creation of manuals	Announcement of high evaluations and awarding both internally and externally
<p>Complete control of the stock in hand through a review of the location display (⇒⑥)</p> <p>Designate the location of the storage spaces by considering the frequency of shipments, ease of understanding, etc. (⇒⑦⑧⑨⑩)</p> <p>Put the storage spaces to effective use and control the stock by using automated warehouses</p> <p>Adjust the space between, and the height of, shelves, to suit the line of goods (⇒⑪⑫⑬)</p> <p>Make effective use of material handling facilities and equipment, such as racks</p> <p>Set standards for stock control and disposal of left-over goods</p>		<p>Stock control</p> <p>Improvement in storage efficiency</p> <p>Reduction in the amount of storage space</p>	<p>Accuracy of stock control to improve by X%</p> <p>Operation rate of storage space to improve by X%</p> <p>X% increase in the amount of stock</p> <p>X% increase in the amount of storage space</p>	<p>Safety improvement</p> <p>Reduction of environmental burden</p>				

※ The sample numbers (the red numbers circles) in the column for Improvement Measures correspond to the visual samples on Page 21 and onward.

Frequently Occurring Problems and Examples of Improvement Activities

Practical measures for improvement activities are described from the viewpoints of “Target Work” and “Main Cause of Problem” with regard to the problems mentioned, such as “The cost is high,” “There are many complaints,” “Work efficiency is low,” “Distribution is inefficient,” “There are many errors,” “The safety level is low,” and “The environmental burden is large.”

		Mind	Improve	
Target Work		Viewpoint for Awareness and Problem Grasping	Issue to be solved	Improvement
Others	5 S	Workplace is disorganized	Increase awareness of 5S (Seiri (Shifting), Seiton (Sorting), Seiketsu (Standardizing/Maintaining), Shitsuke (Discipline/	
	Safety	Accidents	<ul style="list-style-type: none"> Accidents caused by people Damage to, and soiling of, goods Damage to the facilities and equipment used Traffic accidents 	<ul style="list-style-type: none"> Improve work safety Review cargo handling procedures Take measures to prevent breakdown of, and accidents with, machinery and equipment Take measures to prevent traffic accidents
	Education	No educational program for workers	Workers have no understanding of the quality required for logistics	Provide education on logistical quality
Sorting and picking		<ul style="list-style-type: none"> Many mistakes in picking (wrong goods, wrong quantity) Long picking times Picking lines are complex and the walking time is long. Goods are damaged during the picking process 	<ul style="list-style-type: none"> A lot of picking being done manually No control in place regarding location setting Picking lists difficult to understand Shelf labels for the storage difficult to understand No measures in place to prevent damage on goods 	<ul style="list-style-type: none"> Introduce automatic recognition technology Change the location Review the display of the picking lists Review the picking lines Review the picking procedures
Packing and packaging		<ul style="list-style-type: none"> Mode of packing that gives no consideration to logistical requirements It takes a lot of time to package things Too much disposal of packaging materials 	<ul style="list-style-type: none"> When setting the mode of packing, logistical requirements are not taken into account Excessive packaging and packing No standardization of packaging 	<ul style="list-style-type: none"> Investigate the most appropriate mode of packing Simplify packaging Reuse and recycle packaging materials

Main Cause of Problem: The items for which improvement of logistics operations is required (The color for each main cause corresponds to the color in the Viewpoint of Awareness and Problem Grasping in the table below.)

Cost	Distribution Quality	Working Time	Work Accuracy	Environmental Response
------	----------------------	--------------	---------------	------------------------

		Measure for evaluation / Achievement			See	Award	
Improvement Measures		Improvement Effect	KPI Candidate	Achievement			
<p>Use barcodes, IC tags, etc. (⇒⑤)</p> <p>Adopt a “no-thinking” picking system, by making use of digital picking and picking carts</p> <p>Place the stock and walkways by taking account of walking distance, transfer time and human interactions (⇒④)</p> <p>Review the display of the picking lists in order to shorten picking lines to a minimum (⇒⑮)</p> <p>Design the location with reference to the frequency of shipment</p> <p>Establish a picking system which corresponds to the line of goods</p>		<p>Improvement in work accuracy</p> <p>Reduction of working time</p> <p>Work quality improvement</p>	<p>The number of complaints to decrease by X%</p> <p>Reduce mistakes in picking by X%</p> <p>Walk count to decrease by X%</p> <p>X% increase in the number of pickings per hour</p>	<p>Enhancement of Customer Satisfaction (CS) and Employee Satisfaction (ES)</p> <p>Enhancement of work productivity</p>	<p>Detent Standardization and firm establishment of effects</p> <p>Creation of manuals</p> <p>Installation of display objects and signboards</p>	<p>Sharing of achievements and horizontal deployment</p>	<p>Announcement of high evaluations and awarding both internally and externally</p>
<p>Set the most appropriate mode of packing throughout the whole logistical process</p> <p>Accommodate the features of the goods with the absolute minimum of packing/packaging</p> <p>Select and develop reusable packaging materials</p>		<p>Improvement in space efficiency</p> <p>Reduction of working time</p> <p>Waste reduction</p>	<p>Space efficiency to improve by X%</p> <p>Working hours to be reduced by X min.</p> <p>Scrappage rate to decrease by X%</p>	<p>Reduction of operation cost</p> <p>Improvement of distribution quality</p>			
<p>Seisou (Cleaning/Polishing/Tidying, Sustaining) (⇒⑯)</p>		<p>Organization of the workplace</p>	<p>Concept of “5S” to be disseminated through the use of a check sheet, etc.</p>	<p>Enhancement of article management accuracy</p>			
<p>Ensure workers wear work uniforms / protective clothing (⇒⑰⑱)</p> <p>Increase awareness of cargo handling and working procedures which correspond to the features of the goods</p> <p>Limit access to machinery spaces (⇒⑱)</p> <p>Improve knowledge of how to handle machinery and equipment (⇒⑲)</p> <p>Provide education on safe driving</p>		<p>Fewer accidents</p> <p>Fewer complaints about damage to, or soiling of, goods</p>	<p>No accidents</p> <p>Damage / dirt to decrease by X%</p>	<p>Safety improvement</p> <p>Reduction of environmental burden</p>			
<p>Provide education to workers on the logistical services and the work procedures (⇒⑳)</p> <p>Produce a manual for logistical operating procedures (⇒㉑)</p>		<p>Work quality improvement and fewer complaints</p>	<p>Attendance for educational seminars by workers to increase by X%</p>				

※ The sample numbers (the red numbers circles) in the column for Improvement Measures correspond to the visual samples on Page 21 and onward.

Checklist for Finding Problems (Target:

The purpose of this checklist is for you to grasp the problems in your own company's improvement of logistics operations and identify how you differ from the industry's average.

↓ Please self-analyze the present level of your company and fill out the response sheet using

Category	Item	Points	Level 1 (1 Point)	Level 2 (2 Points)
Cost	1	On-site work	The on-site flow is not analyzed. How to analyze the on-site flow is not known.	The on-site flow has been particular measures are
	2	Packing	The packing space rate (floor area ratio) is not grasped.	The packing space rate (fl grasped, but no measures
	3	Space	The storage size is not borne in mind.	Waste of the storage space measures are taken.
	4	Loading efficiency	The loading efficiency is not borne in mind.	The loading efficiency is g measures are taken.
	5	Grasping of cost	Calculation of the amount of opportunity loss is not borne in mind.	The amount of opportunity calculated.
Category Total				
Quality	6	Distribution quality	The number of complaints is not grasped.	The number of complaints is and grasped.
	7	Potential quality level	The voices of users regarding distribution quality are not borne in mind.	There is only a sense of impend the voice of users regarding dis
	8	Delivery response 1	The response lead time for stock inquiries is that a response is given the following day.	The response lead time for 10 minutes or shorter.
	9	Delivery response 2	It is not possible to provide a reply on the delivery time of a stockout item.	A response will be provided the delivery time of a stock
	10	Dirt and damage	The situation regarding dirt and damage is not grasped.	Dirt and damage is defined the number of cases is gra
Category Total				
Accuracy	11	Stockout situation	The stockout ratio is not borne in mind.	The stockout ratio is defin grasped.
	12	Inventory accuracy	Inventory discrepancies are not grasped.	Inventory discrepancies are accuracy is low.
	13	Delivery system	The designated-date delivery rate is not grasped.	The designated-date delivery r measures for shortening the le
	14	Shipping error rate	The shipping error rate is not grasped.	The shipping error rate is and its numerical value is
	15	Lead time	Satisfied with the current situation	There is problem awarene time but it is not managed.
Category Total				
Others	16	Accidents	The number of annual accidents resulting in property damage, vehicle accidents, accidents resulting in injury or death, etc. is grasped.	The number of annual accidents resulting in property resulting in injury or death, etc. is grasped, and they
	17	Clothing and appearance	There are no inspection rules.	There are workplace stan
	18	Morale	No education is provided to temporary employees dispatched from a temporary-employment agency or part-time workers.	Education is provided only irregularly to tem dispatched from a temporary-employment
	19	Workplace environment regarding work safety	There are no work safety standards.	There are work safety sta
	20	Devices and equipment	There are no maintenance standards for the devices and tools used.	There are maintenance st devices and tools used.
Category Total				
Total points and activity stage			Pre-activity stage (20 to 29 points)	Initial stage (30 to

Organizational units of small groups, etc.)

	Level 3 (3 Points)	Level 4 (4 Points)
analyzed, but no taken.	The on-site flow is analyzed and measures are taken to reduce the number of times on-site handling is performed.	The on-site flow is analyzed periodically and measures are constantly taken for to reduce the number of times on-site handling is performed.
oor area ratio) is are taken.	The packing space rate (floor area ratio) is grasped and measures are taken to improve the rate.	KPIs for the packing space rate (floor area ratio) are set, and measures are constantly taken to improve the rate.
is grasped, but no	The width and height of shelves are reviewed as required according to the products handled.	The width and height of shelves are reviewed periodically according to the products handled.
rasped, but no	The loading efficiency is grasped, and measures are taken to enhance it.	KPIs for the loading efficiency are set, and measures are constantly taken to enhance it.
loss has not been	There is a calculation rule for the amount of opportunity loss.	There is a calculation rule for the amount of opportunity loss, and the amount is grasped regularly.
defined internally	The number of complaints is defined internally and grasped, and measures to reduce complaints are taken.	The number of complaints is defined internally, KPIs for it are set, and measures to achieve the targets are taken.
ing crisis concerning tribution quality.	There is a system for investigating and grasping the voices of users regarding distribution quality.	There is a system for investigating and grasping the voices of users regarding distribution quality, and there are proposed measures.
stock inquiries is	It is possible to respond to stock inquiries without hanging up the phone.	It is possible to view the response lead time for a stock inquiry on the user's terminal and give a response immediately.
at a later date on out item.	Information on the target delivery time of a stockout item is given using guesswork.	Establishment of the infrastructure for providing a response on the delivery time of stockout items has been completed.
internally and sped.	Dirt and damage are defined internally, the number of cases is grasped, and measures are taken to reduce them.	Dirt and damage are defined internally, KPI for them are set, and measures are taken to achieve the targets.
ed internally and	The stockout ratio is defined internally and grasped, and the necessary measures are taken.	The stockout ratio is defined internally, KPIs for it are set, and measures are taken to achieve the targets.
grasped, but the	Inventory discrepancies are grasped and the accuracy is high, but it takes time.	Inventory discrepancies are grasped, the accuracy is high, and it only takes a short time.
ate is grasped, but ad time are not taken.	The designated-date delivery rate is grasped and measures are taken to reducing the lead time.	The designated-date delivery rate is grasped and measures are taken to reduce the lead time to the optimum one for each customer.
defined internally grasped.	The shipping error rate is defined internally, its numerical value is grasped, and measures are taken to reduce it.	The shipping error rate is defined internally, KPIs for it are set, and measures are taken to achieve the targets.
ss about lead	The lead time for ordering, cargo receipt, shipment and arrival at the customers' is managed.	Measures are taken to reduce the lead time.
damage, vehicle accidents, accidents are handled through follow-up	The number of annual accidents resulting in property damage, vehicle accidents, accidents resulting in injury or death, etc. is grasped, and the necessary measures are taken.	Activities are performed with concrete measures to reduce to zero the number of annual accidents resulting in property damage, vehicle accidents, accidents resulting in injury or death, etc.
dards.	There are workplace standards, and inspections are performed periodically.	Clothing and appearance are linked with work efficiency and safety, and this is understood by employees.
porary employees agency or part-time workers.	An education curriculum and the texts for it have been created for temporary employees dispatched from a temporary-employment agency or part-time workers, and education is provided.	Through education provided to temporary employees dispatched from a temporary-employment agency or part-time workers, job satisfaction, motivation and a sense of achievement are fostered.
ndards.	There are work safety standards, and guidance is given regularly.	Regular guidance is given based on the work safety standards, and at the same time, the workplace is reviewed appropriately.
andards for the	Based on the maintenance standards for the devices and tools used, maintenance is performed as required.	Based on the maintenance standards for the devices and tools used, maintenance is performed periodically.
49 points)	Implementation stage (50 to 69 points)	Revitalized stage (70 to 80 points)

Competences Required as a Leader for Improvement of Logistics Operations (Competence Requirements) - Improvement Planning and Driving Force -

This section gives the details of the competences required as a leader for improvement of logistics operations.

Competence Required as a Leader for Improvement	Content of Competence	Definition of Content of Competence
Ability to Grasp the Current Situation	Basic awareness of the company	Understand the business circumstances of the company, such as the corporate targets, the departmental targets and the roles of departments and the sales proceeds and profits.
	Basic awareness of physical distribution	Correctly understand how things and information for the products handled by the company flow in a series of processes from procurement to sales.
	Methods and techniques for recognizing the actual situation	Can correctly recognize the actual situation regarding quality, cost and productivity of the workplace through daily reports, etc., and use the analysis methods as required.
	Ability to extract a problem or an issue	Can correctly extract the problem to be solved on-site based on recognition of the actual situation.
Improvement Planning Ability	Ability to establish an improvement plan	Can frame and establish an improvement plan for a problem that has been extracted.
	Ability to utilize methods techniques	Can utilize the idea generation methods required to create an improvement plan (the KJ method*, brainstorming, etc.).
	Ability to establish an action plan	Can concretely create an executable plan (plan, details of activity, persons in charge, necessary investment, promotion system, difficulty, schedule, etc.) by deciding the priority of improvement ideas.
	Ability to set a target	Can set an easy-to-grasp target that can be understood by all persons in charge in a workplace.
Improvement Implementation Ability	Performance driving force	Can explain an improvement action plan and a target in an easy-to-understand manner, and make them thoroughly known to the persons in charge in a workplace.
	Education and leading ability	Can properly provide the education and guidance required for workplace improvement by evaluating the performance of workplace persons in charge and utilizing manuals, etc.
	Ability to cope with a problem	Can take action to solve a problem promptly and appropriately if an unexpected problem or failure occurs at the stage of performing improvement and an incident that causes a disturbance to improvement arises.
	Communication skills	Can listen to the content of consultations, reports etc., understand it correctly and communicate about it. Furthermore, can issue reports to superiors and/or discuss matters with relevant departments at the right time, thus ensuring improvement proceeds smoothly.
Evaluation and Establishment Ability	Ability to set an evaluation indicator	Can evaluate an activity's status and the level of target achievement and also set operable indicators.
	Progress management skills	Can correctly evaluate the current progress situation based on the set evaluation indicators.
	Ability to achieve a target	As a result of evaluation, can speed up improvement activities (e.g. through enhancement of workplace motivation and reinforcement of the support system) as required and/or review of the plan, thus leading to achievement of the target.
	Ability to attain an established state	Can follow up on the workplace and attain an established state through standardization (review of manuals, provision of continued education), etc., so that the improved matters will not back-slide.

*KJ Method: A method for summarizing data devised by Mr. Jiro Kawakita, a cultural anthropologist and Professor Emeritus at Tokyo Institute of Technology. The aim of the method is to provide hints or inspiration useful for solving a theme while writing data on cards, gathering the cards together group by group and creating diagrams based on them.

Visual Samples (Frequently Occurring Problems in Logistics Operations and Examples of Improvement Activities)

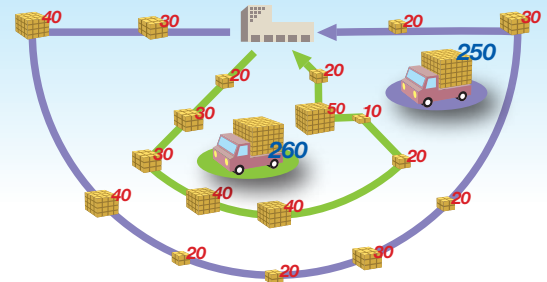
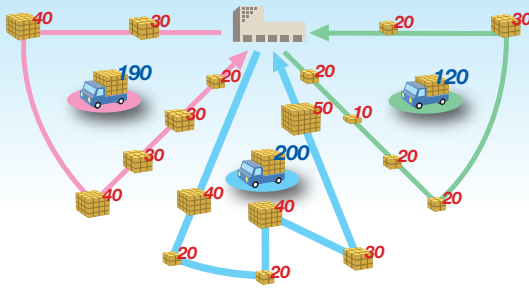
This is a collection of samples in which some of the content of improvement measures described in “Frequently Occurring Problems and Examples of Improvement Activities” (P14 to P17) is represented visually. Utilize them as materials for awareness of improvement activities.

The “Sample Nos.” indicated at the end of each description in the column for Improvement Measures correspond to the Visual Sample Numbers.

Sample① The best distribution route for standardizing loading efficiency and distribution time

Picking up using three 2-t trucks **Current situation**

Picking up using two 4-t trucks = Number of trucks reduced **Improvement idea**

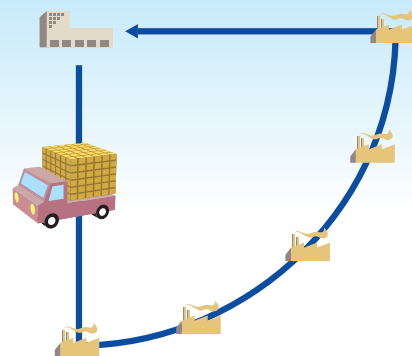
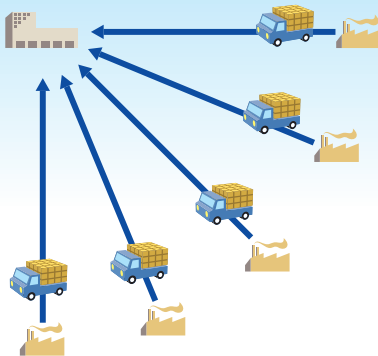


Load size: 10 kg /unit * Based on weight

Sample② Considering review of mixed-loading with the cargo of neighboring centers or other companies, and of the distribution method

① Each supplier delivering parts separately **Current situation**

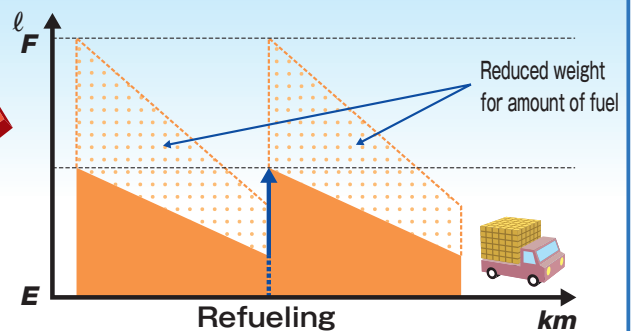
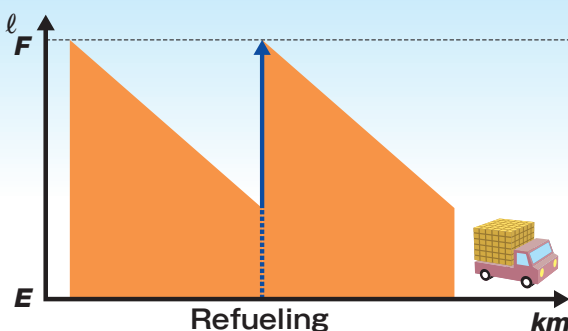
② Change to the Milk Run method: Reducing the number of trucks **Improvement idea**



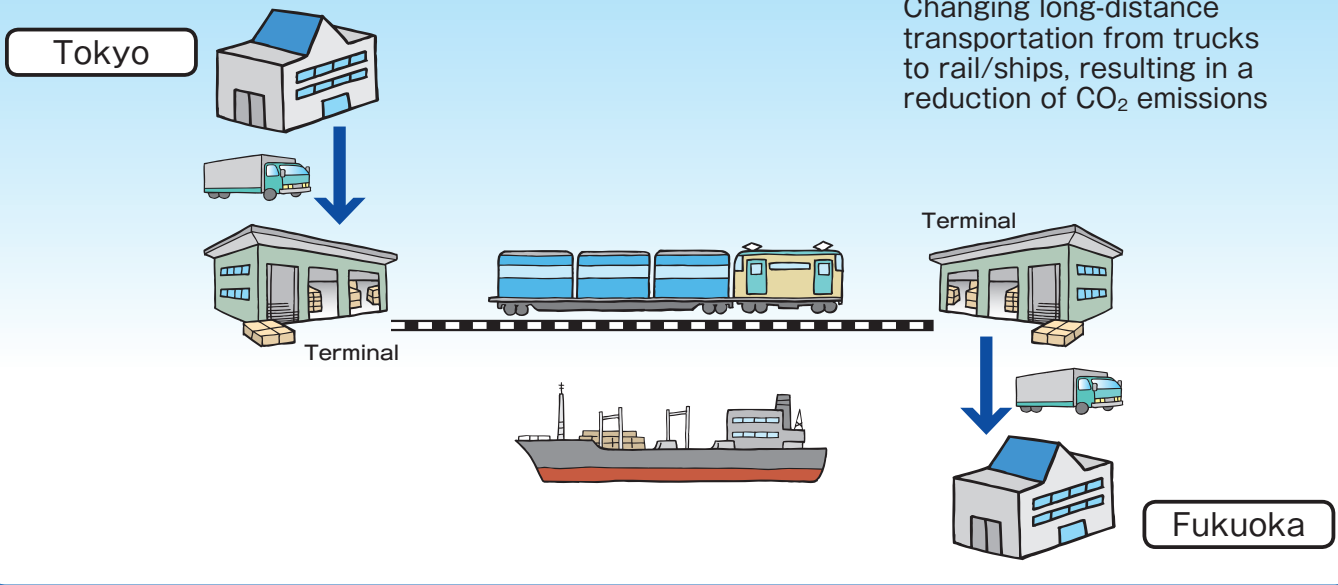
Sample③ Improving fuel costs by changing the oil replenishing method

① Full-tank refueling **Current situation**

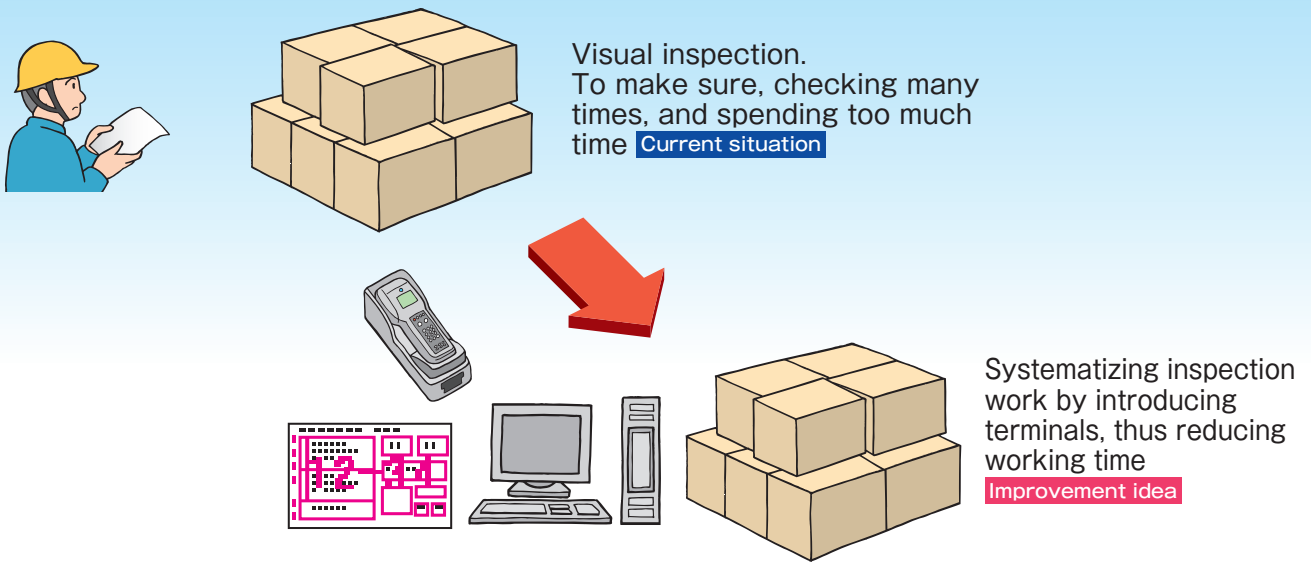
② Refueling as if half is a full tank **Improvement idea**



Sample④ Promoting modal shift



Sample⑤ Use of barcodes and IC tags



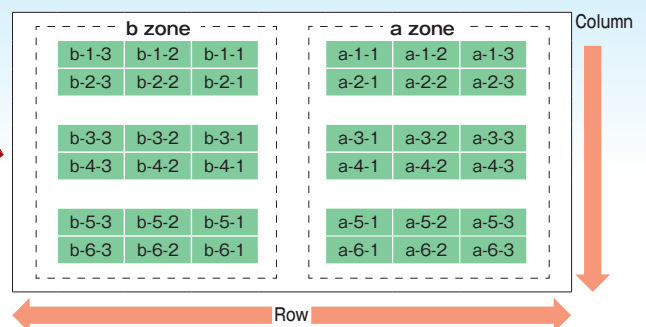
Sample⑥ Unit control through location display review

①Current location display:
Location displayed by number
Current situation

②Improved location display: been
Improvement idea
Zone, column and row categorization
= a zone 2nd row 2nd column: a-2-2

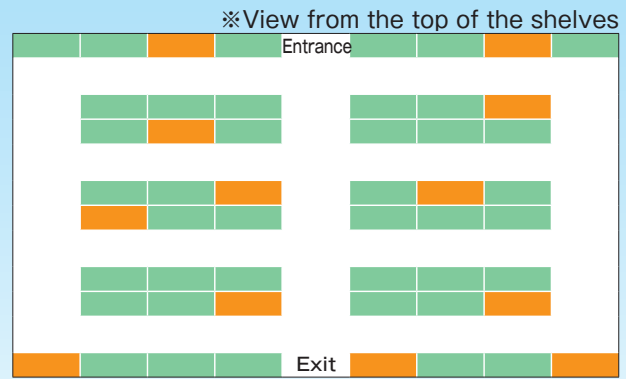
※Layout from the top of the shelf

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32	33	34	35	36

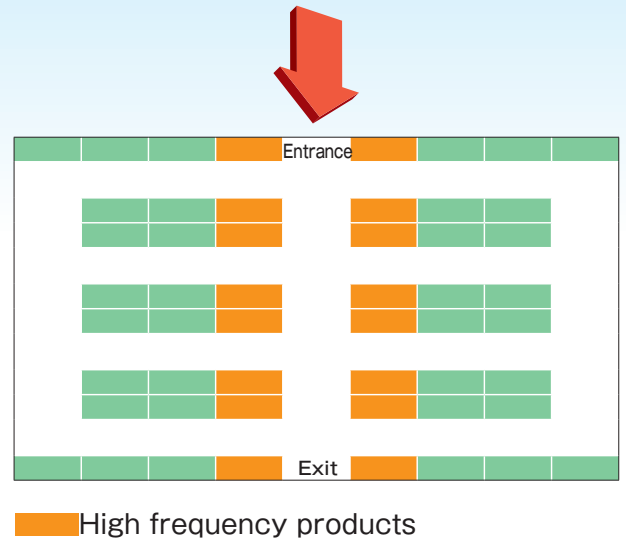


Sample⑦ Storage location taking into account delivery frequency and comprehensibility

① Current position: No consideration given to delivery frequency
Current situation

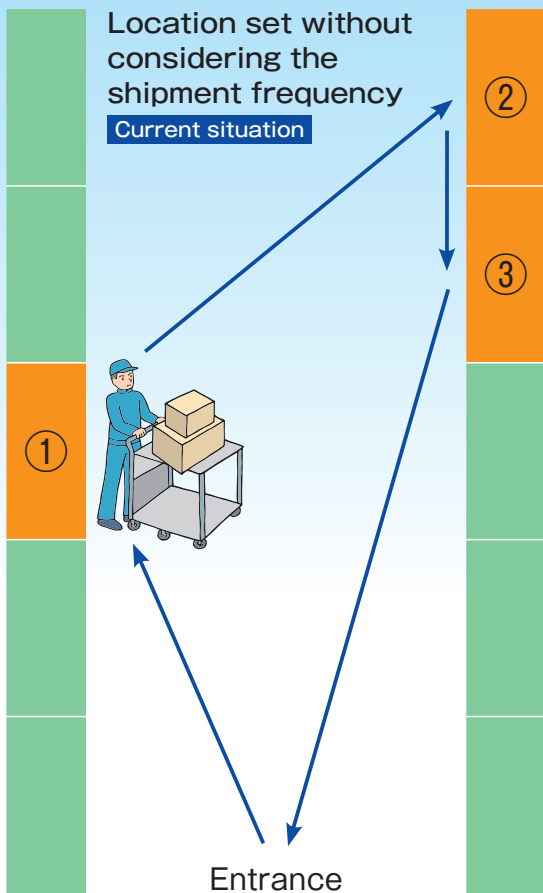


② Improved layout: Locating the high frequency products along the entrance exit aisle
Improvement idea

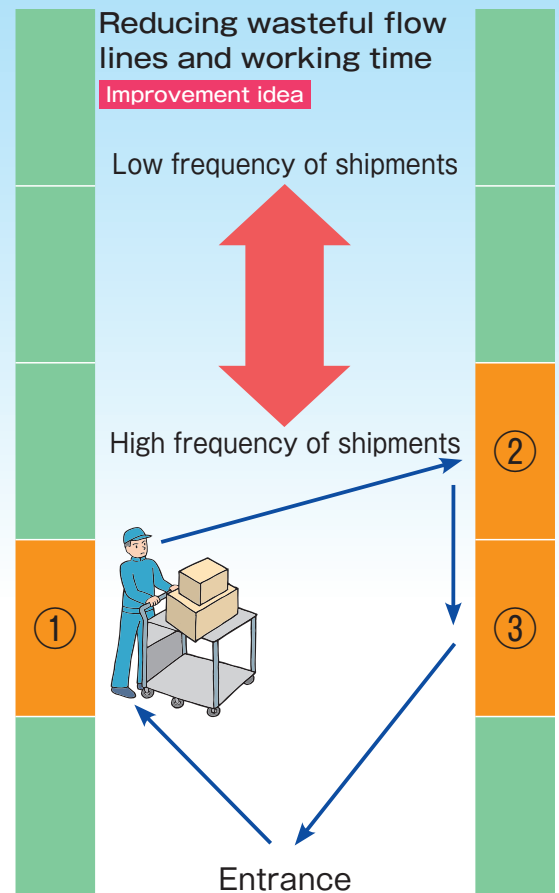


Sample⑧ Setting location according to shipment frequency

Location set without considering the shipment frequency
Current situation



Reducing wasteful flow lines and working time
Improvement idea



Sample⑨ Review of storage layout



Current situation

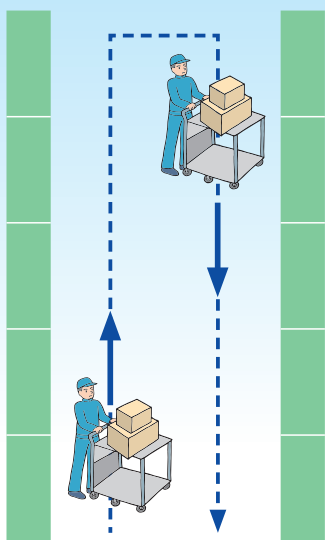
Wasteful flow lines are eliminated by arranging the storage layout to put products of the same type together, and from this, enhancement of efficiency can be expected.

Improvement idea

Sample⑩ Review of storage layout

Current situation

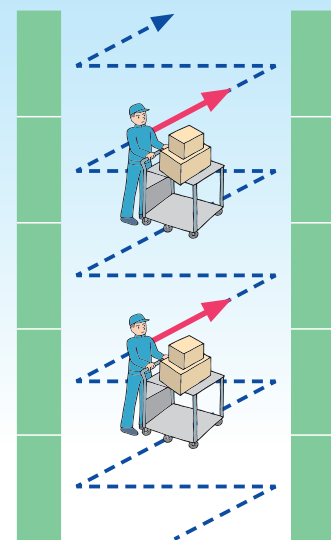
U-Shaped Walking Route



Because of going in both directions, overtaking is not possible.

Improvement idea

Z-Shaped Walking Route

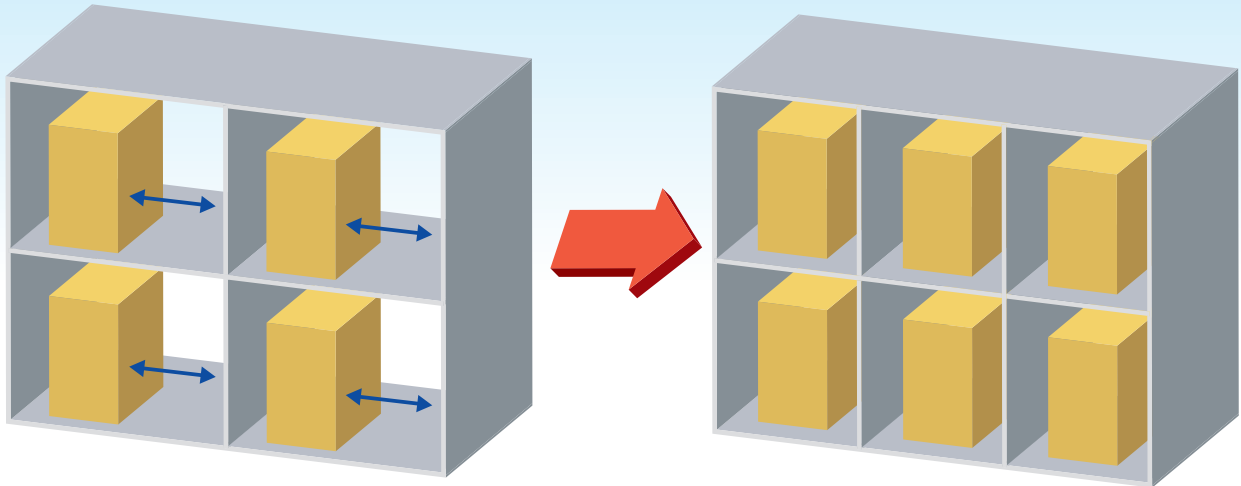


By changing the layout to a Z-shaped walking route, overtaking becomes possible, enhancing productivity.

Sample⑪ Space between the goods

①Current shelves: A lot of empty space due to placing goods without considering their size **Current situation**

②After improvement: The space is now narrow and efficiently controlled. **Improvement idea**

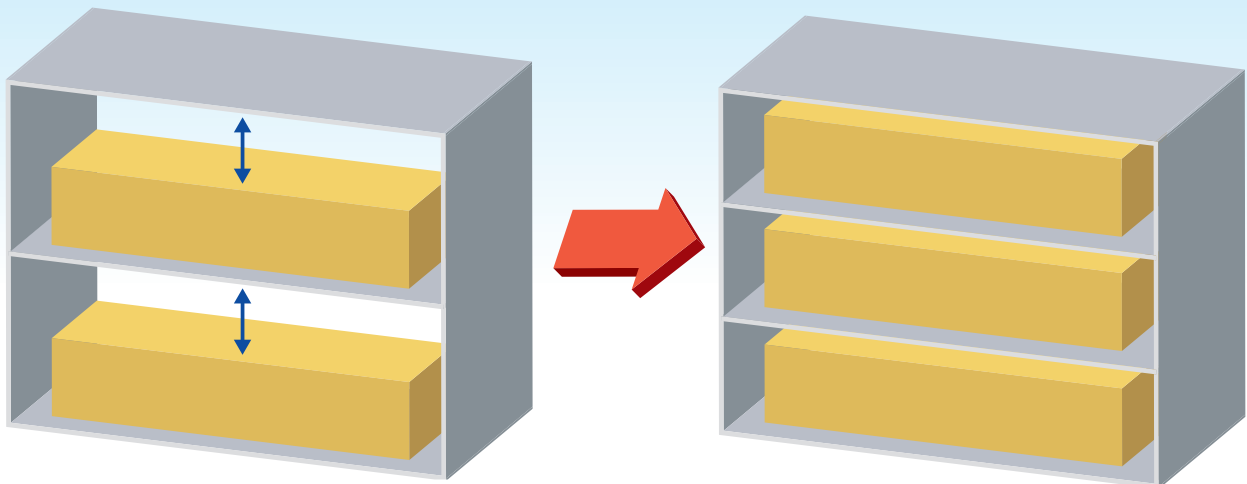


←→ Empty space

Sample⑫ Height of shelves suitable for the goods

①Current shelves: A lot of empty space due to placing goods without considering their size **Current situation**

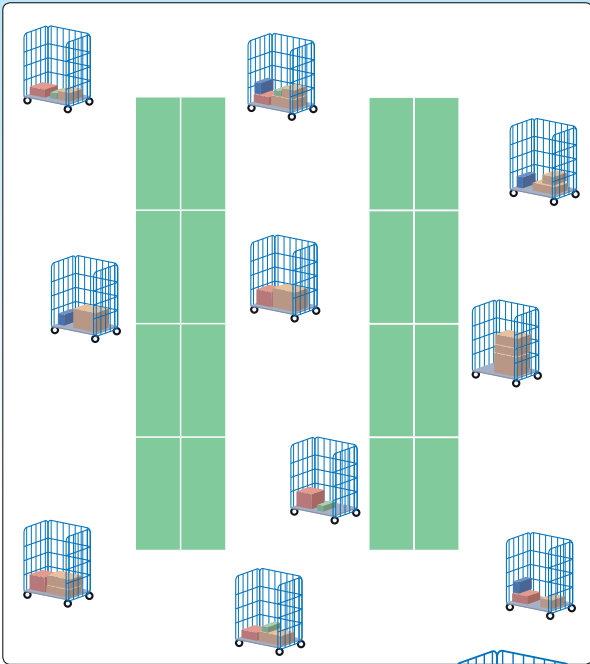
②After improvement: The space is now low and efficiently controlled. **Improvement idea**



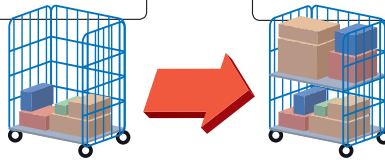
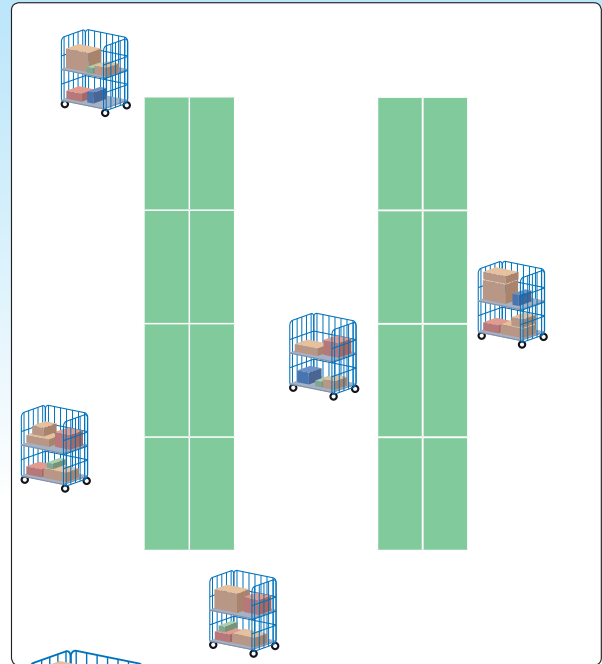
←→ Empty space

Sample⑬ Space between wagons according to the load (Two kinds of goods per wagon)

①Current wagons: One wagon for one kind goods **Current situation**



②After improvement: Two kinds of goods per wagon. The number of wagons has been reduced by half. **Improvement idea**

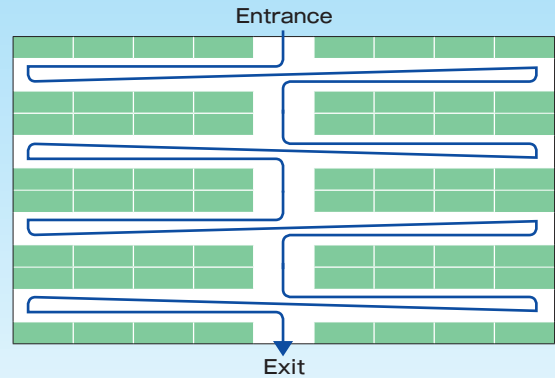


Put a in partition to make it a double-decker.

Sample⑭ Setting aisle and storage layouts that take into account walking distance and pick-up time

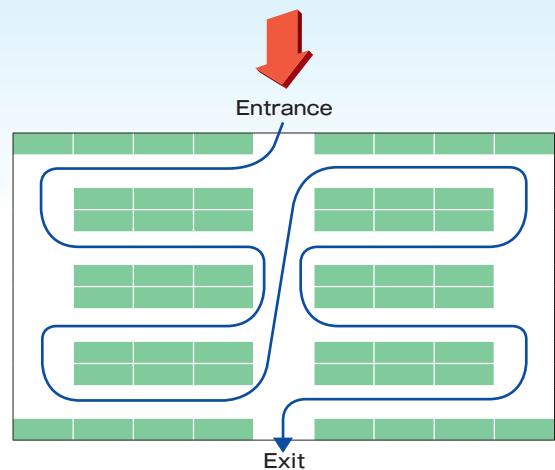
①Current layout for picking: Narrow space due to the dead-end aisle makes the picking job difficult.

Current situation



②Improved shelf layout for picking: Space at the end of the aisle enables picking job to be carried out freely and smoothly

Improvement idea

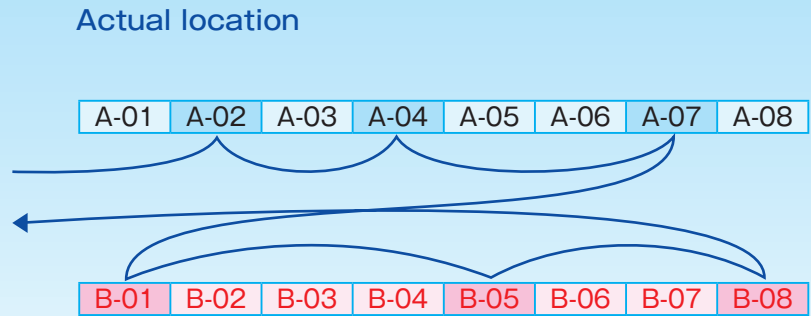


※Layout from the top of the shelves

Sample⑮ The shortest picking distance, by reviewing the picking list

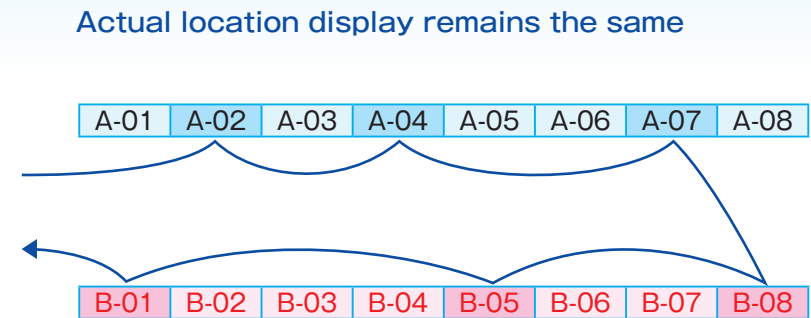
① Current picking display: Display in ascending order **Current situation**

location	Number
A-02	1
A-04	3
A-07	2
B-01	3
B-05	1
B-08	2

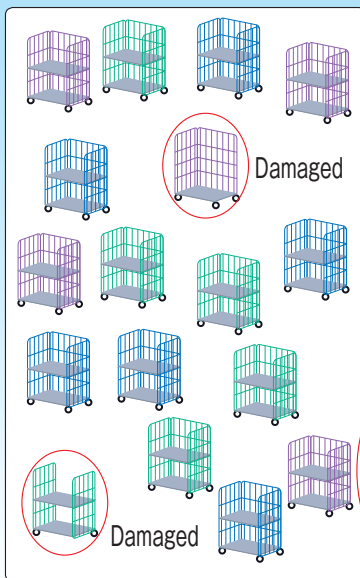


② After reviewing the picking: The picking list for the B shelves is printed in descending order using a computer program, to enable the shortest picking flow **Improvement idea**

location	Number
A-02	1
A-04	3
A-07	2
B-08	2
B-05	1
B-01	3



Sample⑯ 5S (Seiri / Seiton / Seisou / Seiketsu / Shitsuke)



Seiri
(Shifting)

Scrap
the damaged
one

Seiketsu
(Standardizing/
Maintaining)



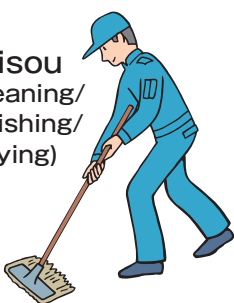
Seiton
(Sorting)



Shitsuke
(Discipline/
Sustaining)



Seisou
(Cleaning/
Polishing/
Tidying)



Sample 17 Being thorough about wearing working uniforms /protective clothing

Not wearing a helmet



Personal appearance:
Casual wear might
cause an accident

Wearing a helmet



Personal appearance:
Work uniform;
always check
cuffs, collars, etc.

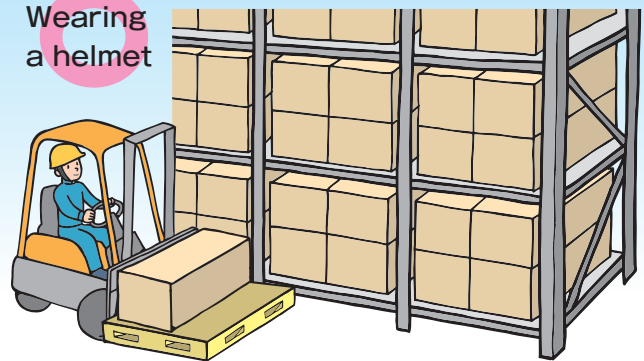
Sample 19 Keeping out of machines' operating areas

Unstable
high
stack



Keeping away from
machines' operating areas

Wearing
a helmet



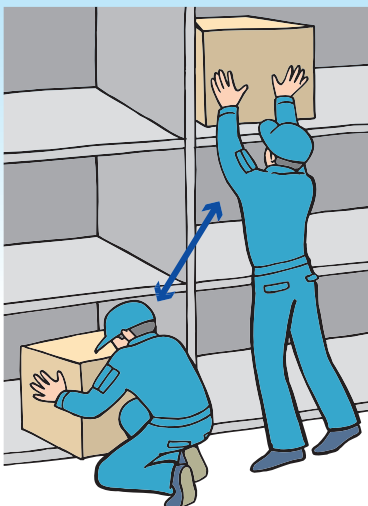
Load arrangement

Checking safety around
the operating area

Sample 19 Thorough knowledge of how to handle machines/ equipment In addition: Enhancing work safety

Not using a
safety belt
or protector

Wearing a safety belt
or protector whenever
working in a high place



Repeatedly picking from a
high (or low) position will
burden your lower back

Place high frequency loads
on middle shelves.
When working, always keep
the burden on your lower
back small

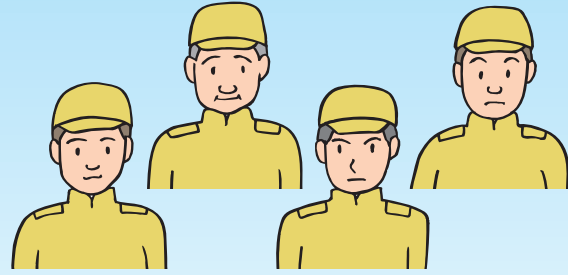
Unstable equipment

Fix the vehicle in place
for high work to prevent
it from tipping over

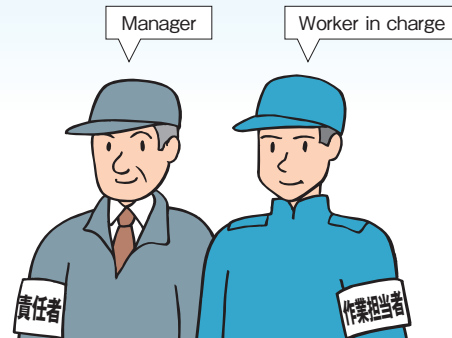


Sample⑳ Education

A newly employed worker



No idea who to ask **Current situation**



Make the workplace managers clearly identifiable using armbands **Improvement idea**

Sample㉑ Creating manuals for the logistics work procedures

Many wasteful movements, with no uniform working method

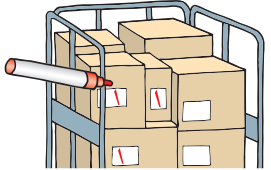
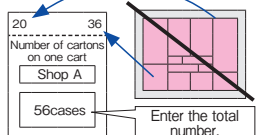
Current situation



Establishing standardized operations by creating work manuals and guidance

Improvement idea



Work Manual		Created	March 11, 20XX	Revised	June 8, 20XX	Supervisor	Creator
Work Name						Tanaka	Yamada
NO	Work Procedure	Key Point		Supplement			
①	Count the number of products on the cart.	Perform counting while putting a check mark on the stickers with a marker. (To prevent double counting) (Refer to Fig. 1.)		(Fig.1) 			
		Divide by drawing a diagonal line, count the number of cartons and enter the total on the number of cartons table. (Refer to Fig. 2.)		(Fig.2) 			
				Enter the total number.			



<Reproduction without permission is prohibited>

October, 2018

Japan Institute of Logistics Systems

e-mail: education@logistics.or.jp

URL: <http://www.logistics.or.jp/>