

CHAPTER 4: WAREHOUSING ACTIVITIES



Development of the Common Standard Curricula on International Transport and Logistics Basic Training for ASEAN Member States under Sustainable Human Resource Development in Logistics Services

IMPORTANT NOTICE

This Training Material is belonging to ASEAN Copyright Under Development of the Common Standard Curricula on International Transport and Logistics Basic Training Program For ASEAN Member States

***Trainers who intend to use this material shall request ASEAN Secretariat to grant the right of usage directly or through Mr. Somsak Wisetruangrot –AFFA Logistics Institute
somsakwise@outlook.com**

CHAPTER 4: WAREHOUSING ACTIVITIES

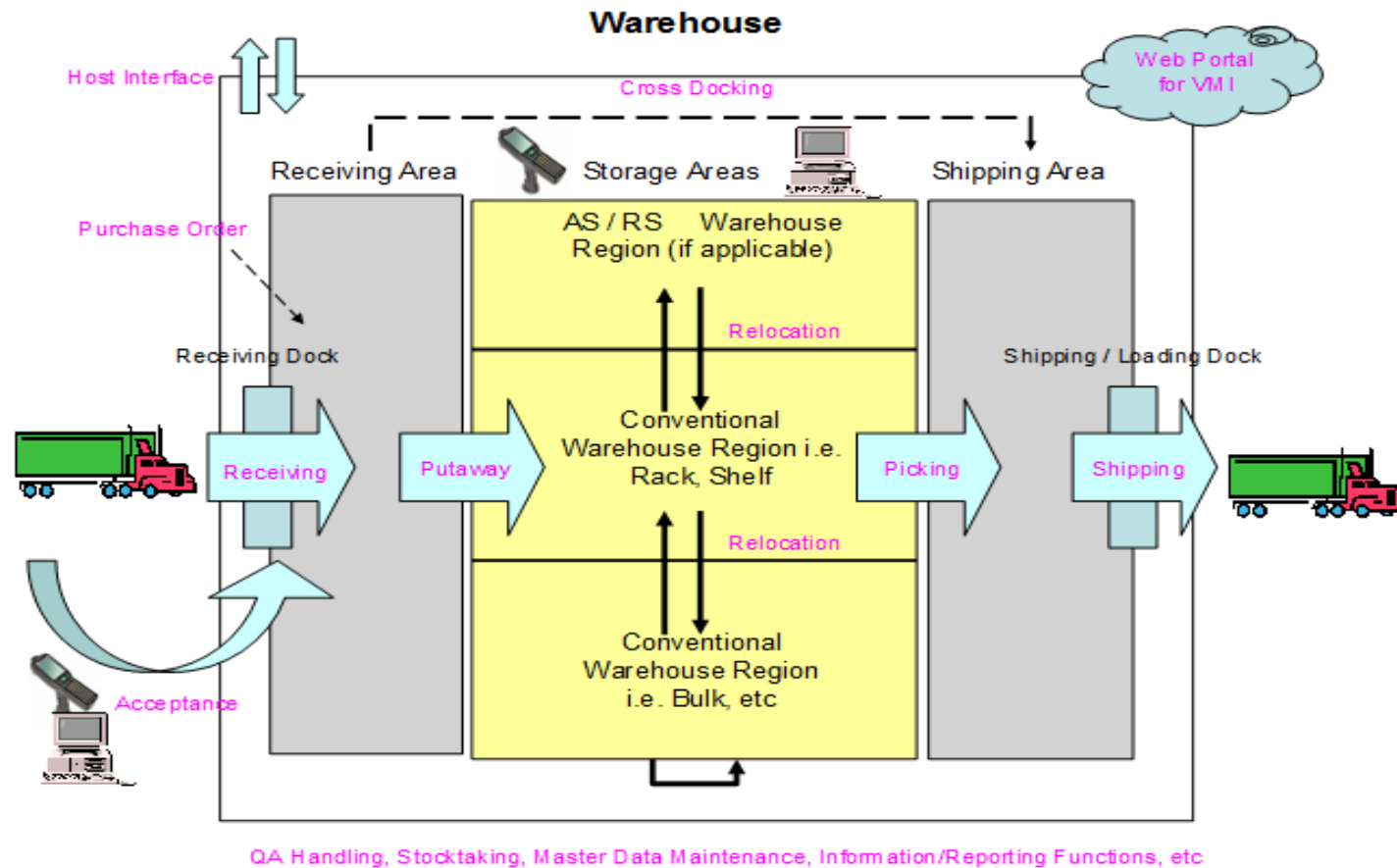
MODULE CONTENT

- Warehousing activities
- Cost components of warehouse activities
- Stock-taking



CHAPTER 4: WAREHOUSING ACTIVITIES

WAREHOUSING FLOW



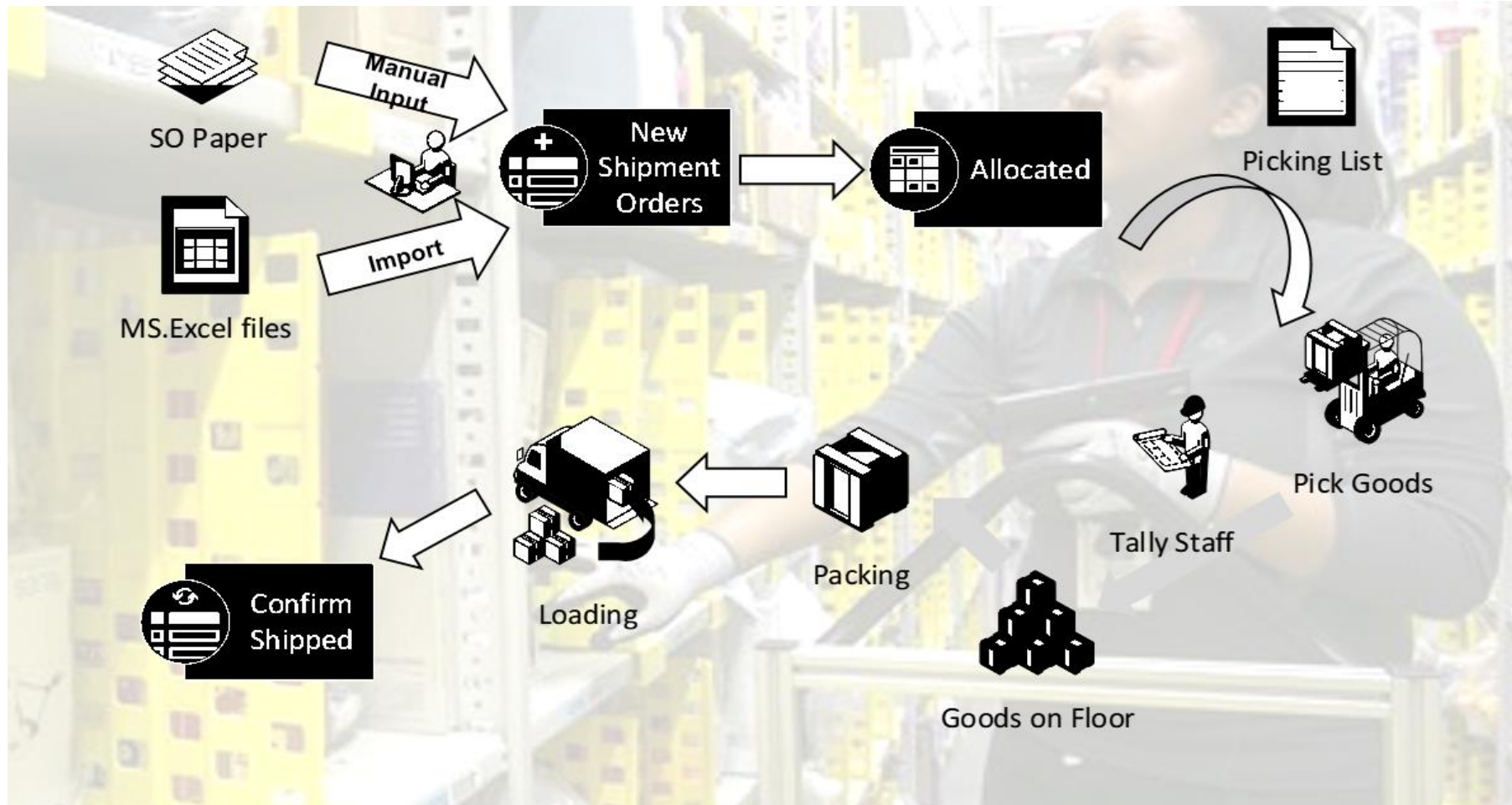
CHAPTER 4: WAREHOUSING ACTIVITIES

INBOUND FLOW



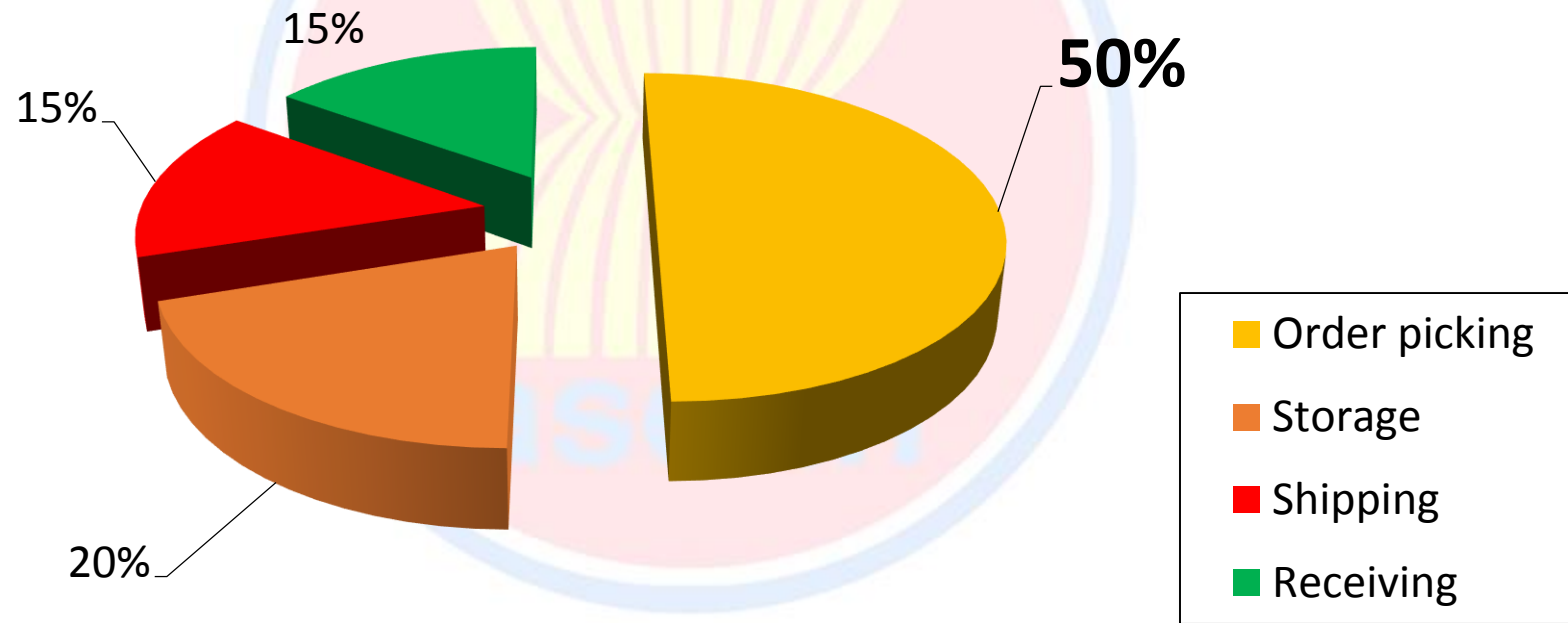
CHAPTER 4: WAREHOUSING ACTIVITIES

OUTBOUND FLOW



CHAPTER 4: WAREHOUSING ACTIVITIES

WAREHOUSING COST BREAK-DOWN



CHAPTER 4: WAREHOUSING ACTIVITIES

WAREHOUSING ACTIVITIES

1. Identification
2. Quality inspection
3. Receiving and Dispatching
4. Put-away
5. Storage
6. Replenishment
7. Order-fulfillment
8. Order-picking
9. Packaging, marking and labelling
10. Shipping
11. Distribution and consolidation
12. Loading and unloading
13. Documentation
14. Housekeeping
15. Management of MHE
16. Assist in Stock-taking

CHAPTER 4: WAREHOUSING ACTIVITIES

RECEIVING (ASN – ADVANCED SHIPPING NOTICE)

Packing List/Invoice									
Sold to: Wayne Engineering Olson Street Canton, ME 04523					Shipped to: Wayne Engineering Olson Street Canton, ME 04523				
Order: 214634 Date: 5 /23 Page: 1 of 1		P.O.: KMO-4930 Ref No.: F.O.B.: West Springfield			Order Date: 5 /23 Date Wanted: 5 /24 Date Shipped: 5 /23				
Terms: 1% 10 Net 30		Shipped via: UPS							
Salesperson: RT		Taken by: LLS		Picked by: JPM		Line Items: 9		Packages: 2	
Line	Part number	Description	Qty. ordered	Qty. shipped	Back ordered	Price	U M	Ext.	Packed in master carton
1	MZ2063214	6-32 x 1/4 Ind Hex Hd m/s Z	100	100		4.66	C	4.66	2
2	MZ2063212	6-32 x 1/2 Ind Hex Hd m/s Z	200	200		4.21	C	8.42	2
3	MZ206321	6-32 x 1 Ind Hex Hd m/s Z	100	100		6.49	C	6.49	1
4	MZ2083212	8-32 x 1/2 Ind Hex Hd m/s Z	100	100		4.81	C	4.81	2
5	MZ2083234	8-32 x 3/4 Ind Hex Hd m/s Z	300	300		5.47	C	16.41	1
6	MZ208321	8-32 x 1 Ind Hex Hd m/s Z	200	200		6.06	C	12.12	1
7	MZ20103212	10-32 x 1/2 Ind Hex Hd m/s Z	200	200		6.10	C	12.20	1
8	MZ20103234	10-32 x 3/4 Ind Hex Hd m/s Z	100	100		6.34	C	6.34	2
9	MZ2010321	10-32 x 1 Ind Hex Hd m/s Z	100	100		7.26	C	7.26	2
Deduct \$.88 if paid by 6 /3						Sub Total		78.71	
						Tax		4.73	
						Freight & Man.		4.28	
						Total		87.72	

- Receiving is the process of handling products into a warehouse and onto a system.
- The best way to receive products is via an Advance Shipping Notice (ASN) from a supplier.
- With this information on system, operators can scan consignment barcodes to bring up the ASN. If the delivery matches the ASN, then goods can be system-received.

CHAPTER 4: WAREHOUSING ACTIVITIES

RECEIVING - UNLOADING

- **Receiving** is the first stage of the warehousing process.
- Goods are received and unloaded from vehicles to warehouse staging area
- Physically accepting material verifying quantity and condition of the material against documents.

CHAPTER 4: WAREHOUSING ACTIVITIES

RECEIVING - IDENTIFICATION

- Items arriving at the warehouse will have some form of document.
- Seldom does the warehouse need to identify the goods.
- In case there are unidentified parts, these should be quarantined and highlighted to Purchasing or end user.

CHAPTER 4: WAREHOUSING ACTIVITIES

RECEIVING - INSPECTION

Different ways of goods inspection upon receiving:

- Blind count (without packing list)
- Visual Inspection
- Batch Inspection
- Random inspection
- 100% Inspection
- Laboratory Test Inspection

CHAPTER 4: WAREHOUSING ACTIVITIES

PUT AWAY



Directed Putaway		
Putaway Cont.: 000010		
Location	Part Nbr	Qty
02010104	C007	20,000
02010102	HTC	10,000
01010104	Tower	30,000



- Put-away is the process of allocating products to assigned storage locations in the warehouse.
- The process commences when operators accept the put-away task from ERP or WMS, and then scanning the relevant barcode of goods to be put away.
- At the location, the operator will either scan the relevant stock location barcode, or manually confirm that the correct location has been found, then place the goods into the storage location.

CHAPTER 4: WAREHOUSING ACTIVITIES

STORAGE

Random Location System

- Most popular and most economic.
- When goods arrived, goods are placed in vacant compartment.
- There higher utilization of storage space.
- Cost is relatively lower.

Fixed Location System

- Each item has a fixed storage space for the life cycle.
- Space allocated cannot be used for other items.
- Good for static growth companies.
- Cost is higher.
- Humans prefer system because of familiarity without need to refer to documents or computer.

CHAPTER 4: WAREHOUSING ACTIVITIES

ORDER PICKING



Pick Full Pallets			
Batch	Loc	qty	
27083/114	DEFAULT	500.000	1
27114	DEFAULT	500.000	1
27114	DEFAULT	500.000	1
27114	DEFAULT	500.000	1

393191950000001061
 Ord: 100 Pck: 50
 F4-Short pick ESC-back
 SSCC: 393191950000001061
 Part Nr: TRIDC480-100
 Lot/Batch: 27083/114
 Quantity: 500.000

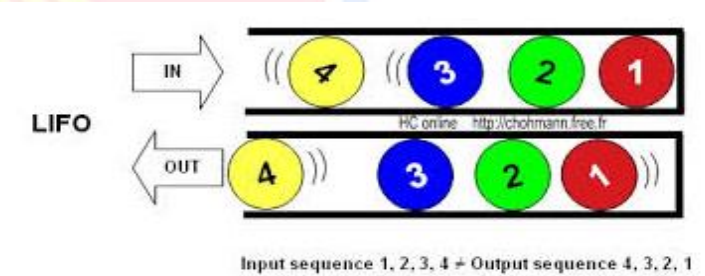
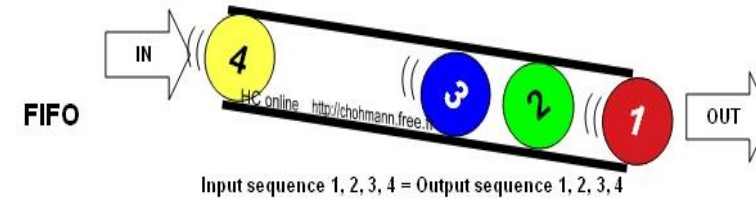
- Order picking is the process of picking the products from storage locations to fulfill an order
- There are different picking methods:
 - Discrete picking
 - Wave picking
 - Batch picking
 - Zone picking
- Picking is the most resource-consuming process (accounts for 50-60% of warehousing resources)

CHAPTER 4: WAREHOUSING ACTIVITIES

ORDER PICKING PRINCIPLES

Rules Governing Picking

- FIFO (First In - First Out)
- LIFO (Last In – First Out)
- FEFO (First Expired - First Out)



CHAPTER 4: WAREHOUSING ACTIVITIES

TYPES OF ORDER PICKING

- **Discrete (or single) order picking:**

The most common type of order pick. Picking is for only one order at a time)

- **Zone picking (or pick and pass):**

Picking all of the SKUs located in the zone for each order. In the event SKUs are located in multiple zones, the order will be completed zone by zone.

CHAPTER 4: WAREHOUSING ACTIVITIES

TYPES OF ORDER PICKING (CON'D)

- **Batch picking:**

Multi order picking at a time. One SKU at a time.

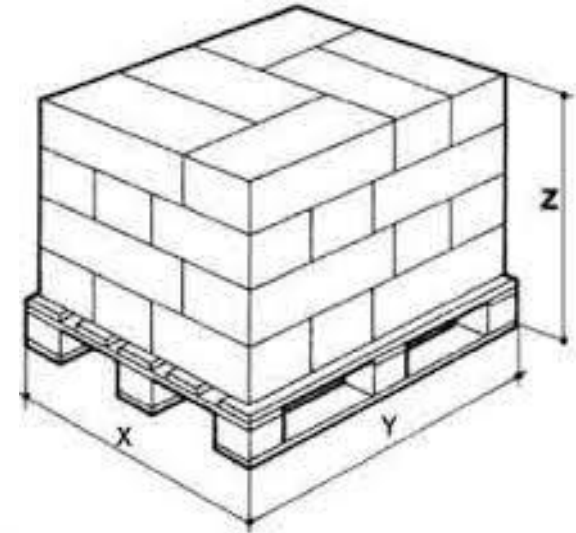
- **Wave picking:**

Wave picking is very similar to discrete picking in that one picker picks one order, one SKU at a time. The main difference is the scheduling window. In discrete picking, there is not a scheduling window whereas in wave picking there is. Orders may be scheduled to be picked at specific times of the day.

CHAPTER 4: WAREHOUSING ACTIVITIES

UNIT LOAD

- Unit load combines individual items or items in ISO (International Standards Organization) container into single "units" that can be moved easily with a hand pallet jack, forklift or container crane.
- Unit load ensures transport and storage cube is fully used
- Unit load allows stacking which provides load stability



CHAPTER 4: WAREHOUSING ACTIVITIES

SHIPPING MARK EXAMPLES



CHAPTER 4: WAREHOUSING ACTIVITIES

PREPARING FOR SHIPMENT

- Packing for Shipment
- Preparing for Shipping
- Confirmation of Shipment



CHAPTER 4: WAREHOUSING ACTIVITIES

PACKING & PACKAGING



FORST SERVICE CTS GmbH
Sonntrane 13 • CH 9323 Strinach • Switzerland

PACKINGLIST

by vessel: 05 September 1997 -
European beech lumber, steamed, square edged, pr. 4 side clear, KD 14 - 17 %, width: 10 cm and up (4" and up) net tally measurement after kiln dried

bdl no:	thickness (mm)	length (m)	pieces	cbm
801	2 1/2"	2.80	56	1.260
802	2 1/2"	2.20	55	1.090
803	2 1/2"	2.70	60	1.335
804	2 1/2"	2.00	75	1.194
805	2 1/2"	2.10	75	1.265
806	2 1/2"	2.30	68	1.255
807	2 1/2"	3.00	63	1.792
808	2 1/2"	3.10	65	1.588
809	2 1/2"	2.70	77	1.379
810	2 1/2"	2.10	71	1.119
811	2 1/2"	2.70	65	1.685
812	3.00	64	1.769	
813	2.20	78	1.541	
814	2.20	78	1.343	
815	2.20	72	1.284	
816	2.60	29	0.642	
	2.70	46	1.071	
817	2.60	67	1.412	
818	3.00	75	1.888	
819	3.00	67	1.817	
820	3.00	66	1.807	
821	1.90	48	0.624	
822	2.50	70	1.532	
823	2.90	72	1.812	
824	2.60	2	0.048	
	2.90	34	0.889	
Total:			1601	34.481

- Packaging can be described as a coordinated system of preparing goods for transport, warehousing, logistics, sale, and end use.



CHAPTER 4: WAREHOUSING ACTIVITIES

STAGING



- Staging is the process of storing the goods in the designated areas (staging area) after receiving or before shipping
- Staging area is known as the interim storage.

CHAPTER 4: WAREHOUSING ACTIVITIES

SHIPPING / DISPATCHING



- Dispatching is the process of shipping the stock out of the warehouse and loading on trucks.

CHAPTER 4: WAREHOUSING ACTIVITIES

SHIPPING / DISPATCHING (CON'D)

1. Transportation checking
2. Loading by Route plan
3. Checking and Docs
4. Loading Manifest
5. Handover and sign Docs
6. Entry / Go out permit



CHAPTER 4: WAREHOUSING ACTIVITIES

SHORTAGE MANAGEMENT

It may not be possible to supply all the items that are requested:

- Warehouse have run out of stock
- Awaiting delivery of the replenishment stock
- May be a new item, not previously stocked, that is on order but which has not yet been received.

CHAPTER 4: WAREHOUSING ACTIVITIES

TIPS TO MAXIMIZE EFFICIENCY & PRODUCTIVITY OF WAREHOUSE OPERATION

1. Reduce Travel Time
2. Implement Training Programs
3. Maintain Real-Time Inventory Visibility and Management
4. Schedule Regular Maintenance of Equipment
5. Implement Lean Warehouse Techniques

CHAPTER 4: WAREHOUSING ACTIVITIES

DEFINITION OF STOCK-TAKING / CYCLE COUNT

STOCK TAKING:

- The activity of counting and checking of on-hand inventory (stock)

CYCLE COUNT:

- A form of stock-taking
- Counting a small amount of inventory on a specific day without having to carry out the entire stock-takings
- Fast moving and/or more expensive items are counted more often

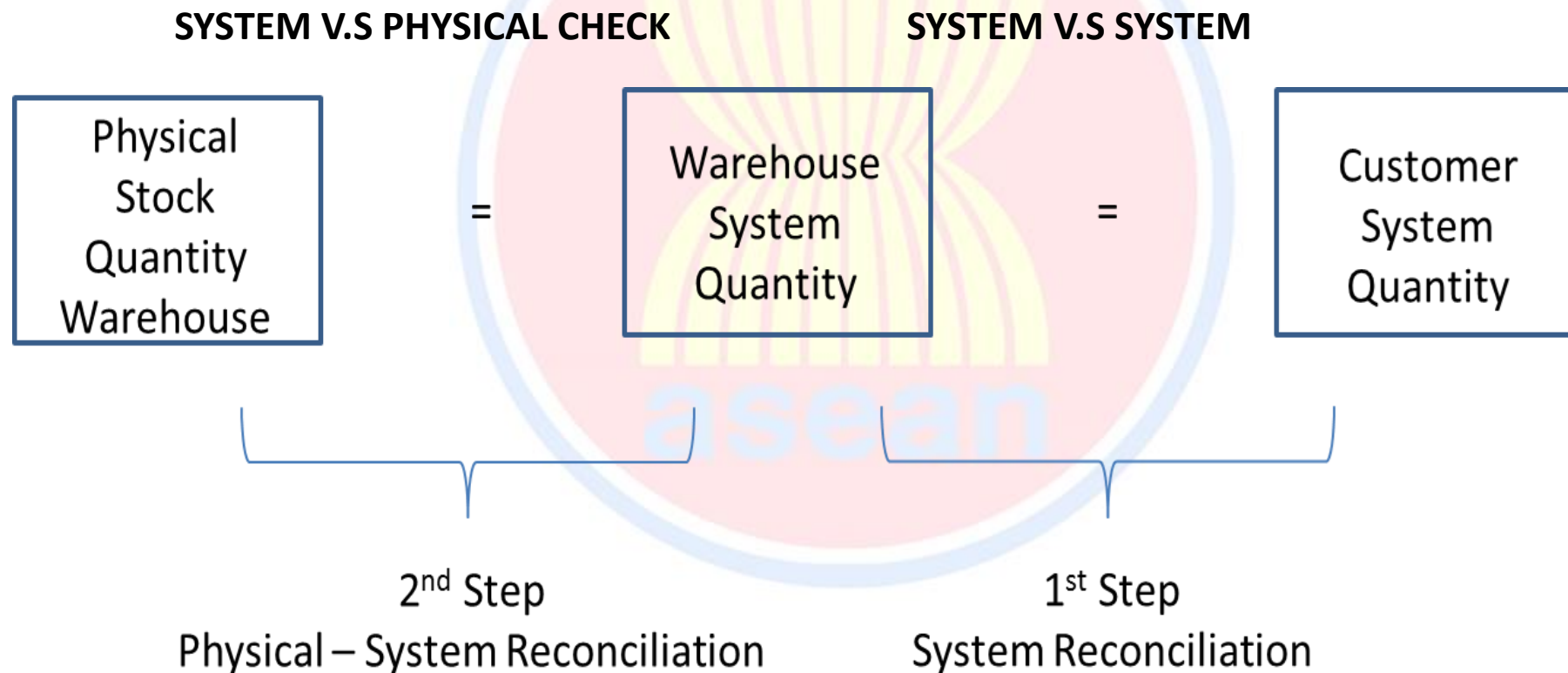
CHAPTER 4: WAREHOUSING ACTIVITIES

PURPOSE OF STOCK TAKING / CYCLE COUNT

- To verify the accuracy of stock records.
- To support the value of stock shown in the balance sheet by physical verification.
- To disclose the possibility of fraud, theft or loss.
- To discover stock shrinkage issues

CHAPTER 4: WAREHOUSING ACTIVITIES

STOCK RECONCILIATION METHODS



CHAPTER 4: WAREHOUSING ACTIVITIES

STOCK-TAKE FREQUENCY

- Periodic
- Continuous



CHAPTER 4: WAREHOUSING ACTIVITIES

STOCK-TAKE - PERIODIC

- By the periodic method of stocktaking, the whole of the stock-take is usually done at the end of FY.
- Theoretically, stock should be taken at the close of the business on the balance sheet date.
- The stocktaking need not be done only once a year. It can be twice or more than twice a year

CHAPTER 4: WAREHOUSING ACTIVITIES

PROS & CONS OF PERIODIC STOCK-TAKE

Advantages:

- Done only once a year and thus impact the operation only once a year.
- Time and labour cost saving
- A simpler system to administer

Disadvantages:

- The entire warehouse operation is disrupted
- This will impact the production and external customers' operations. This can be overcome by temporary measures of manual procedures.
- If major discrepancies cannot be reconciled, then the stock-take can be extended and might aggrive the production and customers.

CHAPTER 4: WAREHOUSING ACTIVITIES

METHOD OF STOCK TAKING - CONTINUOUS

- Continuous stocktaking is the method whereby stock is taken continuously throughout the year in accordance with a pre-determined program so that each item is physically verified at least once in the course of the year, or more frequently if required.
- It can only be done if complete detailed stock records are kept showing receipts, issues and balances on hands.

Item Class	Frequency
A	Very Frequent; every 3 months
B	Frequent; every 6 months
C	Less Frequent; every 9 months

CHAPTER 4: WAREHOUSING ACTIVITIES

PROS & CONS OF CONTINUOUS STOCK-TAKE

Advantages:

- No closure of normal functioning of the operation
- Results are produced quickly. Stock discrepancies can be identified earlier than the annual stock-take.
- Important items can be checked as frequently as possible.
- Increase accuracy of accounting records

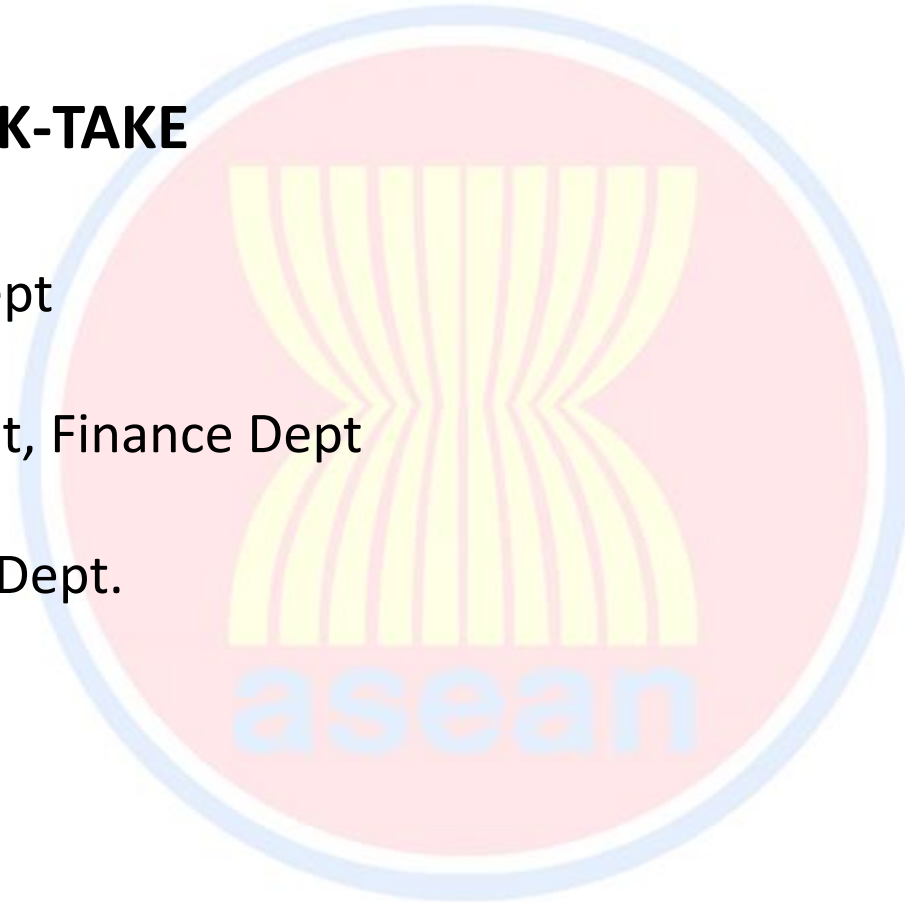
Disadvantages:

- At the end of the financial year, the integrity of the stocks checked in the early part of the year could be questionable (if any discrepancy).
- Difficulty to get staff to stay back during lull periods to carry out stock-take.

CHAPTER 4: WAREHOUSING ACTIVITIES

PARTY INVOLVED IN STOCK-TAKE

- Purchasing Dept
- Inventory Dept, Finance Dept
- Warehousing Dept.



CHAPTER 4: WAREHOUSING ACTIVITIES

PRE STOCK-TAKE ACTIVITIES

- **Purchasing Dept**
 - The Purchasing Dept will inform the suppliers that the stock take will take place on specified dates. Suppliers are forewarned not to deliver unless it is very urgent.

CHAPTER 4: WAREHOUSING ACTIVITIES

PRE STOCK-TAKE ACTIVITIES (CON'D)

- **Inventory Dept, Finance Dept**
 - The department will inform the internal users that there will a stock taking exercise and there will be no issue or receipts.
 - Users are advised to plan their activities to ensure that there are sufficient stocks during the freeze period.
 - The database will be frozen and there will no longer be any movement of stocks. Physical movements are allowed but these will be manually recorded.

CHAPTER 4: WAREHOUSING ACTIVITIES

PRE STOCK-TAKE ACTIVITIES (CON'D)

- **Warehousing Dept.**
 - The warehouse will get its staff to be briefed on their role.
 - They should not be involved in the counting but assist in bringing down the pallets for counting if stock takers cannot access the location.

CHAPTER 4: WAREHOUSING ACTIVITIES

STOCK-TAKE EXECUTION

- One man must be in control of the entire stocktaking eg Financial Controller.
- Two persons should be involved in the counting; one to physically count while the other to record.
- All suppliers should be informed of the stocktaking and no receiving is to be done.
- Production and internal customers are informed and issues should not be done for the period of closure.

CHAPTER 4: WAREHOUSING ACTIVITIES

STOCK-TAKE EXECUTION (CON'D)

- The warehouse should be closed. All issues and receipts should be reduced to a minimum.
- Goods should be segregated according to goods which are to be counted and those which are not to be counted.
- Computerized database must be frozen to disallow stock movements.
- External auditors and internal auditors are to be informed of the dates of stocktaking.

CHAPTER 4: WAREHOUSING ACTIVITIES

STOCK-TAKE EXECUTION (CON'D)

- On day of stocktaking, the person-in-charge is to gather all counters and checkers for a briefing, explaining the policies and procedures of stocktaking.
- If IT tools are not used, stocktaking sheets are to be given to counter and checker to carry out stocktaking. After counting and checking, both should sign on document and return to the person-in-charge.
- If IT tools are used, then the information should be entered into the hand held device.

CHAPTER 4: WAREHOUSING ACTIVITIES

POST STOCK-TAKE ACTIVITIES

- After stocktaking, the person-in-charge is keyed into the system or checked against records.
- The advantage of using IT to carry out stock take is obvious.
- When IT is used, there is no necessity to key in the data since the automatic data collection will shorten the stock taking period.
- Discrepancies are highlighted immediately reducing down time of warehouse.
- Reconciliation can be carried out earlier than if a manual system is used.

CHAPTER 4: WAREHOUSING ACTIVITIES

INVESTIGATION OF DISCREPANCIES

- When the amount of stock found by physical verification does not tally with the balance of the stock records, there is a **discrepancy**.
- If the stock found exceeds the recorded figure, there is surplus.
- Conversely if the physical stock is less than the book value, there is deficiency.
- Discrepancies can be classified as:
 - Major
 - Minor

CHAPTER 4: WAREHOUSING ACTIVITIES

STOCK ADJUSTMENT

- The process will continue until the discrepancy is reduced to zero to a value acceptable to the management.
- The book value is then adjusted to the physical value.
- The final step remains where the database is unfrozen and normal purchasing and inventory activities can proceed.