

### Aufgabe 9.14: Permanentes Lagerhaltungssystem (Perpetual Inventory System)

EMSTEK (Pty) Ltd. is a dealer for used cars. It is specialized on small cars with ecologically low on fuel engines with less than 1 liter cubic capacity. They buy the cars at an age of 9 month from a local car rental shop and agreed in a contract to buy at least 100 cars per quarter. They buy the cars at the beginning of each month. Once they exceed the amount of 249 cars purchased in a quarter they receive a discount 7.5 % for all cars bought during that quarter. At the beginning of fiscal year 20X5 EMSTEK had 48 cars (Peugeot 107) on stock. The amount per unit is 8,900.00 EUR/car (net of VAT). The bookkeeper recorded the purchases below (net amounts):

(Jan):	87 Citroen C1 at 8,880.00 EUR each
(Feb):	76 Peugeot 107 at 9,060.00 EUR each
(March):	101 Citroen C1 at 8,750.00 EUR each
(April):	89 Citroen C1 at 8,900.00 EUR each
(May):	120 Peugeot 107 at 8,600.00 EUR each
(June):	30 Citroen C1 at 8,990.00 EUR each
(July):	87 Citroen C1 at 9,030.00 EUR each
(August):	90 Peugeot 107 at 8,900.00 EUR each
(September):	52 Peugeot 107 at 9,200.00 EUR each
(October):	90 Citroen C1 at 8,790.00 EUR each
(November):	120 Peugeot 107 at 8,670.00 EUR each
(December):	180 Citroen C1 at 8,580.00 EUR each

EMSTEK doesn't value the cars identically with regard to IAS 2.23 but use a weighted average cost formula. They only distinguish between the Peugeot and the Citroen. EMSTEK runs a perpetual inventory system. At the end of the 1<sup>st</sup> quarter of fiscal year 20X5 they sold 105 Peugeots and 180 Citroens for 11,200.00 EUR/Peugeot-car and 11,300.00 EUR/Citroen-car. All selling prices (including following amounts) are gross amounts. At the end of the 2<sup>nd</sup> quarter they sold 118 Peugeot-cars for 11,100.00 EUR each and 112 Citroen-cars for 11,900.00 EUR each. At the end of the 3<sup>rd</sup> quarter they sold 155 Peugeots for 11,900.00 EUR/Peugeot-car and 90 Citroen-cars for 12,000.00 EUR/Citroen-car. For the 4<sup>th</sup> quarter EMSTEK offers customers a Christmas bonus 5 %. They sold 124 Peugeots at 11,850.00 EUR/Peugeot car (price without consideration of bonus) and 267 Citroens for 11,450.00 EUR/Citroen-car (price without consideration of bonus).

**Required: Make all bookkeeping entries including the VAT and Discount Received account and determine the gross profit for 20X5. It is recommended to run an extra inventory account for Peugeots and Citroens. How much is closing stock of cars?**

## Lösung: (Solution)

D	Inv-Peugeot	C
OV	427.200,00	(6) 51.642,00
(2)	688.560,00	(19) 78.030,00
(9)	1.032.000,00	(22) 901.067,66
(12)	801.000,00	(26) 1.014.503,17
(13)	478.400,00	(30) 1.388.293,32
(15)	1.040.400,00	(34) 1.001.710,60
	c/d	32.313,25
	<u>4.467.560,00</u>	<u>4.467.560,00</u>
b/d	32.313,25	

D	Inv-Citroen	C
(1)	772.560,00	(5) 124.223,25
(3)	883.750,00	(18) 175.162,50
(8)	792.100,00	(24) 1.466.891,57
(10)	269.700,00	(28) 993.885,51
(11)	785.610,00	(32) 810.635,00
(14)	791.100,00	(36) 2.147.761,41
(16)	1.544.400,00	c/d 120.660,75
	<u>5.839.220,00</u>	<u>5.839.220,00</u>
b/d	120.660,75	

D	Sales	C
(37)	980.000,00	(21) 980.000,00
(38)	1.695.000,00	(23) 1.695.000,00
(39)	1.091.500,00	(25) 1.091.500,00
(40)	1.110.666,67	(27) 1.110.666,67
(41)	1.537.083,33	(29) 1.537.083,33
(42)	900.000,00	(31) 900.000,00
(43)	1.163.275,00	(33) 1.163.275,00
(44)	2.420.243,75	(35) 2.420.243,75
	<u>10.897.768,75</u>	<u>10.897.768,75</u>

D	VAT	C
(1)	154.512,00	(7) 35.173,05
(2)	137.712,00	(20) 50.638,50
(3)	176.750,00	(21) 196.000,00
(8)	158.420,00	(23) 339.000,00
(9)	206.400,00	(25) 218.300,00
(10)	53.940,00	(27) 222.133,33
(11)	157.122,00	(29) 307.416,67
(12)	160.200,00	(31) 180.000,00
(13)	95.680,00	(33) 232.655,00
(14)	158.220,00	(35) 484.048,75
(15)	208.080,00	
(16)	308.880,00	
c/d	289.449,30	
	<u>2.265.365,30</u>	<u>2.265.365,30</u>
b/d	289.449,30	

D	Bank	C
(4)	211.038,30	(1) 927.072,00
(17)	303.831,00	(2) 826.272,00
(21)	1.176.000,00	(3) 1.060.500,00
(23)	2.034.000,00	(8) 950.520,00
(25)	1.309.800,00	(9) 1.238.400,00
(27)	1.332.800,00	(10) 323.640,00
(29)	1.844.500,00	(11) 942.732,00
(31)	1.080.000,00	(12) 961.200,00
(33)	1.395.930,00	(13) 574.080,00
(35)	2.904.292,50	(14) 949.320,00
		(15) 1.248.480,00
		(16) 1.853.280,00
	c/d	1.736.695,80
	<u>13.592.191,80</u>	<u>13.592.191,80</u>
b/d	1.736.695,80	

D	Discount	C
(5)	124.223,25	(4) 211.038,30
(6)	51.642,00	(17) 303.831,00
(7)	35.173,05	
(18)	175.162,50	
(19)	78.030,00	
(20)	50.638,50	
	<u>514.869,30</u>	<u>514.869,30</u>

D	P&L	C
(22)	901.067,66	(37) 980.000,00
(24)	1.466.891,57	(38) 1.695.000,00
(26)	1.014.503,17	(39) 1.091.500,00
(28)	993.885,51	(40) 1.110.666,67
(30)	1.388.293,32	(41) 1.537.083,33
(32)	810.635,00	(42) 900.000,00
(34)	1.001.710,60	(43) 1.163.275,00
(36)	2.147.761,41	(44) 2.420.243,75
c/d	1.173.020,50	
	<u>10.897.768,75</u>	<u>10.897.768,75</u>
b/d	1.173.020,50	

## Exhibit 1: Accounts

The bookkeeping entries are as below:

(1) Purchase of Citroens in January  $87 \times 8,880 = 772,560$  EUR.

<b>DR Purchase</b>	<b>772,560.00 EUR</b>
<b>DR VAT</b>	<b>154,512.00 EUR</b>
<b>CR Cash/Bank</b>	<b>927,072.00 EUR</b>

(2) Purchase of Peugeots in February  $76 \times 9,060 = 688,560.00$  EUR

<b>DR Purchase</b>	<b>688,560.00 EUR</b>
<b>DR VAT</b>	<b>137,712.00 EUR</b>
<b>CR Cash/Bank</b>	<b>826,272.00 EUR</b>

(3) Purchase of Citroens in March  $101 \times 8,750 = 883,750.00$  EUR

<b>DR Purchase</b> .....	<b>883,750.00 EUR</b>
<b>DR VAT</b> .....	<b>176,750.00 EUR</b>
<b>CR Cash/Bank</b> .....	<b>1,060,500.00 EUR</b>

(4) Discount received as at end of March  $7.5\% \times (772,560 + 688,560 + 883,750) \times 120\% = 211,038.30$  EUR.

<b>DR Cash/Bank</b> .....	<b>211,038.30 EUR</b>
<b>CR Discount Received</b> .....	<b>211,038.30 EUR</b>

(5) Reduction of Citroens' carrying amounts per discount received  $(87 \times 8,880 + 101 \times 8,750) \times 7.5\% = 124,223.25$  EUR.

<b>DR Discount Received</b> .....	<b>124,223.25 EUR</b>
<b>CR CITROEN Inventory</b> .....	<b>124,223.25 EUR</b>

(6) Reduction of Peugeotots' carrying amounts per discount received  $76 \times 9,060 \times 7.5\% = 51,642.00$  EUR.

<b>DR Discount Received</b> .....	<b>51,642.00 EUR</b>
<b>CR PEUGEOT Inventory</b> .....	<b>51,642.00 EUR</b>

(7) Reduction of VAT receivables per discount received:  $(51,642 + 124,223.25) \times 20\% = 35,173.05$  EUR.

<b>DR Discount Received</b> .....	<b>35,173.05 EUR</b>
<b>CR VAT</b> .....	<b>35,173.05 EUR</b>

(8) Purchase of Citroens in April

(9) Purchase of Peugeotots in May

(10) Purchase of Citroens in June

(11) Purchase of Citroens in July

(12) Purchase of Peugeotots in August

(13) Purchase of Peugeotots in September

(14) Purchase of Citroens in October

(15) Purchase of Peugeotots in November

(16) Purchase of Citroens in December

(17) Discount received as at end of December  $(90 \times 8,790 + 120 \times 8,670 + 180 \times 8,580) \times 120\% \times 7.5\% = 303,831.00$  EUR

<b>DR Cash/Bank</b> .....	<b>303,831.00 EUR</b>
<b>DR Discount Received</b> .....	<b>303,831.00 EUR</b>

(18) Reduction of Peugeotots' carrying amounts per discount received

(19) Reduction of Citroens' carrying amounts per discount received

(20) Reduction of VAT receivables per discount received

(21) Sales of 105 Peugeots in 1<sup>st</sup> quarter  $105 \times 11,200 / 120\% = 980,000.00 \text{ EUR}$

<b>DR Cash/Bank</b> .....	<b>1,176,000.00 EUR</b>
<b>CR VAT</b> .....	<b>196,000.00 EUR</b>
<b>CR Sales</b> .....	<b>980,000.00 EUR</b>

(22) Cost of Peugeots sold in 1<sup>st</sup> quarter  $105 \times (48 \times 8,900 + (76 \times 9,060 \times (1 - 7.5\%))) / (48 + 76) = 901,067.66 \text{ EUR}$ .

<b>DR P&amp;L</b> .....	<b>901,067.66 EUR</b>
<b>CR Inventory Peugeots</b> .....	<b>901,067.66 EUR</b>

(23) Sales of 180 Citroens in 1<sup>st</sup> quarter

(24) Cost of Citroens sold in 1<sup>st</sup> quarter

(25) Sales of 118 Peugeots in 2<sup>nd</sup> quarter

(26) Cost of Peugeots sold in 2<sup>nd</sup> quarter

(27) Sales of 112 Citroens in 2<sup>nd</sup> quarter

(28) Cost of Citroens sold in 2<sup>nd</sup> quarter

(29) Sales of 155 Peugeots in 3<sup>rd</sup> quarter

(30) Cost of Peugeots sold in 3<sup>rd</sup> quarter

(31) Sales of 90 Citroens in 3<sup>rd</sup> quarter

(32) Cost of Citroens sold in 3<sup>rd</sup> quarter

(33) Sales of 124 Peugeots in 4<sup>th</sup> quarter

(34) Cost of Peugeots sold in 4<sup>th</sup> quarter

(35) Sales of 267 Citroens in 4<sup>th</sup> quarter

(36) Cost of Citroens sold in 4<sup>th</sup> quarter

(37) Transfer sales to P&L-account

<b>DR Sales</b> .....	<b>980,000.00 EUR</b>
<b>CR P&amp;L</b> .....	<b>980,000.00 EUR</b>

(38) Transfer sales to P&L-account

(39) Transfer sales to P&L-account

(40) Transfer sales to P&L-account

(41) Transfer sales to P&L-account

(42) Transfer sales to P&L-account

(43) Transfer sales to P&L-account

(44) Transfer sales to P&L-account

In order to understand the purchase prices see the list below. It contains the discount received already:

PEUGEOT					
amt	unit cost	net costs	cost less discount	VAT	purchase price
48	8.900,00	427.200,00		85.440,00	512.640,00
76	9.060,00	688.560,00	636.918,00	137.712,00	826.272,00
120	8.600,00	1.032.000,00		206.400,00	1.238.400,00
90	8.900,00	801.000,00		160.200,00	961.200,00
52	9.200,00	478.400,00		95.680,00	574.080,00
120	8.670,00	1.040.400,00	962.370,00	208.080,00	1.248.480,00

  

Citroen					
87	8.880,00	772.560,00	714.618,00	154.512,00	927.072,00
101	8.750,00	883.750,00	817.468,75	176.750,00	1.060.500,00
89	8.900,00	792.100,00		158.420,00	950.520,00
30	8.990,00	269.700,00		53.940,00	323.640,00
90	8.790,00	791.100,00	731.767,50	158.220,00	949.320,00
180	8.580,00	1.544.400,00	1.428.570,00	308.880,00	1.853.280,00

## Exhibit 2: Purchases

The cost of goods sold are calculated by weighted average method. See below the amounts and the amounts for sales:

PEUGEOT						
amt	unit cost	net costs	Sales	VAT	gross rev	price/u
(105)	8.581,60	(901.067,66)	(980.000,00)	(196.000,00)	(1.176.000,00)	11.200,00
(118)	8.597,48	(1.014.503,17)	(1.091.500,00)	(218.300,00)	(1.309.800,00)	11.100,00
(155)	8.956,73	(1.388.293,32)	(1.537.083,33)	(307.416,67)	(1.844.500,00)	11.900,00
(124)	8.078,31	(1.001.710,60)	(1.163.275,00)	(232.655,00)	(1.395.930,00)	11.257,50

  

Citroen						
(180)	8.149,40	(1.466.891,57)	(1.695.000,00)	(339.000,00)	(2.034.000,00)	11.300,00
(112)	8.873,98	(993.885,51)	(1.110.666,67)	(222.133,33)	(1.332.800,00)	11.900,00
(90)	9.007,06	(810.635,00)	(900.000,00)	(180.000,00)	(1.080.000,00)	12.000,00
(267)	8.044,05	(2.147.761,41)	(2.420.243,75)	(484.048,75)	(2.904.292,50)	10.877,50

## Exhibit 3: Sales

At the end of the year there is a closing stock of Peugeots 32,313.24 EUR. The amount of cars is  $32,313.24 / 8,078.31 = 4$ . The closing stock for Citroen amounts to 120,660.80 EUR. This gives you  $120,660.80 / 8,044.05 = 15$  cars on stock.