

Management Accounting

7th Edition

- Link 18.A –
Job Order Costing:
WEIXDORF Ltd.

Data Sheet for WEIXDORF Ltd.

Classification: Production;
 Accounting period: 20X3;
 Issued capital: 5,000.00 EUR;
 Bank loan: 50,000.00 EUR; interest 2.5 %/a; pay-off: 1,000.00 EUR/a;
 P, P, E ice cream: 20,000.00 EUR;
 depreciation: 5,000.00 EUR/a; P, P, E filling: 14,500.00 EUR; depreciation: 2,900.00 EUR/a; salvage value: 2,900.00 EUR (filling machine);
 Purchase containers: 43,200.00 EUR;
 Purchase milk: 84,000.00 EUR; purchase Fruits: 24,000.00 EUR;
 Labour: 270,000.00 EUR/a; thereof: administration: 70,000.00 EUR/a / production: 200,000.00 EUR/a;
 Total production quantity: 75,000 container/a; thereof: banana: 22,000 container/a / lemon: 25,000 container/a / strawberry: 25,000 container/a;
 Budgeted maintenance: 12,000.00 EUR;
 Actual maintenance: 12,375.00 EUR;

POR ice cream: 2.16 EUR/h; POR filling: 0.77 EUR/container;
 Sales quantities: banana: 21,500 containers / lemon 23,790 containers / strawberry: 25,000 containers;
 Net selling price per ice container: banana: 8.00 EUR / lemon: 8.50 / strawberry: 8.20 EUR;
 Perish factor on closing stock: 75%;
 VAT applicable.

The company WEIXDORF Ltd. manufactures ice creams for restaurants and hotels. The ice cream is sold in 2-litres-containers.

WEIXDORF Ltd. is established on 2.01.20X3 by a share issue of 1,000 ordinary shares at 50.00 EUR/s. WEIXDORF Ltd. registers at the revenue service for reduction of input-VAT on 2.01.20X3.

We record the incorporation on the same day as Bookkeeping entry (1), 2.01.20X3:

DR Cash/Bank	50,000.00 EUR
CR Issued capital	50,000.00 EUR

For financing, WEIXDORF Ltd. takes a bank loan to the extent of 50,000.00 EUR on 3.01.20X3. The bank loan requires a constant pay-off payment which is due at the yearends to the extent of 1,000.00 EUR/a. The rate of interest is 2.5 %/a. It is to be paid at the

end of the Accounting periods as well. We record the bank loan on 3.01.20X3 and the payment for interest and pay-off on 31.12.20X1 as Bookkeeping entries (2 ... 4). Bookkeeping entry (3) contains the disclosure of short-term liabilities for the pay-off in 20X4.

DR Cash/Bank	50,000.00 EUR
CR Interest Bear. Liabilities...	50,000.00 EUR

DR Interest Bear. Liabilities...	2,000.00 EUR
CR Cash/Bank	1,000.00 EUR
CR Accounts Payables A/P	1,000.00 EUR

DR Interest	1,250.00 EUR
CR Cash/Bank	1,250.00 EUR

WEIXDORF Ltd.'s manufacturing operations take place in two cost centres: one for production and another one for container filling and labeling. On 3.01.20X3, WEIXDORF Ltd. buys an ice cream machine for 24,000.00 EUR (gross value). The company depreciates the machine under straight-line method over 4 years. No residual value is considered. For the second cost centre, WEIXDORF Ltd. acquires a filling

machine at costs of acquisition of 14,500.00 EUR. Depreciation on the filling machine follows straight-line method over 4 years as well, however, WEIXDORF Ltd. estimates to sell the machine after its useful life at 2,900.00 EUR net selling price. We make Bookkeeping entries for the acquisitions on 3.01.20X3 as (5), (7) and for depreciation on 31.12.20X3 as (6), (8), see below:

DR P, P, P Account	20,000.00 EUR
DR VAT	4,000.00 EUR
CR Cash/Bank	24,000.00 EUR

DR P, P, E Account	14,500.00 EUR
DR VAT	2,900.00 EUR
CR Cash/Bank	17,400.00 EUR

DR Depreciation	5,000.00 EUR
CR Acc. Depr.	5,000.00 EUR

DR Depreciation	2,900.00 EUR
CR Acc. Depr.	2,900.00 EUR

WEIXDORF Ltd. purchases 2-litres-containers (empty), milk and fruits. It buys the 72,000 2-litres-containers at 0.60 EUR/p cost of purchase, 120,000 litres of milk at 0.70 EUR/l (net value)

and 24,000 kg of fruits at 1.00 EUR/kg (net value) during the Accounting period 20X3. The volume of 1 kg fruits is 1 litre. We record the purchases on 4.01.20X3 as Bookkeeping entries (9 ... 11).

DR Purchase	43,200.00 EUR
DR VAT	8,640.00 EUR
CR Cash/Bank	51,840.00 EUR

DR Purchase	84,000.00 EUR
DR VAT	16,800.00 EUR
CR Cash/Bank	100,800.00 EUR

DR Purchase	24,000.00 EUR
DR VAT	4,800.00 EUR
CR Cash/Bank	28,800.00 EUR

Labour is amounting to 270,000 EUR/a. A portion of 70,000 EUR thereof is for administration/management and the other 200,000.00 EUR are for 4 workers in production/filling - equally distributed. At WEIXDORF Ltd., 3 workers are employed in the Production department and 1 worker in the Filling department. We record labour as Bookkeeping entry (12). A value of 70,000.00 EUR is assigned to the

Administration department – observe Bookkeeping entry (13). For job order costing, we define 2 cost centre-related accounts as Manufacturing Overheads Ice Cream Production account (MOP) and Manufacturing Overheads Filling account (MOF). On 31.12.20X3, we assign labour to the Manufacturing Overheads accounts as Bookkeeping entries (14, 15).

DR Labour	270,000.00 EUR
CR Cash/Bank	270,000.00 EUR

DR Administration	70,000.00 EUR
CR Labour	70,000.00 EUR

DR MOP Ice Cream Production	150,000.00 EUR
CR Labour	150,000.00 EUR

DR MOF Filling	50,000.00 EUR
CR Labour	50,000.00 EUR

WEIXDORF Ltd. plans to produce 75,000 2-litres-containers (filled with ice cream). The estimate for maintenance leads to budgeted 12,000.00 EUR. The value is allocated to the departments based on the cost of acquisition for the ice cream production machine and the filling machine. At that stage, WEIXDORF Ltd. calculates the predetermined overhead allocation rate for the ice cream production - based on labour, depreciation and estimated maintenance - as: $(150,000 + 5,000 + 12,000 \times 20,000 / (14,500 + 20,000)) /$

$75,000 = 2.16 \text{ EUR/ICE}$. ICE is the output reference unit and refers to a 2 litre container filled with ice cream.

The predetermined overhead allocation rate for Filling is: $50,000 + 2,900 + 12,000 \times 14,500 / (14,500 + 20,000) / 75,000 = 0.77 \text{ EUR/ICE}$.

The actual value for maintenance equals 12,375.00 EUR. It is apportioned to departments based on the costs of acquisition for their machinery. The MOP Ice Cream Production account is charged with: $12,375 \times 20,000 / (14,500 + 20,000) = 7,173.91 \text{ EUR}$ and the MOF

Filling account with: $12,375 \times 14,500 / (14,500 + 20,000) = 5,201.09 \text{ EUR}$.

We allocate depreciation and maintenance to cost centres by

Bookkeeping entries (16 ... 20) on 31.12.20X3.

DR MOP Ice Cream Production.....	5,000.00 EUR
CR Depreciation.....	5,000.00 EUR
DR MOF Filling.....	2,900.00 EUR
CR Depreciation.....	2,900.00 EUR
DR Maintenance.....	12,375.00 EUR
DR VAT.....	2,475.00 EUR
CR Cash/Bank.....	14,850.00 EUR
DR MOP Ice Cream Production.....	7,173.91 EUR
CR Maintenance.....	7,173.91 EUR
DR MOF Filling.....	5,201.09 EUR
CR Maintenance.....	5,201.09 EUR

During 20X3, WEIXDORF Ltd. produces 22,000 containers of banana ice cream, and 25,000 containers of lemon and strawberry ice cream each.¹

We prepare for each flavour of ICE a single WIP-account: WIP Banana account, WIP Lemon account and a WIP

Strawberry account. At first, the purchases are allocated to inventory accounts and later to the above mentioned WIP-accounts. The Bookkeeping entries (21 ... 23) allocate the materials to inventory.

DR Raw Materials Container.....	43,200.00 EUR
CR Purchase.....	43,200.00 EUR
DR Raw Materials Milk.....	84,000.00 EUR
CR Purchase.....	84,000.00 EUR
DR Raw Materials Fruits.....	24,000.00 EUR
CR Purchase.....	24,000.00 EUR

The materials are purchased on demand which means, no closing stock of raw materials applies. The containers are

allocated based on production quantities to WIP-accounts. The containers for the banana ice cream are

¹ In total 72,000 containers with 144,000 litres of ice cream.

valued at: $22,000 \times 0.60 = 13,200.00$ EUR. The containers for the lemon and the strawberry ice cream are valued at:

$25,000 \times 0.60 = 15,000.00$ EUR each. We record the material allocations as Bookkeeping entries (24 ... 26).

DR WIP Banana	13,200.00 EUR
CR Raw Materials Containers	13,200.00 EUR
 DR WIP Lemon	 15,000.00 EUR
CR Raw Materials Containers	15,000.00 EUR
 DR WIP Strawberry	 15,000.00 EUR
CR Raw Materials Containers	15,000.00 EUR

The weight/volume of the ice cream is based on 120,000 litres of milk and 24,000 kg of fruits at a density of 1 kg/l. The volume of milk and fruits equals: $120,000 + 24,000 = 144,000$ litres ice cream. This volume correlates with: $144,000 / 2 = 72,000$ 2-litres-containers. Hence, the milk and the fruits can be allocated based on the production quantities (ICE). The cost of milk for banana ice cream is: $84,000 \times 22,000 /$

$72,000 = 25,666.67$ EUR. The cost of milk for the lemon and strawberry ice cream equals: $84,000 \times 25,000 / 72,000 = 29,166.67$ EUR each. The cost of bananas is: $24,000 \times 22,000 / 72,000 = 7,333.33$ EUR. The cost of lemons/strawberries equals: $24,000 \times 25,000 / 72,000 = 8,333.33$ EUR each. We record the following stock releases as Bookkeeping entries (27 ... 32).

DR WIP Banana	25,666.67 EUR
CR Raw Materials Milk	25,666.67 EUR
 DR WIP Lemon	 29,166.67 EUR
CR Raw Materials Milk	29,166.67 EUR
 DR WIP Strawberry	 29,166.67 EUR
CR Raw Materials Milk	29,166.67 EUR
 DR WIP Banana	 7,333.33 EUR
CR Raw Materials Fruits	7,333.33 EUR
 DR WIP Lemon	 8,333.33 EUR
CR Raw Materials Fruits	8,333.33 EUR
 DR WIP Strawberry	 8,333.33 EUR
CR Raw Materials Fruits	8,333.33 EUR

The allocation of overheads is based on predetermined overhead allocation rates. The rates are 2.16 EUR/ice for Production and 0.77 EUR/ice in the Filling department. Hence, the overheads allocated to the Banana ice cream are: $2.16 \times 22,000 = 47,520.00$ EUR for Production overheads and: 0.77

$\times 22,000 = 16,940.00$ EUR for Filling overheads. The overheads allocated to Lemon and Strawberry ice cream are: $2.16 \times 25,000 = 54,000.00$ EUR each for Production overheads and: $0.77 \times 25,000 = 19,250.00$ EUR for Filling overheads. Check the Bookkeeping entries (33 ... 38):

DR WIP Banana	47,520.00 EUR
CR MOH Ice Cream Production	47,520.00 EUR
DR WIP Lemon	54,000.00 EUR
CR MOH Ice Cream Production	54,000.00 EUR
DR WIP Strawberry	54,000.00 EUR
CR MOH Ice Cream Production	54,000.00 EUR
DR WIP Banana	16,940.00 EUR
CR MOH Filling	16,940.00 EUR
DR WIP Lemon	19,250.00 EUR
CR MOH Filling	19,250.00 EUR
DR WIP Strawberry	19,250.00 EUR
CR MOH Filling	19,250.00 EUR

The under-applied overheads are calculated by closing-off the

Manufacturing Overhead accounts to the Cost of Goods Sold account:

DR Cost of Goods Sold	6,653.91 EUR
CR MOP Ice Cream Production	6,653.91 EUR
DR Cost of Goods Sold	2,661.09 EUR
CR MOF Filling	2,661.09 EUR

After ice cream production and filling are completed, goods are added to stock. The total costs of manufacturing

can be taken from the WIP-accounts. We record the inventory movements as Bookkeeping entries (39 ... 41):

DR FG Inventory Banana	110,660.00 EUR
CR WIP Banana	110,660.00 EUR

DR FG Inventory Lemon.....	125,750.00 EUR
CR WIP Lemon.....	125,750.00 EUR
DR FG Inventory Strawberry.....	125,750.00 EUR
CR WIP Strawberry.....	125,750.00 EUR

The unit costs of manufacturing for a 2-litres-container filled with banana ice cream are: $110,660/22,000 = 5.03$ EUR/ice. The unit costs of manufacturing for a 2-litres-container filled with lemon or strawberry ice cream are: $125,750 / 25,000 = 5.03$ EUR/ice.

In the Accounting period 20X3, WEIXDORF Ltd. sells 21,500 containers banana ice cream at 8.00 EUR/ice,

23,790 containers lemon ice cream at 8.50 EUR/ice and all strawberry ice cream at 8.20 EUR/ice. All prices are net of VAT. The remaining stock expires to an extent of 75 % and is written-off as spoilage.

The revenue is equal to: $21,500 \times 8 + 23,790 \times 8.50 + 25,000 \times 8.20 = 579,215.00$ EUR. It is recorded by Bookkeeping entry (42):

DR Cash/Bank.....	695,058.00 EUR
CR VAT.....	115,843.00 EUR
CR Revenue.....	579,215.00 EUR

The inventory movements for the sold ICEs are based on the calculated unit costs. Inventory movements refers to the stock release and the recording as costs of goods sold. For the banana ice

cream, the inventory movements are: $21,500 \times 5.03 = 108,145.00$ EUR. For lemon ice cream, they are: $23,790 \times 5.03 = 119,663.70$ EUR and for strawberry ice cream: $25,000 \times 5.03 = 125,750.00$ EUR.

DR Cost of Goods Sold.....	108,145.00 EUR
CR FG Inventory Banana.....	108,145.00 EUR

DR Cost of Goods Sold.....	119,663.70 EUR
CR FG Inventory Lemon.....	119,663.70 EUR

DR Cost of Goods Sold.....	125,750.00 EUR
CR FG Inventory Strawberry.....	125,750.00 EUR

The remainder in the Finished Goods Banana Inventory account equals: $110,660 - 108,145 = 2,515.00$ EUR. A portion of 75% thereof perishes and is written-off as spoilage/waste: $2,515 \times 75\% = 1,886.25$ EUR. The remainder in

the Finished Goods Lemon Inventory account equals: $125,750 - 119,663.70 = 6,086.30$ EUR. A portion of 75% thereof is spoilage/waste: $6,086.30 \times 75\% = 4,564.73$ EUR.

The Accountant makes Bookkeeping entries for the spoilage/waste as below:

DR Waste	1,886.25 EUR
CR FG Inventory Banana	1,886.25 EUR
 DR Waste	 4,564.73 EUR
CR FG Inventory Lemon	4,564.73 EUR

Figure 1 shows WEIXDORF Ltd.'s accounts.

D		Purchase-20X3 PUR		C	
(9)	43,200.00	(21)	43,200.00		
(10)	84,000.00	(22)	84,000.00		
(11)	24,000.00	(23)	24,000.00		
	<u>151,200.00</u>		<u>151,200.00</u>		
D		Revenue-20X3 REV		C	
P&L	579,215.00	(42)	579,215.00		
	<u>579,215.00</u>		<u>579,215.00</u>		
D		P, P, E ice cream maker		C	
(5)	20,000.00	c/d	20,000.00		
	<u>20,000.00</u>		<u>20,000.00</u>		
b/d	20,000.00				
D		Acc depr ice cream maker ACP		C	
c/d	5,000.00	(6)	5,000.00		
	<u>5,000.00</u>		<u>5,000.00</u>		
		b/d	5,000.00		
D		Value added tax VAT		C	
(5)	4,000.00	(42)	115,843.00		
(7)	2,900.00				
(9)	8,640.00				
(10)	16,800.00				
(11)	4,800.00				
(18)	2,475.00				
c/d	76,228.00				
	<u>115,843.00</u>		<u>115,843.00</u>		
		b/d	76,228.00		
D		Depreciation-20X3 DPR		C	
(6)	5,000.00	(16)	5,000.00		
(8)	2,900.00	(17)	2,900.00		
	<u>7,900.00</u>		<u>7,900.00</u>		

Figure 1: WEIXDORF Ltd.'s accounts

D Purchase-20X3 PUR C		D Revenue-20X3 REV C	
(9)	43,200.00	(21)	43,200.00
(10)	84,000.00	(22)	84,000.00
(11)	24,000.00	(23)	24,000.00
	<u>151,200.00</u>		<u>151,200.00</u>
D Labour-20X3 LAB C		D Administration-20X3 ADM C	
(12)	270,000.00	(13)	70,000.00
		(14)	150,000.00
		(15)	50,000.00
	<u>270,000.00</u>		<u>70,000.00</u>
			<u>70,000.00</u>
D P, P, E filling machine C		D Acc depr filling machine ACF C	
(7)	14,500.00	c/d	14,500.00
	<u>14,500.00</u>		<u>14,500.00</u>
b/d	14,500.00	c/d	2,900.00
			<u>2,900.00</u>
			<u>2,900.00</u>
D MOH ice cream making MOP C		D MOH filling MOF C	
(14)	150,000.00	(33)	47,520.00
(16)	5,000.00	(34)	54,000.00
(20)	7,173.91	(35)	54,000.00
		COS	6,653.91
	<u>162,173.91</u>		<u>162,173.91</u>
			<u>58,101.09</u>
			<u>58,101.09</u>
D Maintenance-20X3 MTN C		D RM inventory container RMC C	
(18)	12,375.00	(21)	43,200.00
		(24)	13,200.00
		(25)	15,000.00
		(26)	15,000.00
	<u>12,375.00</u>		<u>43,200.00</u>
			<u>43,200.00</u>
D RM inventory milk RMM C		D RM inventory fruits RMF C	
(22)	84,000.00	(23)	24,000.00
		(30)	7,333.33
		(31)	8,333.33
		(32)	8,333.33
	<u>84,000.00</u>		<u>24,000.00</u>
			<u>24,000.00</u>

Figure 1: WEIXDORF Ltd.'s accounts (continued)

WIP banana WIB				WIP lemon WIL			
D			C	D			C
(24)	13,200.00	(39)	110,660.00	(25)	15,000.00	(40)	125,750.00
(27)	25,666.67			(28)	29,166.67		
(30)	7,333.33			(31)	8,333.33		
(33)	47,520.00			(34)	54,000.00		
(36)	16,940.00			(37)	19,250.00		
	<u>110,660.00</u>		<u>110,660.00</u>		<u>125,750.00</u>		<u>125,750.00</u>
WIP strawberry WIS				Cost of sales-20X3 COS			
D			C	D			C
(26)	15,000.00	(41)	125,750.00	MOP	6,653.91	P&L	362,873.70
(29)	29,166.67			MOF	2,661.09		
(32)	8,333.33			FGB	108,145.00		
(35)	54,000.00			FGL	119,663.70		
(38)	19,250.00			FGS	125,750.00		
	<u>125,750.00</u>		<u>125,750.00</u>		<u>362,873.70</u>		<u>362,873.70</u>
FG inventory banana FGB				FG inventory lemon FGL			
D			C	D			C
(39)	110,660.00	COS	108,145.00	(40)	125,750.00	COS	119,663.70
		WST	1,886.25			WST	4,564.73
		c/d	628.75			c/d	1,521.57
	<u>110,660.00</u>		<u>110,660.00</u>		<u>125,750.00</u>		<u>125,750.00</u>
b/d	628.75			b/d	1,521.57		
FG inventory strawberry FGS				Waste-20X3 WST			
D			C	D			C
(41)	125,750.00	COS	125,750.00	FGB	1,886.25	P&L	6,450.97
				FGL	4,564.73		
	<u>125,750.00</u>		<u>125,750.00</u>		<u>6,450.98</u>		<u>6,450.97</u>
Profit and Loss-20X3 P&L				Retained earnings R/E			
D			C	D			C
COS	362,873.70	REV	579,215.00	c/d	97,048.23	P&L	97,048.23
WST	6,450.97				<u>97,048.23</u>		<u>97,048.23</u>
ADM	70,000.00					b/d	97,048.23
INT	1,250.00						
EBT	138,640.33						
	<u>579,215.00</u>		<u>579,215.00</u>				
ITL	41,592.10	b/d	138,640.33				
R/E	97,048.23						
	<u>138,640.33</u>		<u>138,640.33</u>				
Income tax liabilities ITL							
D			C	D			C
c/d	41,592.10	P&L	41,592.10				
	<u>41,592.10</u>	b/d	41,592.10				

Figure 1: WEIXDORF Ltd.'s accounts (continued)

D		Accounts payables A/P		C
c/d	1,000.00	(3)	1,000.00	
		b/d	1,000.00	

Figure 1: WEIXDORF Ltd.'s accounts (continued)

Observe the financial statements in
Figure 2 and Figure 3:

Weixdorf Ltd. STATEMENT of PROFIT & LOSS and other COMPREHENSIVE INCOME for the year ended 31.12.20X3	
	[EUR]
Revenue	579,215
Other income	
	579,215
Cost of sales	(362,874)
Other expenses	(76,451)
Earnings before int. & taxes (EBIT)	139,890
Interest	(1,250)
Earnings before taxes (EBT)	138,640
Income tax expenses	(41,592)
Deferred taxes	
Earnings after taxes (EAT)	97,048

Figure 2: WEIXDORF Ltd.'s income statement

Weixdorf Ltd. STATEMENT of FINANCIAL POSITION as at 31.12.20X3			
A			C, L
<i>Non-current assets</i>	[EUR]	<i>Equity</i>	[EUR]
P, P, E	26,600	Share capital	50,000
Intangibles		Reserves	
Financial assets		Retained earnings	97,048
<i>Current assets</i>		<i>Liabilities</i>	
Inventory	2,150	Interest bear liab	48,000
Accounts receivables		Accounts payables	77,228
Prepaid expenses		Provisions	
Cash/Bank	285,118	Tax liabilities	41,592
Total assets	313,868	Total equity and liab.	313,868

Figure 3: WEIXDORF Ltd.'s balance sheet