# A Quick Introduction to Logistics and Inventory Control

This section includes skill standards for the manufacturing concentration of Logistics and Inventory Control. These skill standards were developed by the Manufacturing Skill Standards Council (MSSC), under the auspices of the National Skill Standards Board (NSSB).

For a detailed explanation of each aspect of the standards, see *A Quick Orientation*, one of the guidebooks included with your binder.

## Skill Standards: A Brief Explanation

The MSSC developed skill standards for six concentrations – major areas of frontline manufacturing work covering families of related jobs. The standards in this document cover the Logistics and Inventory Control concentration. The Logistics and Inventory Control concentration is defined as follows:

| LOGISTICS AND INVENTORY CONTROL | |
|---|---|
| **DEFINITION** | **SAMPLE JOBS COVERED** |
| Plan and control the movement and storage of materials and products in the manufacturing system. | Material handler, material mover, and material associate |

The skill standards are made up of two major components. They are:

**Information *About the Work.*** This component describes what workers need to be able to do on the job to perform competently. It includes:

- *Critical Work Functions* – The major responsibilities of work within a concentration.
- *Key Activities* – The major duties or tasks involved in carrying out a critical work function.
- *Performance Indicators* – Indicators of how to determine when someone is performing each key activity competently.

**Information *About the Worker.*** This aspect of the skill standards describes the knowledge and skills an individual needs to perform the work described by each critical work function, along with its key activities and performance indicators. There are three types of knowledge and skills:

- *Academic Knowledge and Skills* – Academic skills such as mathematics, reading, etc.
- *Employability Knowledge and Skills* – Broadly applicable skills such as working in teams, analyzing and solving problems, etc.
- *Occupational and Technical Knowledge and Skills* – Occupational and technical skills that tend to be specific to an industry or concentration, such as skill in using inspection tools and equipment, knowledge of manufacturing processes, etc.

For the academic and employability knowledge and skills, the MSSC skill standards provide:

**Complexity Ratings:** These ratings tells us, for a given critical work function, the level of complexity required in a particular academic or employability knowledge and skill. For example, if writing is required in order to perform a given critical work function, the complexity rating would tell us whether someone needs to write telephone messages versus technical manuals. These ratings were developed using the NSSB Academic and Employability Skill Scales. For more information on the scales and complexity ratings, see *A Quick Orientation* and the *Skill Scales Companion Guide*. There are two types of complexity ratings in the skill standards:

***Overall Complexity Rating:*** As the name implies, the overall complexity rating gives us a rough estimate of the overall level of complexity required for a given knowledge and skill. These ratings are provided for frontline workers (represented by the symbol "W") and first-line supervisors (represented by the symbol "S"). The scale is: **L = Low; M = Moderate; and H = High**

In some cases, the overall complexity rating was **NA (Non-Applicable)**. This means that this skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.

***Subdimension Complexity Rating:*** To give users more detailed information, the MSSC skill standards also provide an individual rating for each subdimension in the NSSB Academic and Employability Skill Scale (See the *Skill Scales Companion Guide*). These ratings apply to frontline workers only. Ratings have not been developed for first-line supervisors at this time. The scale is: **L = Low; M = Moderate; and H = High**

In some cases, the subdimension complexity rating was **NA (Non-Applicable)**. This means that this *particular dimension* of the skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.

## Occupational and Technical Knowledge and Skills

Occupational and technical knowledge and skills are unique to a given industry sector or concentration. In manufacturing, they include knowledge and skills in areas such as inspection tools and equipment, production tools and equipment, and manufacturing processes.

The MSSC standards describe the occupational and technical knowledge and skills needed to perform each critical work function. The occupational and technical knowledge and skills are grouped into categories, with specific examples under each category. Please note that the MSSC did not develop complexity ratings for the occupational and technical knowledge and skills. This may be a part of future research.

## Tips for Getting Started

Here are step-by-step instructions to help you get started:

1. Find a critical work function that interests you. Read each of its key activities, along with its associated performance indicators. You will find this information in the "About the Work" section on the left-hand page.
2. Open the fold-out pages and examine the "About the Worker" sections that focus on the academic and employability knowledge and skills.
3. Start by looking at the first academic knowledge and skill, which is always math, and find out the overall complexity rating by looking across the table to the right. To understand what this rating means, see the *Skill Scales Companion Guide*.
4. To find out the subdimension ratings for math, look further across the standards, using the *Skill Scales Companion Guide* to understand what each rating means. Repeat process for rest of academic and employability knowledge and skills.
5. Now, look at the occupational and technical knowledge and skills needed for this critical work function. These are located on the back page of the two-page fold-out section.

## Critical Work Function: Manage inventory to meet production requirements.

**Critical work functions** *describe the major responsibilities involved in carrying out a concentration*

**Concentrations** *are the major areas of front-line work covering families of related jobs. Separate standards were identified for each concentration.*

| Key Activities<br>**Key activities** *are the duties and tasks involved in carrying out a critical work function* | Performance Indicators<br>**Performance indicators** *correlate to the key activities. The performance indicators provide information on how to determine when someone is performing each key activity competently* |
|---|---|
| Monitor location of materials during production process | Plan ensures that materials are accessible to manufacturing workstations.<br>Monitoring ensures that cycle counts for raw and finished goods meet established standards.<br>Plan allows for efficient rotation of raw materials and stock to minimize old and outdated inventory.<br>Plan ensures efficient and cost-effective movement of materials across the floor.<br>Monitoring activities do not disrupt production flow.<br>Plan is accurately completed.<br>Plan is distributed to correct parties in a timely way. |
| Station materials for production flow | The correct materials and quantities are stationed for production.<br>Orders from production floor are filled in a timely way.<br>Raw materials are accessible to manufacturing workstations.<br>Raw material stock is efficiently rotated, minimizing old and outdated inventory.<br>Material damage due to improper stationing or transport is minimal.<br>Defective material is identified.<br>Appropriate action is taken on defective material. |
| Document materials movement and inventory count | Production orders are accurate.<br>Material movement and inventory count reports are accurately generated in correct format.<br>Reports are distributed properly.<br>Reports are produced in a timely fashion.<br>Inventory, when taken, is accurate. |
| Establish lot sizes and reorder points | Production efficiencies are maintained.<br>Obsolete finished products are minimal.<br>Re-order points minimize back-orders.<br>Proper storage levels are maintained.<br>Order lead-time requirements are reasonable.<br>Inventory levels are maintained to minimize inventory value.<br>Inventory of raw material and finished goods are maintained to meet customer demands. |
| Conduct on-site inventory | Inventory is taken within required timeframe with minimum interference to production.<br>Inventory corrections are accurate and minimal.<br>Inventory activities are carried out safely.<br>Inventory movement is minimal during inventory count.<br>Inventory is conducted with the proper level of cooperation.<br>Inventory results are recorded in correct unit of measure.<br>Asset protection and business control procedures are followed. |
| Report discrepancies in inventory audit | Inventory audit is presented in a proper format.<br>Audit reports are distributed in a timely way to the proper parties.<br>All discrepancies are communicated to proper parties. |
| Find causes of discrepancies in inventory audit | Investigations into inventory inaccuracies are complete, timely including indication of root cause.<br>Interactions between material handlers and inventory control are collaborative and supportive.<br>Company policy is followed in the event of inventory shortage.<br>Inaccuracies are reported to proper parties. |
| Change logistics processes and update inventory to respond to engineering changes | Change notices follow company procedures.<br>Change notices and their implementation are properly documented.<br>Change notices are clearly communicated to proper parties.<br>Follow up on paperwork is done properly.<br>Documentation approving the logistics change is in hand prior to implementation.<br>Storage and retrieval systems are reviewed for upgrades and replacement. |

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### ACADEMIC AND EMPLOYABILITY SKILLS

| Skill | Overall Complexity Rating for Workers | Overall Complexity Rating for Supervisors | Complexity Dimension | Complexity Subdimension | Complexity Subdimension Rating for Workers |
|---|---|---|---|---|---|
| **Math** | **L** | **M** | Complexity of mathematics content | Number sense and computation | **L** |
| | | | | Geometry, measurement, and spatial sense | **L** |
| | | | | Complexity of data analysis, statistics, and probability | **L** |
| | | | | Functions and algebraic thinking | **NA** |
| | | | | Complexity of representation and communication | **L** |
| | | | Complexity of problem solving | Mathematical methods | **M** |
| | | | | Mathematical reasoning | **L** |
| | | | | Mathematical tools | **L** |
| **Science** | **NA** | **L** | Complexity of scientific inquiry | Design | **NA** |
| | | | | Use of evidence | **NA** |
| | | | Complexity of understanding the nature of science | Unifying concepts and processes | **NA** |
| | | | Complexity of core scientific content | Physical science | **NA** |
| | | | | Life science | **NA** |
| | | | | Earth and space science | **NA** |
| | | | Complexity of applied science | Science and technology | **NA** |
| | | | | Science in personal and social perspective | **NA** |
| **Reading** | **L** | **M** | Complexity of text | | **M** |
| | | | Complexity of reading skills | | **L** |
| | | | Complexity of reading purpose | | **L** |
| **Writing** | **L** | **M** | Complexity of text | Complexity of text | **L** |
| | | | Complexity of writing product | Type of product | **M** |
| | | | | Organization | **M** |
| | | | | Elaboration | **L** |
| | | | Complexity of writing process | Writing development | **L** |
| | | | | To inform | **M** |
| | | | | To persuade | **L** |
| **Listening** | **L** | **M** | Complexity of communication | Content complexity | **M** |
| | | | | Demands on attention | **M** |
| | | | | Communication indirectness | **L** |
| | | | Barriers to communication | Limitations on interaction | **L** |
| | | | | Distractions | **M** |
| **Speaking** | **L** | **L** | Complexity of communication | Content complexity | **L** |
| | | | | Tact and sensitivity required | **L** |
| | | | | Communication indirectness | **L** |
| | | | Context demands | Diversity of audience | **M** |
| | | | | Constraints on preparation | **M** |
| | | | | Distractions | **M** |
| | | | | Listener resistance | **L** |
| **Using Information and Com-munications Technology** | **M** | **M** | Complexity of technology application | Complexity of equipment or technology | **M** |
| | | | | Complexity of applications | **M** |
| | | | | Training time constraints | **M** |
| | | | Frequency of technology change | New learning required | **M** |
| **Gathering and Analyzing Information** | **M** | **M** | Difficulty of information gathering | Amount of information | **M** |
| | | | | Number and variety of sources | **M** |
| | | | | Resourcefulness needed | **M** |
| | | | Complexity of analysis | Complexity of information and analysis | **M** |
| | | | | Need to evaluate source information | **M** |
| | | | | Lack of analysis guidelines | **L** |

## ACADEMIC AND EMPLOYABILITY SKILLS

| Skill | Overall Complexity Rating for Workers | Overall Complexity Rating for Supervisors | Complexity Dimension | Complexity Subdimension | Complexity Subdimension Rating for Workers |
|---|---|---|---|---|---|
| **Analyzing and Solving Problems** | **M** | **M** | Problem complexity | Problem uniqueness or difficulty | **M** |
| | | | | Number and range of problems | **M** |
| | | | Solution complexity | Number and complexity of possible solutions | **M** |
| **Making Decisions and Judgments** | **M** | **M** | Degree of judgment or inference required | Lack of guidance or precedents | **L** |
| | | | | Integration difficulty | **M** |
| | | | | Quantity or ambiguity of risks and consequences | **M** |
| | | | Individual decision-making responsibility | Accountability and autonomy | **M** |
| | | | | Absence or ambiguity of rules or policy constraints | **L** |
| **Organizing and Planning** | **M** | **H** | Complexity of plans | Goal complexity or ambiguity | **M** |
| | | | | Flexibility required | **M** |
| | | | | Resource coordination required | **M** |
| | | | | Scope and effects of planning | **M** |
| | | | Constraints on planning | Lack of guidelines | **L** |
| | | | | Lack of feedback | **L** |
| | | | | Constraints on resource availability | **M** |
| **Using Social Skills** | **L** | **L** | Complexity of social interactions | Diversity | **M** |
| | | | | Structure or protocol required | **L** |
| | | | | Tact and sensitivity required | **L** |
| **Adaptability** | **M** | **M** | Degree of adaptability required | Frequency of change | **M** |
| | | | Difficulty of adapting | Unpredictability of change | **M** |
| | | | | Lack of support for change | **M** |
| **Working in Teams** | **L** | **M** | Degree of collaboration required | Task interdependence | **M** |
| | | | Team member heterogeneity | Team diversity | **M** |
| | | | Goal or role ambiguity | Lack of clarity or support for team goals | **L** |
| | | | | Lack of clarity or stability of responsibilities | **L** |
| **Leading Others** | **L** | **L** | Work challenges | Challenges to goal attainment | **L** |
| | | | | Work structuring requirements | **M** |
| | | | | Scope and complexity of leadership responsibility | **NA** |
| | | | People challenges | Coaching or monitoring needs | **L** |
| | | | | Conflict management needs | **L** |
| **Building Consensus** | **L** | **L** | Consensus process inhibitors | Number and diversity of stakeholders | **M** |
| | | | | Ambiguity of goals | **L** |
| | | | | Lack of organizational support, incentives, or consensus leadership | **L** |
| | | | | High consensus standard | **M** |
| | | | Difficulty of issues requiring consensus | Complexity of issues | **M** |
| | | | | Contentiousness of issues | **L** |
| | | | | Lack of opportunities for agreement | **L** |
| **Self and Career Develop-ment** | **L** | **L** | Need for learning and development | Self and career development requirements | **L** |
| | | | Limitations on learning and development opportunities | Time, resource, or support constraints | **M** |
| | | | | Application constraints | **L** |

**Overall complexity ratings:** The *overall* level of complexity required in a skill in order to perform the critical work function. *Scale*: H=high complexity; M=moderate complexity; and L=low complexity. Two separate ratings are provided: one for *workers* (entry-level up to first-line supervisors) and the other for *supervisors* (first-line supervisors). In some cases, the overall complexity rating was **NA (Non-Applicable)**. This means that this skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.
**Complexity Subdimension ratings:** These are complexity level ratings for individual aspects of the particular skill. *Scale*: H=high complexity; M=moderate complexity; and L=low complexity. At this time, these ratings are provided for workers only. In some cases, the subdimension complexity rating was **NA (Non-Applicable)**. This means that this *particular dimension* of the skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### OCCUPATIONAL AND TECHNICAL KNOWLEDGE AND SKILLS

*These are the technical knowledge and skills needed to perform the critical work function.*

| Skill Category | Specific Knowledge and Skills | Specific Knowledge and Skills |
|---|---|---|
| **Tools and Equipment** | A. Skill in operating equipment used to move and store materials as required by the certification.<br>B. Skill in using scanners to take inventory. | C. Knowledge of how to use a counting scale (i.e., weighting device) to count small items for taking inventory. |
| **Taking Inventory** | A. Knowledge of the security procedures for inventory control to reduce loss.<br>B. Knowledge of special handling requirements and procedures for high value parts.<br>C. Knowledge of the inventory in stock.<br>D. Knowledge of how to verify parts to ensure that the part on the paper work is the same part that was received.<br>E. Skill in reconciling inventory counts.<br>F. Knowledge of the safety procedures used in moving inventory. | G. Knowledge of the different methods of inventory to ensure appropriate method is used.<br>H. Knowledge of the parts that will be the subject of the inventory audits.<br>I. Knowledge of how to conduct an on-site inventory.<br>J. Knowledge of the minimum inventory levels.<br>K. Knowledge of how often inventories should be conducted at each workstation. |
| **Inventory and Material Handling Procedures** | A. Knowledge of production floor plan and safety requirements to place materials in most efficient and safe location and position.<br>B. Knowledge of warehouse layout and product codes to locate and deliver materials to product area.<br>C. Knowledge of procedures for material storage and movement to improve inventory data accuracy.<br>D. Knowledge of storage space available to establish lot sizes and reorder points.<br>E. Knowledge of proper forecasts and methods for conducting inventory audits to recognize and report inventory discrepancies.<br>F. Knowledge of storage procedures to stock material and minimize material damage.<br>G. Knowledge of workflow to optimize location of materials and warehouse utilization.<br>H. Skill in identifying significant inventory discrepancies. | I. Knowledge of the proper stock rotation procedures to minimize inventory loss, defective materials, and outdated materials for company-specific processes.<br>J. Knowledge of material handling capabilities and options to ensure a cost-effective plan for moving material across the production floor.<br>K. Knowledge of product line to determine obsolete finished products.<br>L. Knowledge of allotted timeframe for conducting inventory, including the maximum production interference allowed.<br>M. Knowledge of how to safely identify, handle, and count/measure hazardous materials.<br>N. Skill in performing cycle counts.<br>O. Skill in conducting inventories of daily packing materials and calculating estimated amount required for 24 hours.<br>P. Knowledge of company policies for ordering and reordering material.<br>Q. Skill in adjusting warehouse layout based on space utilization history. |
| **Customer and Industry Awareness** | A. Knowledge of customers' products.<br>B. Knowledge of company vision statement to ensure business objectives are met.<br>C. Knowledge of customer and production forecasts and production schedules to plan for internal and external warehouse needs. | D. Knowledge of vendor and internal lead times in order to know when and how much to reorder.<br>E. Knowledge of standard industry practices regarding inventory control methods and procedures. |
| **Manufacturing Process** | A. Knowledge of procedures for handling scrap.<br>B. Knowledge of plant layout.<br>C. Knowledge of basic manufacturing processes to recognize how changes will affect inventory system.<br>D. Knowledge of production/staging floor layout to properly station material for production flow.<br>E. Knowledge of how raw materials are moved.<br>F. Knowledge of production capacity to meet customer demands (e.g., production rates per hour and the material needed to support the process).<br>G. Knowledge of production schedule in order to plan inventory.<br>H. Skill in using cycle count process to ensure accurate counts are taken.<br>I. Knowledge of material process steps to make finished product. | J. Knowledge of how to balance lead time and cycle time issues with inventory management (i.e., how to make trade- off decisions between inventory level and lead time or between additional equipment [capacity and cost] and lower inventory and cycle time.)<br>K. Skill in establishing delivery schedule for supplies at the production line, factoring in such issues as lead time.<br>L. Skill in interpreting bills of material and "traveler" work orders in order to know where and when material is needed.<br>M. Skill in interpreting a "batch" card to ensure correct materials get to production.<br>N. Knowledge of production parts. |
| **Statistical Tools and Systems** | A. Knowledge of how to control and account for inventory tags to assure physical inventory is accurate.<br>B. Knowledge of how to establish inventory levels and reorder points to avoid production shut down.<br>C. Knowledge of which corrective actions should be taken based on the root cause.<br>D. Knowledge of how to read an audit report to see how the budget was affected.<br>E. Knowledge of how to read an Engineering Change Notice (ECN) to select correct items from inventory.<br>F. Knowledge of how to convert a unit of measure to count items for inventory.<br>G. Knowledge of all possible material movements within the plant to identify root causes for inventory discrepancies. | H. Knowledge of product line size and durability to produce lot size amount and reorder points for customer.<br>I. Knowledge of material time frame intervals to ensure that materials are available in the production area when needed and to avoid clutter on production floor.<br>J. Knowledge of how to calculate reorder points in order to minimize situations where stock runs out.<br>K. Knowledge of economic order quantity (EOQ) concepts to manage lot sizes and reorder points.<br>L. Knowledge of raw material lead times and internal production lead times to establish lot sizes and reorder points.<br>M. Knowledge of time and motion studies and process layout as it relates to locating material adjacent to production operations.<br>N. Knowledge of Kanban queuing process at each production line. |

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### OCCUPATIONAL AND TECHNICAL KNOWLEDGE AND SKILLS *(continued)*

*These are the technical knowledge and skills needed to perform the critical work function.*

| Skill Category | Specific Knowledge and Skills | Specific Knowledge and Skills |
|---|---|---|
| **Business Policies and Procedures** | A. Skill in establishing a material usage schedule and using it to track materials and make forecasts.<br>B. Knowledge of inventory reporting procedures, including procedures regarding defective material.<br>C. Knowledge of company policies for disposal of defective materials.<br>D. Knowledge of plant or company communications process to effectively communicate inventory discrepancies, materials, and plan.<br>E. Knowledge of internal control requirements as they apply to assets/inventory levels and reporting.<br>F. Knowledge of company policies to ensure all the appropriate parties are notified and corrections are made.<br>G. Skill in interpreting forms for transfer of material from one department to another to monitor location of material.<br>H. Knowledge of pattern recognition as it applies to defect recognition.<br>I. Knowledge of bill of lading procedures to ensure that when changes in customer orders are made that the proper levels of materials are shipped and the warehouse is notified.<br>J. Skill in purging the inventory and inventory system of the parts made obsolete by an engineering change.<br>K. Knowledge of audit process. | L. Knowledge of proper change notice/ clean-out procedures to respond to engineering changes.<br>M. Knowledge of company procedures regarding making inventory and logistics process changes in response to engineering changes.<br>N. Skill in balancing cost and quality to optimize inventory retrieval system.<br>O. Skill in constructing checks and balances to validate order accuracy (e.g., add up and across on order spreadsheet).<br>P. Knowledge of parts accounting system to maintain inventory appropriately (e.g. First In First Out (FIFO) vs. Last In First Out (LIFO)).<br>Q. Skill in developing new process flows to support engineering changes in production.<br>R. Knowledge of product stacking requirements to ensure safe inventories can be made.<br>S. Skill in establishing a cycle count schedule based on importance of materials and cycle time needs.<br>T. Knowledge of company's definition of discrepancy to prepare inventory audit report.<br>U. Skill in using non-conforming product system to prevent rejected material (i.e., rejected finished goods) from going to customer.<br>V. Skill in coordinating inventory count with production and maintenance activities to minimize disruptions to manufacturing. |
| **Technology to Support Inventory** | A. Knowledge of how to document damaged material.<br>B. Knowledge of the forms used to order material.<br>C. Knowledge of Material Resource Plan to maintain proper inventory levels, report excess inventory, and track overdue orders and back orders.<br>D. Skill in using computer inventory system to generate data and management reports that help determine item usage, inventory levels, and reorder points. | E Knowledge of how to use the bill of material system to locate material.<br>F. Knowledge of how to establish a reorder point so that inventory is kept at minimum levels.<br>G. Knowledge of different types of planning techniques, such as Kanban, so reorders are placed on time.<br>H. Knowledge of inventory management system to effectively manage and monitor inventory work and ensure reliability of information. |
| **Quality Process** | A. Knowledge of company approved method when handling and/or processing raw materials, Work In Process (WIP) and finished goods.<br>B. Knowledge of who is responsible for rotating inventory to ensure high quality.<br>C. Knowledge of the engineering changes affecting inventory so that alternative materials can be identified. | D. Knowledge of the business rules on updating engineering changes and how to apply them in Enterprise Requirements Planning (ERP) or Material Requirements Planning (MRP).<br>E. Knowledge of good manufacturing practices as they relate to inventory control.<br>F. Knowledge of how to quarantine sub-standards parts/materials to ensure that they are not part of production. |
| **Documentation** | A. Knowledge of how to properly complete inventory forms.<br>B. Skill in making sure inventory reports are easy to understand.<br>C. Knowledge of appropriate inventory format to document material movement and inventory count.<br>D. Knowledge of proper forms for scrap, salvage, and recycled materials. | E. Knowledge of how to complete a Material Movement Report.<br>F. Knowledge of ISO documented processes for all functions.<br>G. Skill in verifying that an item is labeled with correct part number to find cause of inventory error. |

# Logistics Inventory Control
## Academic and Employability Examples

| Critical Work Function: Manage inventory to meet production requirements | | |
|---|---|---|
| **Knowledge/skill** | **Mean Importance** | **Examples** |
| **Using Information and Communication Technology** | 4.15 | Use PC to order and review inventory |
| | | Use computer system to look up inventory to know location and verify counts |
| | | Use software to track work in process in order to schedule production lead times |
| | | Use fax to place orders with vendors |
| | | Use spreadsheets to post reconciliation results |
| **Gathering and Analyzing Information** | 4.31 | Gather data on production plans to ensure sufficient quantity of materials on site for production |
| | | Analyze data from cycle counts to ensure inventory in computer matches physical inventories in warehouse |
| | | Gather information from production meetings to determine the production schedule need for materials |
| | | Gather information from production schedule to determine storage needs |
| | | Analyze defect rate for incoming materials to assist in developing supply improvements |
| **Analyzing and Solving Problems** | 4.21 | Solve location discrepancies of goods to ensure continuous work flow |
| | | Correct variances during receiving or cycle counts to achieve high levels of inventory accuracy |
| | | Anticipate obsolescence of inventory parts by communicating with engineers on potential new parts |
| | | Identify and readjust reorder points if inventory is not being received on time for production |
| **Making Decisions and Judgments** | 4.17 | Determine lead time for specified materials and adjust order quantity accordingly |
| | | Determine minimum quantity of raw materials needed to run manufacturing process over a weekend |
| | | Determine when to deliver materials if specified delivery point is not available |
| | | Decide if new production line will cause problems with inventory locations |
| | | Determine better location in shop for commonly used supplies |
| **Organizing and Planning** | 4.29 | Plan delivery schedules in order to facilitate on-time production |
| | | Organize location of commonly used materials in order to improve efficiency of operators |
| | | Plan the number of individuals necessary to conduct an inventory count to ensure proper staffing |
| **Using Social Skills** | 3.51 | Review audit discrepancies in a professional manner with all concerned parties |
| | | Demonstrate sensitivity to customers making unique demands |
| | | Discuss inventory stockout with employees in a tactful way to discover why shortage occurred |
| **Adaptability** | 3.91 | Recalculate production order due to adjusted inventory count |
| | | Modify storage area based on new production needs for different materials |
| | | Adjust reorder points when production needs change |
| | | Change delivery schedules and methods based on new production lines |

# Logistics Inventory Control
## Academic and Employability Examples

| | | |
|---|---|---|
| **Working in Teams** | 3.89 | Work with members of other departments to ensure inventory is correct |
| | | Work with production operators to determine best location of inventory deliveries |
| | | Work with members of various warehouses to ensure inventory is received when it is needed |
| | | Team with engineering to determine when and what the new material requirements will be in order to ensure they are available to production when needed |
| **Leading Others** | 3.59 | Influence others to be accurate when filling orders |
| | | Motivate workers to be accurate when conducting inventory counts by explaining their importance in meeting the business goals |
| | | Lead teams to accomplish the required changes in inventory control |
| | | Influence co-workers to quickly report all inventory discrepancies so that they can be corrected in a timely manner |
| | | Mentor a new employee on the proper methods for conducting inventory |
| **Building Consensus** | 3.74 | Create agreement as to what model parts will be stored in inventory to support various departments |
| | | Resolve allocation discrepancies when product availability is limited |
| | | Work with production to build consensus on the causes of inventory discrepancies |
| | | Work with engineering to create an agreement on the specifications of the materials that must be kept on hand and those that can be housed off-site |
| **Self and Career Development** | 3.39 | Learn all parts of the process to make recommendations that optimize the total process not just a part |
| | | Encourage training and seminars in skill enhancement |
| | | Participate in cross training opportunities |
| | | Attend a new product launch meeting to understand the requirements for logistics |
| **Speaking** | 3.71 | Present root cause analysis to management team and detail key inventory issues |
| | | Present audit procedures for volunteers of physical inventories |
| | | Provide verbal reports to management on the status of inventory accuracy |
| | | ordered |
| | | Communicate changes in material and supply quantities to co-workers |
| **Listening** | 3.91 | Listen to directions on where material needs to be delivered and how it needs to be prepared for production |
| | | Listen to peers' suggestion regarding changes in material flow |
| | | Receive feedback from production departments on inventory, storage, staging and defects |
| | | Listen to supervisor's concerns of discrepancies in audit and change notices in inventory |
| | | Receive feedback from material handlers about the availability of parts |
| **Writing** | 4.18 | Create detailed reports for inventory control |

# Logistics Inventory Control
## Academic and Employability Examples

| | | |
|---|---|---|
| | | Document inventory results and root causes for discrepancies |
| | | Fill out reports to document products shipped |
| | | Fill out re-order form properly in order to minimize back orders |
| | | Fill out scrap ticket to ensure corrective action |
| | | Write audit reports and change notices |
| | | |
| **Reading** | 4.32 | Read memos regarding the change in status of items in inventory |
| | | Review documentation for the changes in production requirements |
| | | Read company policies for disposal of spoilage |
| | | Read written procedures for inventory counting |
| | | Review inventory list to see what suppliers are needed and if there are any discrepancies |
| | | Review defective material report to determine cause of problem |
| | | |
| **Math** | 4.18 | Estimate material needs for general reports |
| | | Measure new stock to out of date stock |
| | | Count all units of inventory in order to conduct proper inventory records |
| | | Calculate what inventory is on hand to meet daily production goals |
| | | Estimate new reorder point for inventory item |
| | | |
| **Science** | 2.66 | Understand basic chemistry to determine whether a product requires special storage |
| | | Knowledge of chemistry to determine shelf life limitation of various materials |
| | | Knowledge of physics to determine proper storage of materials based on weight, stacking requirements, etc. |

LIC2

## Critical Work Function: Ship and receive products and materials.

**Critical work functions** *describe the major responsibilities involved in carrying out a concentration*

**Concentrations** *are the major areas of front-line work covering families of related jobs. Separate standards were identified for each concentration.*

| Key Activities<br>**Key activities** *are the duties and tasks involved in carrying out a critical work function* | Performance Indicators<br>**Performance indicators** *correlate to the key activities. The performance indicators provide information on how to determine when someone is performing each key activity competently* |
|---|---|
| Check accuracy of order | Product count is accurately documented.<br>Product matches purchase order and description.<br>Documentation is accurate as to count and product.<br>Order is reviewed to ensure contract terms and conditions are met.<br>Information is reported to correct parties according to company procedures.<br>Health, safety, environmental and government regulations are met. |
| Package and unpackage materials and products | Container for packing meets regulatory requirements.<br>Container for packing has proper labeling that meets shipping and safety regulations.<br>Packaging materials are properly stored or disposed.<br>Contents of packages match receiving tickets.<br>Bill of lading matches items shipped.<br>Returns and claims for damaged and improperly packaged goods are minimized.<br>Outgoing labels have all relevant information.<br>Incoming labels are checked to ensure that they meet all requirements. |
| Load and unload materials and products | Proper equipment and techniques are used safely.<br>Materials are correctly stored in a proper location.<br>Shipment is by correct carrier and method.<br>Product arrives at appropriate destination.<br>Product is loaded or unloaded safely.<br>Product is loaded or unloaded according to government regulations.<br>Damage to or contamination of materials is minimal. |
| Schedule transportation of products and materials to meet customer needs | Appropriate carrier or method is used to ship product.<br>Product is shipped on time.<br>Health, safety, environmental and government regulations are met.<br>No customer complaints are received about late partial shipments or damaged goods.<br>Products are shipped in the most cost-effective manner. |

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### ACADEMIC AND EMPLOYABILITY SKILLS

| Skill | Overall Complexity Rating for Workers | Overall Complexity Rating for Supervisors | Complexity Dimension | Complexity Subdimension | Complexity Subdimension Rating for Workers |
|---|---|---|---|---|---|
| **Math** | **L** | **L** | Complexity of mathematics content | Number sense and computation | **L** |
| | | | | Geometry, measurement, and spatial sense | **L** |
| | | | | Complexity of data analysis, statistics, and probability | **NA** |
| | | | | Functions and algebraic thinking | **NA** |
| | | | | Complexity of representation and communication | **NA** |
| | | | Complexity of problem solving | Mathematical methods | **M** |
| | | | | Mathematical reasoning | **L** |
| | | | | Mathematical tools | **L** |
| **Science** | **NA** | **L** | Complexity of scientific inquiry | Design | **NA** |
| | | | | Use of evidence | **NA** |
| | | | Complexity of understanding the nature of science | Unifying concepts and processes | **NA** |
| | | | Complexity of core scientific content | Physical science | **NA** |
| | | | | Life science | **NA** |
| | | | | Earth and space science | **NA** |
| | | | Complexity of applied science | Science and technology | **NA** |
| | | | | Science in personal and social perspective | **NA** |
| **Reading** | **L** | **M** | Complexity of text | | **L** |
| | | | Complexity of reading skills | | **L** |
| | | | Complexity of reading purpose | | **L** |
| **Writing** | **L** | **L** | Complexity of text | Complexity of text | **L** |
| | | | Complexity of writing product | Type of product | **L** |
| | | | | Organization | **L** |
| | | | | Elaboration | **L** |
| | | | Complexity of writing process | Writing development | **L** |
| | | | | To inform | **L** |
| | | | | To persuade | **L** |
| **Listening** | **L** | **L** | Complexity of communication | Content complexity | **L** |
| | | | | Demands on attention | **M** |
| | | | | Communication indirectness | **L** |
| | | | Barriers to communication | Limitations on interaction | **L** |
| | | | | Distractions | **M** |
| **Speaking** | **L** | **L** | Complexity of communication | Content complexity | **L** |
| | | | | Tact and sensitivity required | **L** |
| | | | | Communication indirectness | **L** |
| | | | Context demands | Diversity of audience | **M** |
| | | | | Constraints on preparation | **M** |
| | | | | Distractions | **M** |
| | | | | Listener resistance | **L** |
| **Using Information and Communications Technology** | **L** | **L** | Complexity of technology application | Complexity of equipment or technology | **L** |
| | | | | Complexity of applications | **L** |
| | | | | Training time constraints | **L** |
| | | | Frequency of technology change | New learning required | **L** |
| **Gathering and Analyzing Information** | **L** | **L** | Difficulty of information gathering | Amount of information | **M** |
| | | | | Number and variety of sources | **M** |
| | | | | Resourcefulness needed | **L** |
| | | | Complexity of analysis | Complexity of information and analysis | **L** |
| | | | | Need to evaluate source information | **L** |
| | | | | Lack of analysis guidelines | **L** |

## ACADEMIC AND EMPLOYABILITY SKILLS

| Skill | Overall Complexity Rating for Workers | Overall Complexity Rating for Supervisors | Complexity Dimension | Complexity Subdimension | Complexity Subdimension Rating for Workers |
|---|---|---|---|---|---|
| **Analyzing and Solving Problems** | **L** | **L** | Problem complexity | Problem uniqueness or difficulty | **L** |
| | | | | Number and range of problems | **L** |
| | | | Solution complexity | Number and complexity of possible solutions | **L** |
| **Making Decisions and Judgments** | **L** | **L** | Degree of judgment or inference required | Lack of guidance or precedents | **L** |
| | | | | Integration difficulty | **L** |
| | | | | Quantity or ambiguity of risks and consequences | **M** |
| | | | Individual decision-making responsibility | Accountability and autonomy | **M** |
| | | | | Absence or ambiguity of rules or policy constraints | **L** |
| **Organizing and Planning** | **L** | **M** | Complexity of plans | Goal complexity or ambiguity | **L** |
| | | | | Flexibility required | **M** |
| | | | | Resource coordination required | **M** |
| | | | | Scope and effects of planning | **M** |
| | | | Constraints on planning | Lack of guidelines | **L** |
| | | | | Lack of feedback | **L** |
| | | | | Constraints on resource availability | **L** |
| **Using Social Skills** | **L** | **L** | Complexity of social interactions | Diversity | **M** |
| | | | | Structure or protocol required | **L** |
| | | | | Tact and sensitivity required | **L** |
| **Adaptability** | **L** | **L** | Degree of adaptability required | Frequency of change | **M** |
| | | | Difficulty of adapting | Unpredictability of change | **M** |
| | | | | Lack of support for change | **L** |
| **Working in Teams** | **L** | **L** | Degree of collaboration required | Task interdependence | **M** |
| | | | Team member heterogeneity | Team diversity | **M** |
| | | | Goal or role ambiguity | Lack of clarity or support for team goals | **L** |
| | | | | Lack of clarity or stability of responsibilities | **L** |
| **Leading Others** | **L** | **L** | Work challenges | Challenges to goal attainment | **L** |
| | | | | Work structuring requirements | **M** |
| | | | | Scope and complexity of leadership responsibility | **NA** |
| | | | People challenges | Coaching or monitoring needs | **NA** |
| | | | | Conflict management needs | **M** |
| **Building Consensus** | **L** | **L** | Consensus process inhibitors | Number and diversity of stakeholders | **L** |
| | | | | Ambiguity of goals | **L** |
| | | | | Lack of organizational support, incentives, or consensus leadership | **L** |
| | | | | High consensus standard | **L** |
| | | | Difficulty of issues requiring consensus | Complexity of issues | **L** |
| | | | | Contentiousness of issues | **L** |
| | | | | Lack of opportunities for agreement | **L** |
| **Self and Career Develop-ment** | **L** | **L** | Need for learning and development | Self and career development requirements | **L** |
| | | | Limitations on learning and development opportunities | Time, resource, or support constraints | **M** |
| | | | | Application constraints | **L** |

**Overall complexity ratings:** The *overall* level of complexity required in a skill in order to perform the critical work function. *Scale*: H=high complexity; M=moderate complexity; and L=low complexity. Two separate ratings are provided: one for *workers* (entry-level up to first-line supervisors) and the other for *supervisors* (first-line supervisors). In some cases, the overall complexity rating was **NA (Non-Applicable)**. This means that this skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.
**Complexity Subdimension ratings:** These are complexity level ratings for individual aspects of the particular skill. *Scale*: H=high complexity; M=moderate complexity; and L=low complexity. At this time, these ratings are provided for workers only. In some cases, the subdimension complexity rating was **NA (Non-Applicable)**. This means that this *particular dimension* of the skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### OCCUPATIONAL AND TECHNICAL KNOWLEDGE AND SKILLS

*These are the technical knowledge and skills needed to perform the critical work function.*

| Skill Category | Specific Knowledge and Skills | Specific Knowledge and Skills |
|---|---|---|
| **Business Policies and Procedures** | A. Knowledge of carrier performance reporting procedure to determine carrier selection.<br>B. Knowledge of loading patterns described in ISO documented manuals.<br>C. Knowledge of vendor lead times to communicate material turnaround time. | D. Knowledge of returned materials authorization systems.<br>E. Knowledge of company policies and regulations concerning shipments.<br>F. Knowledge of hours of operations and contact names for customer shippers and external warehouses.<br>G. Knowledge of purchase order procedures. |
| **Regulatory Compliance** | A. Knowledge of laws and regulations governing shipping.<br>B. Knowledge of guidelines set forth by federal agencies and other government entities to ensure regulations and procedures are met (e.g. health, safety, environmental and DOT packaging and labeling).<br>C. Knowledge of procedures for identifying all hazardous materials to ensure they are stored properly and labeled.<br>D. Knowledge of OSHA & Material Safety Data Sheets (MSDS) to meet health and safety governmental regulations. | E. Knowledge of procedures to ensure OSHA compliance and to promote ergonomics and safety.<br>F. Skill in ensuring freight-loading equipment meets safety requirements and verifying that all operators are properly licensed.<br>G. Knowledge of weights of product being shipped to ensure compliance with government regulations.<br>H. Knowledge of spill kits and spill kit locations. |
| **Shipping and Carriers** | A. Knowledge of carrier delivery and pickup practices and habits to ensure timely arrival.<br>B. Knowledge of how to generate reports.<br>C. Skill in properly completing company purchase requisitions and shipping paperwork.<br>D. Knowledge of how to calculate ship weights, dimension, and product class to ensure product ships at best rate.<br>E. Knowledge of shipping procedures to ensure documents are properly matched and reconciled for billing and customer service.<br>F. Knowledge of where to get terms and conditions for a particular order to ensure compliance.<br>G. Knowledge of equipment availability and type to schedule transportation.<br>H. Knowledge of shipping costs (i.e., direct and indirect) and options to ensure products are shipped in the most cost-effective method.<br>I. Knowledge of how and when to contact different carriers in order to effect the most economical on-time delivery.<br>J. Knowledge of customer terms to ensure compliance as it relates to transportation. | K. Skill in assessing how to handle damage claims.<br>L. Knowledge of shipping containers.<br>M. Knowledge of shipping label requirements to ensure they are met.<br>N. Knowledge of how to write bills of lading to properly document/reference shipment.<br>O. Knowledge of how to package and label shipping containers to avoid damage to product and to trace package whereabouts.<br>P. Knowledge of customer rules for packaging of material and paperwork in order to ensure acceptance at customer location.<br>Q. Knowledge of business requirements to ascertain what constitutes an accurate order.<br>R. Knowledge of contracts to check accuracy of order.<br>S. Knowledge of company procedure for validating shipments and receipts to ensure order accuracy.<br>T. Knowledge of packaging and unpackaging procedures to deliver undamaged products.<br>U. Knowledge of contractual requirements between company and transportation carriers to ensure health, safety and environmental concerns and requirements are met. |
| **Receiving** | A. Skill in interpreting internal receiving documents and bills of lading to compare what was received with what was ordered.<br>B. Knowledge of where to dispose and store packaging materials.<br>C. Knowledge of vendor-specific handling instructions to ensure material will not be damaged.<br>D. Skill in interpreting purchase order to determine if all materials are present before accepting and recording order into inventory. | E. Knowledge of how to conduct receipt inspection in order to document/record poor quality product.<br>F. Knowledge of what materials can be recycled.<br>G. Knowledge of receiving procedures to ensure that documents are properly matched and reconciled for accounts payable and purchasing. |
| **Customer and Industry Awareness** | A. Knowledge of company procedures and standard industry practices for resolving complaints.<br>B. Knowledge of alternative plan in case there is no paperwork or it cannot be found.<br>C. Knowledge of preferred shippers to best utilize return loads of material. | D. Knowledge of how to process returns.<br>E. Knowledge of customer packaging requirements.<br>F. Knowledge of organization's vision statement to ensure business objectives are met. |
| **Tools and Equipment** | A. Skill in using material handling equipment to efficiently load, unload, and move materials and products.<br>B. Knowledge of certification and license requirements for industrial power vehicles to ensure personnel using them are certified. | C. Knowledge of proper equipment to be used when loading and unloading materials to ensure efficient use and avoid damage and contamination.<br>D. Knowledge of how to properly complete daily checklist for industrial power vehicles, noting variances and communicating safety and mechanical deadlines to appropriate parties.<br>E. Knowledge of safety policies regarding use of equipment to safely load/unload products (e.g., safety policies related to fork trucks). |

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

**OCCUPATIONAL AND TECHNICAL KNOWLEDGE AND SKILLS** *(continued)*

*These are the technical knowledge and skills needed to perform the critical work function.*

| Skill Category | Specific Knowledge and Skills | Specific Knowledge and Skills |
|---|---|---|
| **Statistical Tools and Systems** | A. Knowledge of tracking systems to monitor and respond to customer problems and ensure correct product is shipped.<br>B. Knowledge of receiving systems to know how to package product and verify purchase order on system.<br>C. Knowledge of materials requirements/resources planning software to input data and verify information. | D. Knowledge of organization's system used in determining most suitable carrier.<br>E. Skill in analyzing data concerning damaged materials to identify common trends. |
| **Safety** | A. Knowledge of safety equipment needed to maintain a safe working environment.<br>B. Knowledge of procedures to ensure product is safe for transportation or has not been broken in transit.<br>C. Knowledge of material handling procedures to safely and accurately package and unpackage materials.<br>D. Knowledge of required safety training. | E. Knowledge of products to be shipped and proper handling procedures to communicate those issues to transportation providers.<br>F. Knowledge of weight and height regulations to avoid accidents when storing materials.<br>G. Knowledge of how to move product safely to ensure product is loaded and unloaded safely. |

# Logistics Inventory Control
## Academic and Employability Examples

| Critical Work Function: Ship and receive products and materials | | |
|---|---|---|
| **Knowledge/skill** | **Mean Importance** | **Examples** |
| **Using Information and Communication Technology** | 4.09 | Use material tracking system to scan in items shipped |
| | | Use voice mail to communicate from warehouse to distribution center |
| | | Use email to communicate with other company warehouses |
| | | Use database to verify purchase order information |
| | | Use PC to generate purchase orders and shipping documentation |
| | | |
| **Gathering and Analyzing Information** | 3.83 | Evaluate on-time delivery rate and order accuracy to identify improvement opportunities |
| | | Analyze product or materials to purchase order to determine if shipment is correct |
| | | Analyze production results to see if reorder is needed |
| | | Analyze shipment schedule to determine if it will meet production schedule |
| | | Analyze shipping costs to determine if they are cost effective |
| | | |
| **Analyzing and Solving Problems** | 3.80 | Analyze data regarding damaged or lost goods to define solutions with shipper or transporter |
| | | Analyze certification data to ensure that all forklift drivers have received the new certifications from OSHA to prevent injuries |
| | | Identify contents of packing discrepancies to correct the problem quickly |
| | | times |
| | | |
| **Making Decisions and Judgments** | 3.77 | Determine if material can be stored in other than specified conditions for a short periods of time under special circumstances |
| | | Decide whether the design team should be notified based on the return rates of products |
| | | Determine if alternative shipping is required to meet customer needs |
| | | Determine if final product has all of the necessary documentation in order to be shipped |
| | | Determine the most appropriate and cost-effect method of shipping |
| | | |
| **Organizing and Planning** | 4.03 | Organize area for exceptions requiring disposition |
| | | Organize the unloading of trucks to ensure safety and to avoid excess freight on the shipping dock |
| | | Plan the load sequence to minimize trucks waiting at shipping dock |
| | | |
| **Using Social Skills** | | Explain delays to carriers waiting for pick-up or delivery in a sensitive way |
| | 3.36 | Explain delays to customers in a professional manner |
| | | Demonstrate sensitivity to stressed out workers during high shipment times when tensions are running high |
| | | Explain tactfully the reason why a worker is not qualified to perform certain tasks (e.g., drive forklift without certification) |
| | | |
| **Adaptability** | | Demonstrate receptivity to reorganizing shipping area to facilitate an improved work flow |

# Logistics Inventory Control
## Academic and Employability Examples

| | | |
|---|---|---|
| | 3.69 | Adapt loading/unloading schedule based on unexpected truck delays |
| | | Change transportation requirements based on new customer needs |
| | | Modify packing boxes to meet new regulatory requirements |
| | | |
| **Working in Teams** | | Work with a team to design new packaging approaches to meet customer requirements |
| | 3.77 | Team with forklift truck operators to develop new traffic patterns to improve safety on the production floor |
| | | time |
| | | Team with production workers to ensure there are not backups of finished goods on the floor |
| | | |
| **Leading Others** | 3.40 | Motivate material movers to ensure that production has the materials when and where they need them |
| | | Encourage the proper use of specific packaging in order to meet customer needs |
| | | Illustrate the importance of proper packaging and loading of trailers to be in compliance with regulations |
| | | Show others the correct methods to document incoming and outgoing parts and products |
| | | |
| **Building Consensus** | 3.29 | Resolve co-workers' disagreements regarding priorities for loading trucks |
| | | Resolve material location concerns in order to accomplish production goals |
| | | Facilitate agreement on the scheduling to accomplish the most cost effective shipment |
| | | Resolve packaging concerns with customers to ensure that customer is satisfied |
| | | Resolve shipment under/overs with supplier |
| | | |
| **Self and Career Development** | 3.21 | Regularly receive training on requirements for shipped materials |
| | | Volunteer to rotating assignments to learn more about the inventory system |
| | | Attend training on forklift loading and unloading |
| | | |
| **Speaking** | 3.51 | Talk with customers about any shipment problems |
| | | Discuss preferred shipment methods or options with customers |
| | | Conduct a training session on how to treat damaged goods |
| | | Discuss item-specific nuances of processing delicate or sensitive material with material handlers |
| | | |
| **Listening** | 3.77 | Listen to concerns from quality assurance regarding shipping quality work to resolve |
| | | Listen to HSE people regarding new requirements on shipping |
| | | Listen to a customer's new requirement on delivery times |
| | | Listen to customer complaints about the products to determine if shipping may have damaged the product |
| | | Listen to  instructions on loading trucks to minimize damage of large containers |
| | | |
| **Writing** | 4.03 | Write bill of lading or manifest for materials being shipped |
| | | Write a description of why a shipment is rejected |

# Logistics Inventory Control
## Academic and Employability Examples

| | | |
|---|---|---|
| | | Write a letter to customer responding to complaints |
| | | Fill out forms verifying contents of packing |
| | | Label products correctly for shipment |
| | | |
| **Reading** | 4.15 | Read bill of lading to ensure proper shipment of product |
| | | Read labels on products to determine what safeguards must be taken in shipping the product |
| | | Review the new diagram about the new packaging process |
| | | Read and check customer order status before shipping |
| | | Read customer complaint reports in order to modify shipping or packaging methods, if necessary |
| | | |
| **Math** | 4.06 | Estimate cost savings for multiple shipments |
| | | Verify product counts |
| | | Calculate weight for bill of lading |
| | | Calculate the cost of damaged materials |
| | | Count number of items received and compare it to number of items ordered |
| | | |
| **Science** | 2.61 | Knowledge of HAZMATs to ensure proper shipping and receiving precautions are taken |
| | | Knowledge of physics to ensure that the materials are loaded properly on fork lift |
| | | |

LIC3

## Critical Work Function: Maintain a safe and productive work area.

**Critical work functions** *describe the major responsibilities involved in carrying out a concentration*

**Concentrations** *are the major areas of front-line work covering families of related jobs. Separate standards were identified for each concentration.*

| Key Activities<br>**Key activities** *are the duties and tasks involved in carrying out a critical work function* | Performance Indicators<br>**Performance indicators** *correlate to the key activities. The performance indicators provide information on how to determine when someone is performing each key activity competently* |
|---|---|
| Perform environmental and safety inspections | Potential hazards in the work are identified, reported, monitored.<br>Corrective action is taken to correct potential hazards.<br>Health, safety and environmental documentation and policies are thoroughly and regularly reviewed.<br>Inspections meet all relevant, health, safety, and environmental laws and regulations.<br>Inspections are done according to company schedule and procedures.<br>Inspections are documented.<br>Inspection records are stored correctly. |
| Perform emergency drills and participate in emergency response teams | Training and certification on relevant emergency and first aid procedures is complete and up to date.<br>Emergency response complies with company and regulatory policies and procedures.<br>Emergency drills and incidents are documented promptly according to company and regulatory procedures. |
| Identify unsafe conditions and take corrective action | Conditions that present a threat to health, safety and the environment are identified, reported, and documented promptly.<br>Corrective actions are identified.<br>Appropriate parties are consulted about corrective actions.<br>Corrective actions are taken promptly according to company procedures.<br>Ongoing safety concerns are tracked and reported until corrective action is taken. |
| Provide safety orientation to other employees | Orientation covers all topics and procedures needed to facilitate employee safety.<br>Orientation makes clear the need and processes for employees to raise safety concerns, ask questions, and receive additional training.<br>Orientation is documented according to company requirements.<br>Orientation meets all relevant laws, policies, and regulations.<br>Safety training is delivered regularly. |

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### ACADEMIC AND EMPLOYABILITY SKILLS

| Skill | Overall Complexity Rating for Workers | Overall Complexity Rating for Supervisors | Complexity Dimension | Complexity Subdimension | Complexity Subdimension Rating for Workers |
|---|---|---|---|---|---|
| **Math** | **NA** | **L** | Complexity of mathematics content | Number sense and computation | **NA** |
| | | | | Geometry, measurement, and spatial sense | **NA** |
| | | | | Complexity of data analysis, statistics, and probability | **NA** |
| | | | | Functions and algebraic thinking | **NA** |
| | | | | Complexity of representation and communication | **NA** |
| | | | Complexity of problem solving | Mathematical methods | **NA** |
| | | | | Mathematical reasoning | **NA** |
| | | | | Mathematical tools | **NA** |
| **Science** | **L** | **L** | Complexity of scientific inquiry | Design | **L** |
| | | | | Use of evidence | **L** |
| | | | Complexity of understanding the nature of science | Unifying concepts and processes | **L** |
| | | | Complexity of core scientific content | Physical science | **M** |
| | | | | Life science | **NA** |
| | | | | Earth and space science | **NA** |
| | | | Complexity of applied science | Science and technology | **L** |
| | | | | Science in personal and social perspective | **NA** |
| **Reading** | **M** | **M** | Complexity of text | | **M** |
| | | | Complexity of reading skills | | **M** |
| | | | Complexity of reading purpose | | **M** |
| **Writing** | **L** | **M** | Complexity of text | Complexity of text | **M** |
| | | | Complexity of writing product | Type of product | **M** |
| | | | | Organization | **M** |
| | | | | Elaboration | **M** |
| | | | Complexity of writing process | Writing development | **L** |
| | | | | To inform | **M** |
| | | | | To persuade | **L** |
| **Listening** | **M** | **M** | Complexity of communication | Content complexity | **M** |
| | | | | Demands on attention | **M** |
| | | | | Communication indirectness | **L** |
| | | | Barriers to communication | Limitations on interaction | **M** |
| | | | | Distractions | **M** |
| **Speaking** | **M** | **M** | Complexity of communication | Content complexity | **M** |
| | | | | Tact and sensitivity required | **M** |
| | | | | Communication indirectness | **L** |
| | | | Context demands | Diversity of audience | **M** |
| | | | | Constraints on preparation | **M** |
| | | | | Distractions | **M** |
| | | | | Listener resistance | **M** |
| **Using Information and Communications Technology** | **L** | **L** | Complexity of technology application | Complexity of equipment or technology | **L** |
| | | | | Complexity of applications | **L** |
| | | | | Training time constraints | **M** |
| | | | Frequency of technology change | New learning required | **M** |
| **Gathering and Analyzing Information** | **M** | **M** | Difficulty of information gathering | Amount of information | **M** |
| | | | | Number and variety of sources | **M** |
| | | | | Resourcefulness needed | **M** |
| | | | Complexity of analysis | Complexity of information and analysis | **M** |
| | | | | Need to evaluate source information | **M** |
| | | | | Lack of analysis guidelines | **M** |

## ACADEMIC AND EMPLOYABILITY SKILLS

| Skill | Overall Complexity Rating for Workers | Overall Complexity Rating for Supervisors | Complexity Dimension | Complexity Subdimension | Complexity Subdimension Rating for Workers |
|---|---|---|---|---|---|
| **Analyzing and Solving Problems** | **M** | **M** | Problem complexity | Problem uniqueness or difficulty | **M** |
| | | | | Number and range of problems | **M** |
| | | | Solution complexity | Number and complexity of possible solutions | **M** |
| **Making Decisions and Judgments** | **M** | **L** | Degree of judgment or inference required | Lack of guidance or precedents | **M** |
| | | | | Integration difficulty | **M** |
| | | | | Quantity or ambiguity of risks and consequences | **M** |
| | | | Individual decision-making responsibility | Accountability and autonomy | **M** |
| | | | | Absence or ambiguity of rules or policy constraints | **L** |
| **Organizing and Planning** | **L** | **M** | Complexity of plans | Goal complexity or ambiguity | **L** |
| | | | | Flexibility required | **M** |
| | | | | Resource coordination required | **M** |
| | | | | Scope and effects of planning | **M** |
| | | | Constraints on planning | Lack of guidelines | **L** |
| | | | | Lack of feedback | **L** |
| | | | | Constraints on resource availability | **M** |
| **Using Social Skills** | **M** | **M** | Complexity of social interactions | Diversity | **M** |
| | | | | Structure or protocol required | **M** |
| | | | | Tact and sensitivity required | **M** |
| **Adaptability** | **L** | **L** | Degree of adaptability required | Frequency of change | **M** |
| | | | Difficulty of adapting | Unpredictability of change | **M** |
| | | | | Lack of support for change | **L** |
| **Working in Teams** | **L** | **M** | Degree of collaboration required | Task interdependence | **M** |
| | | | Team member heterogeneity | Team diversity | **M** |
| | | | Goal or role ambiguity | Lack of clarity or support for team goals | **L** |
| | | | | Lack of clarity or stability of responsibilities | **L** |
| **Leading Others** | **L** | **M** | Work challenges | Challenges to goal attainment | **L** |
| | | | | Work structuring requirements | **L** |
| | | | | Scope and complexity of leadership responsibility | **NA** |
| | | | People challenges | Coaching or monitoring needs | **NA** |
| | | | | Conflict management needs | **L** |
| **Building Consensus** | **L** | **L** | Consensus process inhibitors | Number and diversity of stakeholders | **L** |
| | | | | Ambiguity of goals | **L** |
| | | | | Lack of organizational support, incentives, or consensus leadership | **L** |
| | | | | High consensus standard | **M** |
| | | | Difficulty of issues requiring consensus | Complexity of issues | **L** |
| | | | | Contentiousness of issues | **M** |
| | | | | Lack of opportunities for agreement | **M** |
| **Self and Career Develop-ment** | **NA** | **L** | Need for learning and development | Self and career development requirements | **NA** |
| | | | Limitations on learning and development opportunities | Time, resource, or support constraints | **NA** |
| | | | | Application constraints | **NA** |

**Overall complexity ratings:** The *overall* level of complexity required in a skill in order to perform the critical work function. *Scale*: H=high complexity; M=moderate complexity; and L=low complexity. Two separate ratings are provided: one for *workers* (entry-level up to first-line supervisors) and the other for *supervisors* (first-line supervisors). In some cases, the overall complexity rating was **NA (Non-Applicable)**. This means that this skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.
**Complexity Subdimension ratings:** These are complexity level ratings for individual aspects of the particular skill. *Scale*: H=high complexity; M=moderate complexity; and L=low complexity. At this time, these ratings are provided for workers only. In some cases, the subdimension complexity rating was **NA (Non-Applicable)**. This means that this *particular dimension* of the skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### OCCUPATIONAL AND TECHNICAL KNOWLEDGE AND SKILLS

*These are the technical knowledge and skills needed to perform the critical work function.*

| Skill Category | Specific Knowledge and Skills | Specific Knowledge and Skills |
|---|---|---|
| **Safety Procedures** | A. Knowledge of how to locate and use Material Safety Data Sheets (MSDS).<br>B. Knowledge of company first aid or first response procedures.<br>C. Knowledge of material handling techniques to safely move materials.<br>D. Knowledge of how to be proactive in responding to a safety concern and document occurrences.<br>E. Knowledge of emergency exits.<br>F. Knowledge of various emergency alarms and procedures. | G. Knowledge of clean-up procedures for spills.<br>H. Knowledge of Lock Out/Tag Out requirements.<br>I. Knowledge of how to inspect work area and report possible safety risks.<br>J. Knowledge of machine functions to determine if all safeguards are operational.<br>K. Knowledge of safety procedures in case of smoke or chemical inhalation.<br>L. Knowledge of procedures for handling hazardous materials. |
| **Personal Safety** | A. Skill in identifying and reporting unsafe conditions.<br>B. Knowledge of safety issues related to hazardous materials.<br>C. Knowledge of housekeeping needed to maintain a safe work environment. | D. Skill in determining if all safety guards are in place prior to machine operation.<br>E. Knowledge of clothing and personal protective equipment (PPE) that should be worn to ensure safety. |
| **Safety Policies and Regulations** | A. Knowledge of basic filing procedures to properly store inspection records.<br>B. Knowledge of safety requirements and environmental regulations related to performing inspections.<br>C. Knowledge of policies and procedures needed to perform audits and train employees about hazardous conditions. | D. Knowledge of company safety standards for handling potential hazards.<br>E. Knowledge of how to safely store, identify, and use hazardous materials and pressurized vessels.<br>F. Knowledge of OSHA and other health and safety requirements as applied to the workplace. |
| **Corrective Action** | A. Knowledge of what constitutes an unsafe condition to be able to take corrective actions.<br>B. Knowledge of required corrective action procedures. | C. Knowledge of accident documentation procedures. |
| **Safety Training** | A. Skill in developing and/or delivering safety training per guidelines. | B. Knowledge of health and safety education requirements. |

## Logistics Inventory Control
## Academic and Employability Examples

| Critical Work Function: Maintain a safe and productive work area | | |
|---|---|---|
| **Knowledge/skill** | **Mean Importance** | **Examples** |
| **Using Information and Communication Technology** | 3.42 | Input all safety and health training into data base to guarantee proper documentation |
| | | Use computerized data collection to identify accident trends/areas that need to be evaluated for correction and elimination |
| | | Use computers to access training programs |
| | | Use PowerPoint presentations to conduct safety orientations |
| | | Use computer to track safety training |
| | | |
| **Gathering and Analyzing Information** | 3.13 | Gather, analyze and compare present safety conditions to past |
| | | Visually inspect work area for possible safety hazards |
| | | Collect information on safety audits and accident logs to identify improvement opportunities and corrective actions |
| | | Gather information on who is in need of safety training |
| | | Gather information from injury reports to determine repeated injuries from dangerous equipment in order to make corrections |
| | | |
| **Analyzing and Solving Problems** | 3.34 | Identify safety issues to recommend corrective actions |
| | | Select proper personnel protective equipment for the job to prevent injuries |
| | | Analyze safety inspection reports to help implement a corrective action plan |
| | | Identify areas or tasks where most injuries occur to suggest modifications to process, layout or job rotations in order to eliminate injuries |
| | | |
| **Making Decisions and Judgments** | 3.65 | Decide on the list of priorities necessary for training of personnel in emergency response situations |
| | | Determine that all safety equipment and guards are in place |
| | | Identify unsafe conditions |
| | | Determine if team members have the training and physical capabilities to safely complete assigned task |
| | | Determine the frequency of safety training and drills |
| | | |
| **Organizing and Planning** | 3.47 | Organize safety drills to ensure worker safety |
| | | Plan and organize safety and environmental inspections in order to prevent accidents |
| | | Plan the appropriate timing of emergency drills |
| | | Plan emergency drills to prepare for threats to health or safety |
| | | |
| **Using Social Skills** | 3.55 | Communicate to the production supervisor that a safety issues exists and critical process must be stopped until a remedy is found |
| | | Interact with peers to share info on emergency drills/procedures |

| | | |
|---|---|---|
| | | Interact with new employees on importance of safe work environment in order to make a positive impact |
| | | Give feedback to a co-worker in order to communicate a safer way to perform an operation or task |
| | | |
| **Adaptability** | 3.13 | Change method of production to achieve safer outcomes |
| | | Change to a new safety procedure in order to comply with new safety law requirements |
| | | Change the production process to temporarily work around an unsafe area or condition |
| | | Be able to respond to different types of emergencies |
| | | |
| **Working in Teams** | 3.58 | Work with co-workers to identify and report unsafe conditions |
| | | Work with all team members to conduct effective fire/safety/emergency drills |
| | | Meet and discuss conditions that are thought to be unsafe in order to make everyone aware |
| | | |
| **Leading Others** | 3.55 | Correct potential safety issues when discovered, to make co-workers aware of how issues should be addressed |
| | | Encourage a more participative approach to safety issues |
| | | Lead by example to show no repercussion of notification of possible unsafe conditions |
| | | Lead others to work safely by emphasizing safe practices |
| | | Build a common theme of "safety-first" among workers to ensure a safe work environment |
| | | |
| **Building Consensus** | 3.00 | Explain how to correct an unsafe condition without offending the affected workers |
| | | Review potential or existing safety concerns and build consensus by discussing potential actions needed to resolve them |
| | | Facilitate agreement on safety procedures in order to assure entire team follows the agreed-upon process |
| | | Create consensus upon emergency procedures and specific people's responsibilities |
| | | Build consensus on what level of safety training is needed |
| | | |
| **Self and Career Development** | 2.93 | Learn about hazardous material specs to prevent injury |
| | | Attend in-house operator safety seminars |
| | | Identify learning opportunities in environmental laws and technology to improve safety |
| | | Acquire CPR and first-aid training |
| | | |
| **Speaking** | 3.48 | Present safety policies and procedures to other employees in order to understand the importance of safety |
| | | Express concerns to management about unsafe work environment |
| | | Present accurate and cogent presentations to new hires and trainees in safety subjects |
| | | Present safety training to co-workers when new work processes are implemented |
| | | Discuss environmental issues with supervisor in order to avoid accidents and unsafe conditions |

## Logistics Inventory Control
## Academic and Employability Examples

| | | |
|---|---|---|
| **Listening** | 3.44 | Listen to descriptions of safety policies and procedures in order to avoid accidents |
| | | Listen to the concerns of the employee in order to identify ergonomics improvements needed |
| | | Receive feedback from employees as it pertains to safety in a respectful and attentive way |
| | | Listen to employees identifying potential safety hazards and take corrective actions |
| **Writing** | 3.21 | Post written warnings about unsafe conditions |
| | | Write accurate accident injury reports |
| | | Document clear procedures for safety practices |
| | | Document equipment safety checks in safety log book |
| | | Document safety incident and training orientation |
| | | Document corrective actions regarding safety |
| **Reading** | 3.63 | Read warning labels to identify potentially hazardous materials |
| | | Read information on emergency procedures |
| | | Read MSDS forms to protect self and others |
| | | Read company safety policies and procedures |
| | | Read machinery and product instructions in order to safely use them |
| | | Read safety and environmental standards to perform inspections |
| **Math** | 2.31 | Tabulate safety incidents |
| | | Calculate the safe volumes of contamination |
| | | Measure the distances needed to maintain safe tolerances in the workplace |
| | | Measure content of lead in painted surfaces |
| | | Calculate production quantities against accident rates to ensure that demand doesn't create unsafe workplace |
| **Science** | 3.21 | Understanding of how the body is impacted by ergonomics in order to make workstation more comfortable and safe |
| | | Understanding of potential chemical hazards |
| | | Knowledge of basic electrical systems to prevent electrocution |

LIC4

## Critical Work Function: Communicate with co-workers and/or external customers to ensure production meets business requirements

**Critical work functions** *describe the major responsibilities involved in carrying out a concentration*

**Concentrations** *are the major areas of front-line work covering families of related jobs. Separate standards were identified for each concentration.*

| Key Activities<br>**Key activities** *are the duties and tasks involved in carrying out a critical work function* | Performance Indicators<br>**Performance indicators** *correlate to the key activities. The performance indicators provide information on how to determine when someone is performing each key activity competently* |
|---|---|
| Communicate safety, training and job-specific needs | Communication is sufficient to ensure that safety issues are understood and safety practices used.<br>On-the-job issues and concerns are discussed and quickly resolved.<br>Current and future training issues are identified in a timely way.<br>Communication demonstrates knowledge of customer and business needs.<br>Communication is clear and relevant to the situation.<br>Communication is made in a timely and accurate manner to the correct parties.<br>Issues are evaluated, tracked and reported back to original communicator.<br>Communications are tracked and documented, as appropriate. |
| Communicate material specifications and delivery schedules | Communication reflects knowledge of material specifications.<br>Delivery schedules are clearly communicated.<br>Communication demonstrates knowledge of customer and business needs.<br>Communication is clear and relevant to material and delivery issues.<br>Communication is made in a timely and accurate manner to the correct parties.<br>Material and delivery issues are evaluated, tracked and reported back to original communicator.<br>Communications are tracked and documented, as appropriate. |
| Communicate quality requirements, issues and training | Communication reflects knowledge of quality requirements.<br>Quality issues are raised in a timely way.<br>Quality issues are addressed in a timely way.<br>Communication demonstrates knowledge of customer and business needs.<br>Communication is clear and relevant to quality.<br>Communication is made in a timely and accurate manner to the correct parties.<br>Quality issues are recorded, and tracked and reported back to original communicator.<br>Communications are tracked and documented, as appropriate. |
| Communicate production requirements and product specifications | Communication reflects knowledge of production requirements, levels, and product specifications.<br>Communication is initiated cross-functionally as required to meet production requirements, product specifications, or other customer or business needs.<br>All parties are notified of production issues and problems in a timely way.<br>Communication demonstrates knowledge of customer and business needs.<br>Communication is clear and relevant to production and products.<br>Issues are evaluated, tracked and reported back to original communicator.<br>Communications are tracked and documented, as appropriate. |

## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### ACADEMIC AND EMPLOYABILITY SKILLS

| Skill | Overall Complexity Rating for Workers | Overall Complexity Rating for Supervisors | Complexity Dimension | Complexity Subdimension | Complexity Subdimension Rating for Workers |
|---|---|---|---|---|---|
| **Math** | **NA** | **L** | Complexity of mathematics content | Number sense and computation | **NA** |
| | | | | Geometry, measurement, and spatial sense | **NA** |
| | | | | Complexity of data analysis, statistics, and probability | **NA** |
| | | | | Functions and algebraic thinking | **NA** |
| | | | | Complexity of representation and communication | **NA** |
| | | | Complexity of problem solving | Mathematical methods | **NA** |
| | | | | Mathematical reasoning | **NA** |
| | | | | Mathematical tools | **NA** |
| **Science** | **NA** | **L** | Complexity of scientific inquiry | Design | **NA** |
| | | | | Use of evidence | **NA** |
| | | | Complexity of understanding the nature of science | Unifying concepts and processes | **NA** |
| | | | Complexity of core scientific content | Physical science | **NA** |
| | | | | Life science | **NA** |
| | | | | Earth and space science | **NA** |
| | | | Complexity of applied science | Science and technology | **NA** |
| | | | | Science in personal and social perspective | **NA** |
| **Reading** | **M** | **M** | Complexity of text | | **M** |
| | | | Complexity of reading skills | | **M** |
| | | | Complexity of reading purpose | | **M** |
| **Writing** | **M** | **M** | Complexity of text | Complexity of text | **M** |
| | | | Complexity of writing product | Type of product | **M** |
| | | | | Organization | **M** |
| | | | | Elaboration | **M** |
| | | | Complexity of writing process | Writing development | **M** |
| | | | | To inform | **M** |
| | | | | To persuade | **M** |
| **Listening** | **M** | **H** | Complexity of communication | Content complexity | **M** |
| | | | | Demands on attention | **M** |
| | | | | Communication indirectness | **M** |
| | | | Barriers to communication | Limitations on interaction | **M** |
| | | | | Distractions | **M** |
| **Speaking** | **M** | **H** | Complexity of communication | Content complexity | **M** |
| | | | | Tact and sensitivity required | **M** |
| | | | | Communication indirectness | **M** |
| | | | Context demands | Diversity of audience | **M** |
| | | | | Constraints on preparation | **M** |
| | | | | Distractions | **M** |
| | | | | Listener resistance | **M** |
| **Using Information and Communications Technology** | **M** | **M** | Complexity of technology application | Complexity of equipment or technology | **M** |
| | | | | Complexity of applications | **L** |
| | | | | Training time constraints | **M** |
| | | | Frequency of technology change | New learning required | **M** |
| **Gathering and Analyzing Information** | **M** | **M** | Difficulty of information gathering | Amount of information | **M** |
| | | | | Number and variety of sources | **M** |
| | | | | Resourcefulness needed | **M** |
| | | | Complexity of analysis | Complexity of information and analysis | **M** |
| | | | | Need to evaluate source information | **M** |
| | | | | Lack of analysis guidelines | **M** |

## ACADEMIC AND EMPLOYABILITY SKILLS

| Skill | Overall Complexity Rating for Workers | Overall Complexity Rating for Supervisors | Complexity Dimension | Complexity Subdimension | Complexity Subdimension Rating for Workers |
|---|---|---|---|---|---|
| **Analyzing and Solving Problems** | **L** | **L** | Problem complexity | Problem uniqueness or difficulty | **L** |
| | | | | Number and range of problems | **M** |
| | | | Solution complexity | Number and complexity of possible solutions | **M** |
| **Making Decisions and Judgments** | **L** | **L** | Degree of judgment or inference required | Lack of guidance or precedents | **L** |
| | | | | Integration difficulty | **M** |
| | | | | Quantity or ambiguity of risks and consequences | **M** |
| | | | Individual decision-making responsibility | Accountability and autonomy | **M** |
| | | | | Absence or ambiguity of rules or policy constraints | **L** |
| **Organizing and Planning** | **M** | **M** | Complexity of plans | Goal complexity or ambiguity | **M** |
| | | | | Flexibility required | **M** |
| | | | | Resource coordination required | **M** |
| | | | | Scope and effects of planning | **M** |
| | | | Constraints on planning | Lack of guidelines | **M** |
| | | | | Lack of feedback | **M** |
| | | | | Constraints on resource availability | **M** |
| **Using Social Skills** | **M** | **H** | Complexity of social interactions | Diversity | **M** |
| | | | | Structure or protocol required | **M** |
| | | | | Tact and sensitivity required | **M** |
| **Adaptability** | **M** | **M** | Degree of adaptability required | Frequency of change | **M** |
| | | | Difficulty of adapting | Unpredictability of change | **M** |
| | | | | Lack of support for change | **M** |
| **Working in Teams** | **M** | **M** | Degree of collaboration required | Task interdependence | **M** |
| | | | Team member heterogeneity | Team diversity | **M** |
| | | | Goal or role ambiguity | Lack of clarity or support for team goals | **M** |
| | | | | Lack of clarity or stability of responsibilities | **M** |
| **Leading Others** | **M** | **M** | Work challenges | Challenges to goal attainment | **M** |
| | | | | Work structuring requirements | **M** |
| | | | | Scope and complexity of leadership responsibility | **NA** |
| | | | People challenges | Coaching or monitoring needs | **NA** |
| | | | | Conflict management needs | **M** |
| **Building Consensus** | **M** | **M** | Consensus process inhibitors | Number and diversity of stakeholders | **M** |
| | | | | Ambiguity of goals | **M** |
| | | | | Lack of organizational support, incentives, or consensus leadership | **M** |
| | | | | High consensus standard | **M** |
| | | | Difficulty of issues requiring consensus | Complexity of issues | **M** |
| | | | | Contentiousness of issues | **M** |
| | | | | Lack of opportunities for agreement | **M** |
| **Self and Career Develop-ment** | **NA** | **L** | Need for learning and development | Self and career development requirements | **NA** |
| | | | Limitations on learning and development opportunities | Time, resource, or support constraints | **NA** |
| | | | | Application constraints | **NA** |

**Overall complexity ratings:** The *overall* level of complexity required in a skill in order to perform the critical work function. *Scale*: H=high complexity; M=moderate complexity; and L=low complexity. Two separate ratings are provided: one for *workers* (entry-level up to first-line supervisors) and the other for *supervisors* (first-line supervisors). In some cases, the overall complexity rating was **NA (Non-Applicable)**. This means that this skill was deemed not to be needed to perform this given critical work function, so no complexity rating was assigned.

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## Knowledge and Skills

*Describes what a worker needs to know or be able to do to perform the critical work function*

### OCCUPATIONAL AND TECHNICAL KNOWLEDGE AND SKILLS

*These are the technical knowledge and skills needed to perform the critical work function.*

| Skill Category | Specific Knowledge and Skills | Specific Knowledge and Skills |
|---|---|---|
| **Quality** | A. Knowledge of quality concepts and how to resolve them in a way that meets business requirements.<br>B. Knowledge of third party quality testing to ensure materials meet specifications.<br>C. Skill in completing a non-conforming product form to get approval for proper material disposition. | D. Knowledge of material specifications.<br>E. Skill in interpreting quality requirements, industry standards, and documentation requirements.<br>F. Knowledge of traceable documentation. |
| **Scheduling** | A. Skill in calculating time estimates for jobs.<br>B. Knowledge of schedules and how to access schedules of customers or suppliers. | C. Knowledge of how to complete a requisition form to order job-related material. |
| **Safety** | A. Knowledge of safety issues and practices, including Occupational Safety and Health Administration (OSHA) regulations, to take or recommend action. | B. Knowledge of how to use Material Safety Data Sheets (MSDS).<br>C. Knowledge of company reporting forms and documents and procedures specific to safety. |
| **Business Policies and Procedures** | A. Knowledge of which company forms to use when communicating.<br>B. Knowledge of company organizational structure to communicate with correct parties. | C. Knowledge of customer and business needs in order to communicate effectively. |
| **Manufacturing Process** | A. Knowledge of product production specifications and productivity requirements.<br>B. Knowledge of customer requirements.<br>C. Knowledge of order size and materials requirements. | D. Knowledge of production process to meet business requirements.<br>E. Knowledge of material tracking and handling procedures.<br>F. Knowledge of the basic terminology used in the workplace. |

# Logistics Inventory Control
## Academic and Employability Examples

### Critical Work Function: Communicate with co-workers and/or external customers to ensure production meets business requirement

| Knowledge/skill | Mean Importance | Examples |
|---|---|---|
| **Using Information and Communication Technology** | 3.84 | Use overhead projectors and computers to train employees in the safe operation of equipment |
| | | Use phone to communicate with customers on quality and deliver times |
| | | Post production schedule on Excel spreadsheet to monitor and track progress to commitment |
| | | Use phone/fax and email to relate material specifications |
| | | Use computerized reports to share production and quality information with production workers |
| | | |
| **Gathering and Analyzing Information** | 3.48 | Gather and analyze data on hazardous process that may become safety concern |
| | | Communicate change orders from sales staff to production floor |
| | | Communicate shift to shift problems and concerns to help ensure efficiency |
| | | Gather information on product functionality and materials in order to communicate and address production needs |
| | | Gather production quantities and stock amounts to schedule overtime |
| | | |
| **Analyzing and Solving Problems** | 3.57 | Analyze production bottlenecks to suggest alternate plans |
| | | Review daily quality output stats with team |
| | | Identify possible hazards in order to eliminate time loss injury |
| | | Analyze material needs to ensure production can be met |
| | | |
| **Making Decisions and Judgments** | 3.29 | Determine with the customer any deviations from specs that are acceptable |
| | | Determine what communications are needed in order to meet production requirements |
| | | Determine the time to completion in order to move product from one station to next |
| | | Determine cause of conflict between clients and coworkers and determine corrective action |
| | | |
| **Organizing and Planning** | 3.63 | Plan to have operators info-share quality concerns/issues between departments and shifts |
| | | Organize meetings in order to communicate all production requirements |
| | | Organize training to meet the needs of the worker in order to maximize results |
| | | Organize and plan routine communication with customers |
| | | |
| **Using Social Skills** | 3.94 | Suggest improvements to employees using examples of how to implement them without insulting the workers |
| | | Encourage cooperation between peers to establish good communication among operators |
| | | Meet with contractors in a professional manner to discuss challenges |
| | | Contact line workers in a friendly and enthusiastic manner to communicate safety and job specific needs |
| | | |
| **Adaptability** | 3.68 | Express receptivity to shared input from co-workers |
| | | Be flexible to ever-changing customer needs and requirements |
| | | Quickly accommodate to changing environments and conditions in order to maintain quality and production |

| | | |
|---|---|---|
| | | Demonstrate sensitivity to customer's changing delivery schedule |
| | | |
| **Working in Teams** | 3.93 | Meet with outside vendor to ensure that product specs and delivery times are completely understood |
| | | Pass along information to co-workers concerning production demands issues and possible solutions |
| | | Team with co-workers to communicate potential hazards to one another |
| | | |
| **Leading Others** | 3.60 | Provide peer training on problem solving techniques |
| | | Motivate employees through positive affirmations rather than intimidation and fear |
| | | Provide recognition for work well done |
| | | Become a spokesperson for department by evaluating areas of concern |
| | | Provide timely feedback to an operator encountering performance problems |
| | | |
| **Building Consensus** | 3.41 | Work with operators to collectively agree on process quality, product quality, and produce specs so that there are no differences |
| | | Work with team to reach consensus on today's work assignments based on skills training and team member preference |
| | | Facilitate agreement about quality, schedules and production to best format team assignments |
| | | Resolve any performance issues in a positive manner to accomplish long-term production goals |
| | | Create agreement by having all parties communicate regarding quality requirements and issues |
| | | |
| **Self and Career Development** | 2.73 | Identify training courses offered by the company in order to meet with the business's requirements |
| | | Self educate on customer and corporate goals and policies |
| | | Share knowledge and ask for feedback from customers |
| | | Attend training about communicating material specifications and delivery schedules |
| | | |
| **Speaking** | 4.00 | Communicate to the set up person the adjustments needed to bring a process into control |
| | | Communicate to other employees quality requirements and production requirements |
| | | Present training sessions to employees on new production processes |
| | | Give oral production reports to co-workers of other shifts or departments to maintain goals |
| | | |
| **Listening** | 3.77 | Listen to the concerns of co-workers regarding product specifications and requirements for improvements |
| | | Listen to concerns of staff to better provide training |
| | | Listen to the perspective of all team members in order to see the overall view of the issue |
| | | Receive feedback from co-workers on job performance in an appropriate way |
| | | |
| **Writing** | 3.39 | Complete a material requisition form when parts are needed |

## Logistics Inventory Control
## Academic and Employability Examples

| | | |
|---|---|---|
| | | Write change orders and document changes |
| | | Document into quality system the defects in parts produced |
| | | Write reports and memos to staff regarding changes in requirements |
| | | Prepare a written schedule of work production for shipping |
| | | Correspond during shift change to relate problems, tasks, etc. of ongoing production |
| | | |
| **Reading** | 3.89 | Read communications written by fellow workers on corrective action to process |
| | | Review customer product specifications and requirements and relate them back to peers |
| | | Read RFIs and their related materials and paraphrase into specific orders/requests of co-workers and clients |
| | | Read material specifications and delivery schedules |
| | | |
| **Math** | 2.93 | Calculate scrap and rework data for reports |
| | | Perform measurements to verify parts meet customer requirements |
| | | Compare invoice to delivery |
| | | Calculate downtime caused by part shortage |
| | | Calculate weights of materials and delivery issues |
| | | |
| **Science** | 2.48 | Knowledge of proper disposal of chemicals |
| | | Understand actual needs of product in relation to the environment it will be used |