

OTC Shipping Process



Lesson Objectives

- Shipping
 - Purpose
 - Use
 - Challenges
- Shipping – An Overview
- Outbound Delivery
- Delivery-Associated Functions
 - Picking
 - Packing
 - Post Goods Issue
 - Delivery Document Structure
 - Copy Controls
- Delivery Type



Lesson Objectives

- Delivery Type - Controls
- Delivery Item Category
- Delivery Item Category – Controls
- Delivery Processing – Create
- Delivery Header Views
- Delivery Item Views
- Outbound Delivery-Environment
- Post Goods Issue(PGI)
- Copy Controls
- Outbound Delivery Monitor
- Transaction Codes
- Additional Info



Sales and Distribution

Shipping



- Shipping is the basic process of transporting goods and cargo
- Shipping activities follow sales activities
- Shipping can include a wide range of activities such as selection of items, packing them and printing the shipping documents like packing slip, delivery document
- Delivery document is the source of all shipping activities



Purpose



- Shipping is an important part of the logistics chain in which guaranteed customer service and distribution planning support play major roles
- All information regarding shipping is stored in a delivery document
- When you create an outbound delivery, you initiate shipping activities like picking, packing, transportation scheduling and goods issue which also helps in monitoring the status of these shipping activities



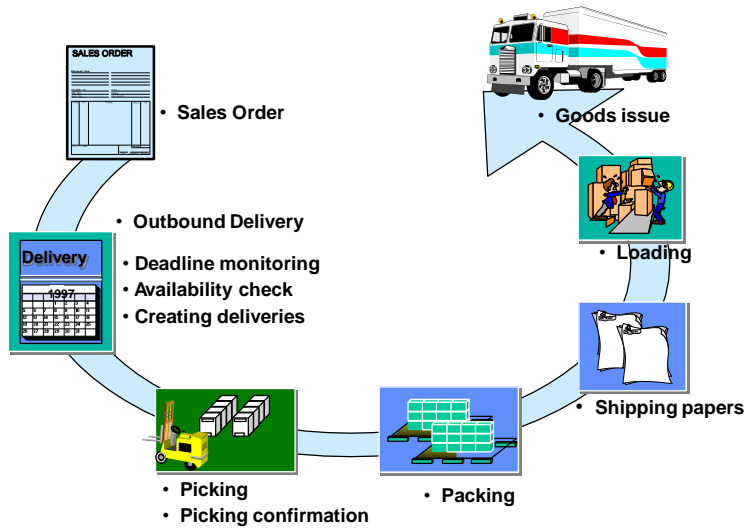
- Creating and processing of outbound deliveries
- Monitoring of goods availability and processing outstanding orders
- Planning and monitoring of work lists for shipping activities
- Monitoring of deadlines for reference documents due for shipping(customer orders and purchase orders, for instance)
- Packing of deliveries
- Printing and distribution of shipping documents
- Updating of inventory and financial accounts

Challenges



- To ensure material availability, customer credit worthiness, optimum transportation requirements
- Picking the right quantity of materials
- Meeting complex packing requirements
- Updating appropriate inventory & finance accounts

Shipping – An Overview





Outbound Delivery

- Shipping Activities are initiated by the creation of the outbound delivery
- An outbound delivery always belongs to one Shipping Point
- An outbound delivery can be created:
 - Without reference to an order
 - With reference to an order through delivery due list
- The relationships between order and deliveries include:
 - Complete Delivery: One Order - One Delivery
 - One Order - Many Deliveries
 - Many Orders - One Delivery



Delivery-Associated Functions

- Availability check & TOR
- Partner determination
- Route Determination
- Credit Check
- Text Determination
- Material Determination
- Listing / Exclusion
- Output Determination
- Transportation planning



Picking



- Picking is the process of selecting the correct quantity of goods for shipping on schedule to fulfill a customer order
- Standard SD Shipping (SD-SHP) picking functionality includes:
 - Picking on Demand: This is the manual process of entering a picking quantity on the delivery document itself
 - Printing of Picking Lists (a list of all delivery items that are due to be picked). You can generate Individual pick lists and collective pick lists
- Because picking is carried out from a specific storage location, you need to identify a storage location at delivery time for delivery-relevant materials. The storage location is where the goods are issued from stock

Packing



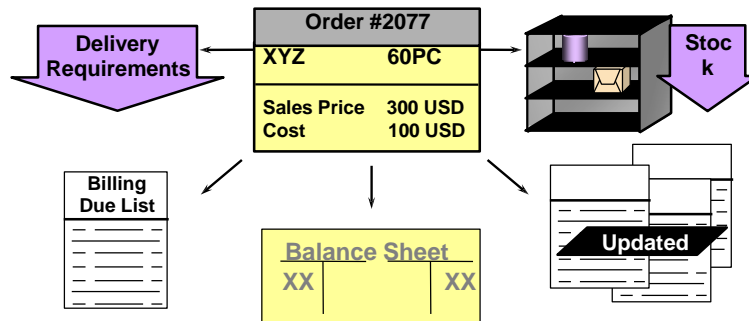
- Packing is the process of combining delivery items into packaging materials
- Packaging materials are materials used for packing or transporting goods
- Packing instructions can be entered into sales orders and scheduling agreements. Based on this information, a packing proposal is created in the delivery
- For each packaging material , a material master with material type VERP has to be created



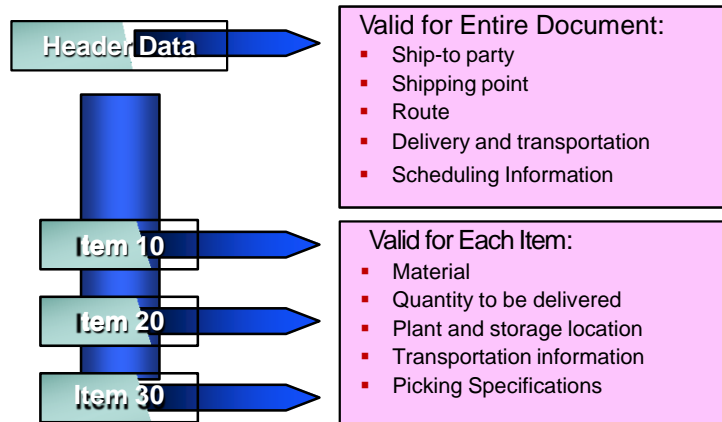
Post Goods Issue



- Posting the goods issue for a delivery:
 - Reduces warehouse stock
 - Posts value changes in balance sheet accounts for inventory accounting
 - Reduces delivery requirements in materials planning
 - Updates document status in relevant sales documents
 - Generates work list for billing (billing due list)



Delivery Document Structure



The delivery document does not contain schedule lines. Each schedule line in the sales document can become an item in the delivery document.



Copy Controls

- Copy controls helps minimizing document flow for example Billing Document
- Type from a Delivery Type e.g. Invoice(F2) <- Delivery (LF)

	Target Billing type	Source Del. type
Header	F2	LF

1) Which documents may be used as a reference for billing?

2) Determination of :

- Foreign Trade data
- Allocation Numbers
- Reference Numbers
- Item Numbers

	Target Billing type	Source Del. type	Source Item Cat.
Item	F2	LF	TAN

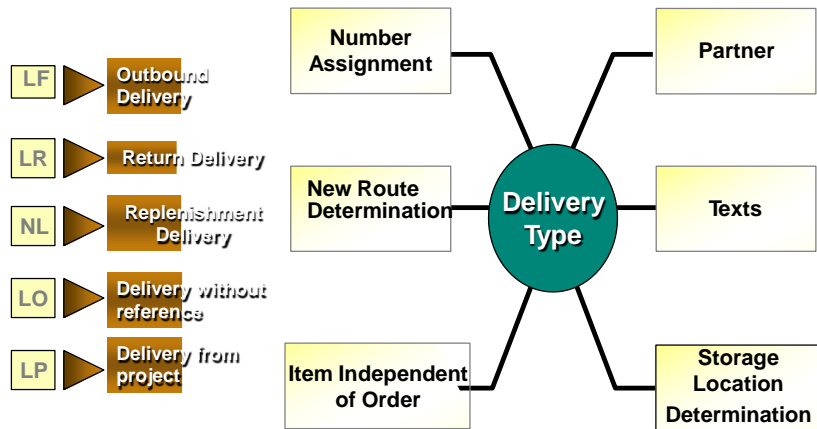
1) Which quantity should be invoiced (order or delivery quantity) ?

2) Pricing and exchange rate ?

3) Updating quantity and value in referencing document

4) Should pricing be carried out again or should prices be copied from sales order?

Delivery Type



Delivery Type - controls



Delivery type controls the delivery information at the header level

Change View "Delivery Types": Details

New Entries

Delivery Type: L.F. Outbound Delivery

Document Cat.: J

Number Systems

NR of Int. Asst: 1 **No. Range Assignment**

NR of Ext. Asst: 10

ItemNoIncrement: 10

Order Reference

Order Required: X Sales order required

Ult Ord.Ty.: DL Order Type Sched: 202 Order w.indep.item

Stor. Loc. Rule: NALA

TextDeterminProc.: 02

OutputDet.Proc.: V10000

Output Type: LD00

Doc.statu.group

Application: V2

Route Determin.: B New route determination with check

PartnDet.Proc.: L.F. **Partner determination procedure**

Rescheduling: ☐

Distribtn Mode: Distribution Control By Item

Automatic Packing: ☐ Gen. pack.matl item

Transaction Flow

Screen seq.grp: L.F. Standard Text

Storage Location determination rule

Text determination procedure

Automatic Packing

Output determination procedure

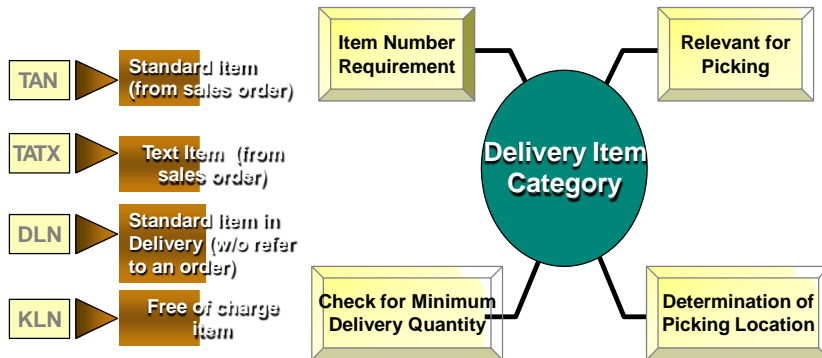
Route determination rule

IMG->LE ->Shipping ->Deliveries ->Define delivery types

Delivery Item Category



The item category of the order item is transferred to the delivery item



Delivery Item Category-Controls



Change View "Delivery item categories": Details

New Entries

Item Category: TAN Standard Item
Document Cat.: Delivery

Material/Statistics

☒ Mat.no. V allowed
ItemCat.stat.group: ☐ Stk determ.rule: ☐

Quantity

Check quantity 0: A Note about the situation Avail/Off: ☐
Check minimum qty: A Note about the situation Rounding: ☐
Check overdelivery: ☐

Warehouse Control and Picking

☒ Relevant for picking **Relevant for Picking**
☒ StLocation required ☐ Picking control **Picking Control**
☒ Determine Sluc ☐ AutoBatchDetermin **Automatic Batch Det.**
☐ Don't chk st. loc.
☐ No batch check

Transaction Flow

TextDeterminProcedure: 02 Standard Text:

- The picking location can be determined automatically in the delivery for each line item.
- The criteria used are:
 - Shipping point
 - Delivering Plant
 - Storage condition



Delivery Processing - Create

- Pre-requisites to create a delivery with reference to an order are:

Sales Order 5021	
Sales Order 5021	
Header	
<ul style="list-style-type: none">No delivery BlockAt least one item is due for delivery	
Item/schedule lines	
<ul style="list-style-type: none">The schedule line is relevant for deliveryNo delivery blockMaterial is availableItem has not been completely deliveredItem is complete (no missing data)	

Delivery Header Views



SAP

Outbound Delivery 80000570 Display: Header Details

Display <-> Change

Other Outbound Delivery

Document Flow

Overview

Pack

Incompleteness

More v

Exit

Ship-to party: 10000 US Customer 1000 / PO Box 10019 / New York NY 40000

Processing

Picking

Loading

Shipment

International Trade

Financial Processing

Administration

Partner

Texts

Conditions

>

Dates

Picking: 25.09.2019 05:30

Billing Date: 25.09.2019

Trans. Planning: 25.09.2019 05:30

Billing Date:

Loading: 25.09.2019 05:30

Planned GI: 25.09.2019 05:30

Actual GI Date: 00:00

Delivery Date: 25.09.2019 06:30

Scheduling

Overall Status

Document Status: Checked

Picking: Not Yet Picked

TransPimg: Not Rel.Transp.Plan.



Delivery Header Views

Important Fields	Screen	Application
Dates and Overall Status	Processing	This screen gives the details of dates for picking, loading, planned GI and delivery date. Also it shows the overall status of the activities such as pick, pack and goods issue.
Warehouse, packages, weight and volume	Picking	This screen gives the details of ware house no. splitting indicator, no. of packages, gross weight and volume.
Loading date	Loading	This screen gives details related to the loading.
Shipping point, Route and Incoterms	Shipment	The shipment screen depicts the shipment related info such as mode of transport, means of transport, bill of lading etc.
Weights and volumes	Loading	You will find the picked quantity and volume for every delivery item
Billing block, Risk management	Financial processing	It gives the status of the billing document for billing block, billing status etc. Also it gives the details of financial document number
Partner	Partner	Data on this screen includes the number of the sold to party, credit representative and the ship to party
Shipping Instructions	Text	Text related to shipping such as terms of delivery, payment and shipping instructions can be maintained in text for printing on the documents.
Shipping cost	condition	The shipping cost related pricing can be captured in the condition screen.

Delivery Item Views



Outbound Delivery 80000570 Display: Item Details

Display <-> Change Other Outbound Delivery Document Flow Overview Header Details Pack More ▾ Exit

Item: 10 K < > X Item Category: TAN Standard Item

Material: FG000000000000001 PVC Pipes X22

Processing **Material** Batch Split Picking Loading and Shipment Financial Processing Texts Conditions Predecessor Data > ...

Customer-specific data

Item Descr.: PVC Pipes X22

Cust.material:

Engin. Change:

BOM expl.number:

Alt.Prodht.:

Attributes

Mat.freight grp: Stor.conditions:



Delivery Item Views

Important Fields	Screen	Application
Item status & Quality Inspection	Processing	The item status for picking, packing, good issue & billing, the inspection lot can viewed in the processing screen
Material Attributes	Material	This screen shows the attributes of the material such as storage condition, transportation group, loading group, and shelf life expiry date etc.
Batch	Batch Split	This gives the details of batch determination functionality batch, valuation type, delivery quantity for each item.
Quantities & weights	Picking	This gives details such as delivery quantity, picking quantity , conversion & weight and warehouse related information.
Ship to party	Loading & shipment	The item wise details of ship to party & receiving point are available in this screen
Billing Block, Cost centre, Profit Centre	Financial processing	The status of billing document, billing block and account assignment information can be views in this screen.
Movement type	Administration	The organization data such as distribution channel, division and control data like movement type , reason for movement related info can be views in administration screen.
Reference document details	Predecessor data	The stage that the processing of a delivery item has reached is displayed on this screen. You will find the information such as the order number, the open order quantity and the quantity which has already been delivered

Outbound Delivery - Environment



Options in Material Master Data	Purpose
Environment -> Ship to Party	Ship to party details (customer master) can be displayed during outbound delivery processing
Environment -> Material master data	With this menu path Material master for the particular item can be directly viewed from the transaction
Environment -> Stock	This search will directly takes you to MMBE transaction for stock display at plant & storage location level
Environment -> Changes	When changed deliveries are saved to the database, the system automatically creates change-documents. In this document, the system records changes to header or item data, partner roles, status, and to management data.
Environment -> Document flow	You reach the Document Flow screen for the entire document. All existing preceding and subsequent documents for the order are listed here
Extras -> Delivery Output	The Output from Deliveries screen appears, which contains a list of all outputs that meet your selection criteria.
Extras -> Serial Numbers	Serial numbers are used to uniquely identify the individual material. In the dialog box that the system displays during delivery processing, you can either select from serial numbers for which you have already created master records or you can manually enter new numbers.
Edit -> Incompleteness	A screen with the incompleteness list for the selected delivery appears. This screen lists the data that the system still requires to complete the document.
Outbound delivery -> Delete	A screen with the incompleteness list for the selected delivery appears. This screen lists the data that the system still requires to complete the document.

Post Goods Issue(PGI)



Document Flow

Business Partner 0000010000 US Customer 1000

Document	On	Time	Status
Standard Order 0000001062	09.12.2019	16:51:34	Completed
Outbound Delivery 0080000603	09.12.2019	16:52:18	In Process
Picking Request 20200728	28.07.2020	13:36:41	Completed
GD goods issue/delvy 4900001161	28.07.2020	13:36:43	Complete

- When you post goods issue for an outbound delivery it generates the material document and accounting document

Accounting entry after post goods issue

Data Entry View

Document Number: 4900001161 Company Code: 1000 Fiscal Year: 2020

Document Date: 09.12.2019 Posting Date: 27.07.2020 Period: 7

Reference: 0080000603 Cross-Comp.No.: Ledge Group:

Currency: USD

Co.	Item	Key	S.	Account	Description	Amount	Curr.	Tx	Cost Center	Profit Ctr
1000			S	5400	Inventory - Finished	2.500,00	USD			PCAB01US
			S	520080	Inventory Change - S	2.500,00	USD			PCAB01US

Movement type

Copy Controls



Display View "Header": Details

Dialog Structure: Header (selected), Item

Target delivery type: W00 WMS Outbound Deliv.
From SalesDoc Type: DL Order Type Sched.Ag.

Conditions:
Order requirements: 000
Combination requirmt: 000

Data Transfer:
Header Data: 301 Header w/o Order
Header Data Ext. Sys: 0
Handling Units: 000

Control Data:
☐ Copy item number

Copy item no. from the preceding document

Display View "Item": Details

Dialog Structure: Item (selected), Header

Tgt Del. Type: L/F Outbound Delivery

Source:
Sales doc. type: GR Standard Order
Item category: ALXN ALE Standard Order

Conditions:
Order requirements: 101 Item

Data Transfer:
Item Data: 101 Item
Item Ext. System: 0
Business data: 2 Business Data

Control Data:
☒ Update document flow Pos./Neg. Quantity

Update Document Flow

Outbound Delivery Monitor



- The delivery monitor is a one stop application for collective processing of deliveries & for obtaining information on general shipping processing

The screenshot shows the SAP Outbound Delivery Monitor application. At the top, there is a navigation bar with the SAP logo and the title "Outbound Delivery Monitor". Below the navigation bar, there are several tabs: "Get Variant...", "Display Variants", "Only Inbound Deliveries", "All Deliveries", and "More". The "All Deliveries" tab is currently selected. The main area of the application is titled "Outbound Deliveries" and contains a "Selection Type" section. This section lists several selection types, each with a corresponding button: "For Checking", "For Distribution", "For Picking", "For Confirmation", "For Loading", "For Goods Issue", "For Transport Planning", and "List Outbound Deliveries".



Transaction Codes

OVLK	Define Delivery Types
OVLP	Define Item categories for Deliveries
VN01	Define Number Ranges for Deliveries
VTLA	Specify Copy Control for Deliveries
VOFM	Define Copying Requirements
VOFM	Define FORM Routines for Data Transfers
VL01N / VL02N / VL03N	Create / Change Display Delivery
VL06O	Outbound Delivery Monitor
VL09	Cancellation / Reversal of PGI
VL10B	Collective processing of Delivery against Purchase Order
VKM5	Releasing block against delivery document



Additional Info

- Prerequisites goods issue reversal are :
 - Like the goods issue posting, the goods issue reversal is only possible for the entire delivery. You cannot reverse goods issue for only part of a delivery
 - If the delivery has already been billed partially or fully, the billing document must be cancelled before the reversal of goods issue
- The delivery process can be more automatic (less key stroke based!) by making Item Categories not relevant for picking and by defaulting an issue storage location



Cancellation of a goods issue for a delivery results in the following:

- It creates a cancellation document that adopts the quantities and the valuation from the
- original goods issue document, and also executes the respective value and quantity posting to stock
- The goods movement/goods issue status of the delivery is reset to Not yet started. In this way, the delivery can be processed further as required
- Delivery requirements are reset
- Credit limit are reset
- Document flow is updated with a note of cancellation



Additional Info

- Various Movement Types during Goods issue are:
 - 601 – Goods issue for delivery
 - 602 – Reversal of Goods issue
 - 641 – Transfer stock in Transit
 - 643 – Transfer to cross company
- Relevant Tables for Outbound delivery:
 - LIKP: SD Document: Delivery Header Data
 - LIPS: SD Document: Delivery Item Data



Additional Info

- Requirements for automatic creation of packing items include:
 - The shipping unit must be assigned to a plant.
 - The packing material must have inventory.
 - The system must automatically propose an item category.
 - (Note: PACK must be entered in the item usage in item category determination for deliveries.)
- Two different ways you could add item to a delivery include:
 - Adding items from another order onto the delivery
 - Can manually enter material items onto a delivery



- Generally for picking, Lean Warehouse inventory management functionality is used where in the material is stored in one storage bin (Fixed bin storage). The storage bin number has no functionality behind it, it is captured on the basis of Storage view of the Material master as a piece of text
- Normal Warehouse Management (MM-WM) uses random bin storage location i.e. a material can be stored in multiple storage locations
- In either cases, Picking is performed through Transfer Orders. By creating a transfer order, the system updates the picking quantity to equal the delivery quantity

Additional Info



- A Pick List is a list of all delivery items that are due to be picked generate individual pick lists as well collective pick lists.
- Packing instructions can be entered into sales orders and scheduling agreements. Using this a packing proposal is created in the delivery. This requires a special copy routine be specified in copy control. The delivery packing proposal can be changed



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