Chapter-VII
CHAPTER VII

STOCK MANAGEMENT

(1) MEANING AND SIGNIFICANCE OF STOCK MANAGEMENT

"The term stock refers to the stock pile off of the product a firm is offering for sale and the components that make up the product."¹ In other words stock is composed of assets that will be sold in future in the normal course of business operations. Stock may be of raw materials, semi-finished goods and finished goods. Raw material is the basic requirement for every product and is used in the production process.

Stock is the current asset but still differs from other current assets because only financial managers are not involved rather all the function areas like finance, marketing, production etc. are involved thus stock management like the management of other current assets should be related to the overall objective of the organisation.

The basic responsibility of the financial manager is to make sure that the organisation’s cash flows are managed efficiently. The efficient management of stock should ultimately result in the maximisation of the owner’s wealth. To minimise cash requirements inventory should be turned over as quickly as possible avoiding stock outs that might result either to closing down the production or

lead to a loss of sales. On the one side it is necessary that the
turnover of the stock should be fast but on the other hand it is
necessary that sufficient stock is maintained to meet the demand. In
other words the financial manager has to satisfy these two
contradictory demands. Thus it can be stated that inventory
management consists of two counter – balancing parts – (1) to
minimise the investment, (2) to meet the demand of the product.
These two objectives can also be described as cost and benefit
associated problems related with stock. In fact everybody knows that
smaller size of investment in stock involves lesser capital investment
while the faster turnover generate larger profits. This gives the
concept of optimum level of stock holding. This is the level of stock
which neither involves huge investments nor gives difficulty in fast
turnover but the concept of optimum is welcomed everywhere while
maintenance of optimum is very difficult. Either there will be
shortage or there will be surplus and the maintenance of optimum is
more theoretical than practical. Management of stock is very
important from various point of view. It is not only the quantity of
the stock but also the quality of the stock which is important for fast
turnover and care should be taken to improve it.

(2) CLASSIFICATION AND SIZE OF STOCK

CLASSIFICATION OF STOCK:

Stock can be classified into following four parts :-

(1) Raw material
(2) Semi – finished goods
(3) Finished goods
(4) Goods to be stored, spare parts and others.

In a manufacturing organisation above all four types of goods remain in stock whereas trading organisations only have stock of goods to be sold.

**SIZE OF STOCK:**

This is a common question that in an organisation how much quantity of stock should be kept. This question has no such reply that is applicable to all organisations. The size of stock depends mainly on the nature and conditions in which an organisation is working. According to general study in manufacturing organisation's ratio of stock in comparison to amount of total sales could be 30 to 40%, which any organisation through stock planning and technique and without making adverse effect on sales can reduce upto 10 to 20 percent.\(^2\) Ratio of stock on gross sales is an important ratio therefore it should be specifically kept in mind while determining its size that it should meet out the general objective of the organisation because less quantity of stock creates lot of hindrances in the way to achieve it, like disruption in continuous production, wasteful expenditure in buying small quantities of material again and again, chances of less than full capacity utilisation, decline in the morale of workers due to insufficient supply of raw material, disqualification in efficient use of favourable casual opportunities, etc. Keeping less stock may cause more expenditure rather than savings in the capital investments due to small scale buying of stock. Contrary to this

---

keeping more than required quantity of stock will cause increase in the expenditure of maintenance, supervision, breakage, wastage, insurance premium paid for safety, etc.

(3) CAUSES OF STOCK ACCUMULATION

There used to be a time gap between demand and supply of goods and supply of raw material at the right time remains uncertain because of various factors. Therefore it is not possible for an organisation to receive raw material whenever it is needed. Supply of goods can be delayed due to unavailability of goods, strike, obstruction in transportation, etc. For running production and sales activities without any interruption in the right direction, an organisation should keep appropriate level of stock in sufficient quantity at a particular time. Main causes of stock accumulation are as follows:

- **Cause related to transaction:** Stock accumulation is necessary for keeping production and sales activities in systematic order.

- **Precautionary cause:** Accumulation of stock is necessary to have safety from possible risks due to change in demand and supply.

- **Anticipatory cause:** The quantity of stock may vary upward or downward to have advantages of price fluctuation.
(4) PROBLEMS OF STOCK MANAGEMENT

Indian industries are suffering from the problem of stock accumulation. Due to that not only risk arises but along with hindrance in working capital artificial deficiency of capital also arises. Through scientific stock control system excess and idle investment in stock can be controlled. It is known from the stock analysis of 22 public enterprises taken by Public Enterprises Committee that 6 companies keep stock equal to their production of 4 to 6 months whereas quantity of stock accumulated in 16 enterprises was equal to their production cost of 6 to 24 months. Average inventory was found to be sufficient for 11 months production which shows an over accumulation of the stock. According to the Committee this may be assumed that quantity of stock may vary according to nature and type of public enterprise and production, however stock accumulation in private sector is much—much less than the stock of public sector and both are incomparable. Accumulation of raw material stock for 11 months production can not be justified in any way.\(^3\) Bureau of Public Enterprises conducted a study of stock management of selected public sector units which found that a huge stock was lying worth of many crore rupees, however comparatively the situation in private sector was much better.

It is a reality that due to red—tapism, negligence and inefficient management capabilities Indian public sector enterprises

\(^3\) Annual Report related with working of commercial and industrial enterprises of central government, p. 11.
were over burdened by the excess stock right from their inception. Private sector units used to be much aware in this regard keeping in mind that their financial resources may not be blocked.

(5) VALUATION OF STOCK IN HINDUSTAN PETROLEUM CORPORATION LIMITED

Here a special focus is given on the size of the stock, adequacy of stock, composition of stock and analysis of amount invested in stock of Hindustan Petroleum Corporation Limited.

Size of stock:

Correct maintenance of the size of stock can be included in the efficient management of stock. Neither it should be very small causing obstruction in production nor it should be excessive resulting into blockage of funds in excessive stock. Size of stock of Hindustan Petroleum Corporation Limited is shown in the table no. 7.1:

Table No. 7.1
Size of various elements of stock

<table>
<thead>
<tr>
<th>Elements of stock</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Raw Materials</td>
<td>931.53</td>
</tr>
<tr>
<td>2. Finished products</td>
<td>4149.69</td>
</tr>
<tr>
<td>3. Stock in process</td>
<td>197.68</td>
</tr>
</tbody>
</table>

4. Packages  
   13.42 7.96 6.36 7.92 10.38 7.49 8.16

5. Stores and spares  
   110.21 125.77 160.70 158.58 176.22 176.52 188.34

**Total**  
   5402.53 5682.21 7810.29 8098.40 12020.28 8793.24 12579.22

**Source**: Compiled from various Annual Reports of HPCL

By the observation of table no. 7.1 it is clear that the size of stock is increasing every year barring the year 2008-09 and more than doubled in the year 2007-08 as compared to the year 2003-04. The reason for such increase is the excess production and that resulted in the accumulation of finished products. It also indicates that the sale of finished products could not match the production acceleration.

In the table no. 7.2 increase/decrease in the size of stock of Hindustan Petroleum Corporation Limited is shown in percentage which is as follows:

**Table No. 7.2**

**Percentage trend of size of stock in HPCL**

*(Base year 2003-04)*

<table>
<thead>
<tr>
<th>Years</th>
<th>Stock</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>5402.53</td>
<td>100</td>
</tr>
<tr>
<td>2004-05</td>
<td>5682.21</td>
<td>105.18</td>
</tr>
<tr>
<td>2005-06</td>
<td>7810.29</td>
<td>144.57</td>
</tr>
<tr>
<td>2006-07</td>
<td>8098.40</td>
<td>149.90</td>
</tr>
<tr>
<td>2007-08</td>
<td>12020.28</td>
<td>222.49</td>
</tr>
<tr>
<td>2008-09</td>
<td>8793.24</td>
<td>162.76</td>
</tr>
<tr>
<td>2009-10</td>
<td>12579.22</td>
<td>232.84</td>
</tr>
</tbody>
</table>

**Source**: Compiled from various Annual Reports of HPCL
By the observation of table no. 7.2 it is clear that the percentage of size of stock has increased every year except the year 2008-09 as compared to the base period 2003-04. The increase in this percentage was just little over 5% as compared to its preceding year. However in the year 2005-06 the increase as compared to base period is more than 44.57%. However this went up to 149.90% in the year 2006-07 showing a marginal increase of 5.33% over its preceding year. Taking base period 2003-04, in the year 2007-08 the percentage shoot up to 222.49 as compared to 2003-04. The reason for increase in this percentage may be taken as non achievement of sales targets as compared to production targets.

(6) STOCK AND SALES – WITH REFERENCE TO HINDUSTAN PETROLEUM CORPORATION LIMITED

Measurement of the size of stock, trend of sales and stock can also be known through percentage. Increase in stock percentage in comparison to increase in sales percentage is an indication to this fact that investment of funds in stock is increasing. Contrary to it decrease in stock percentage indicates less investment of funds.

Table no. 7.3 is showing the trend of stock along with sales which is as follows :

**Table No. 7.3**

Trend of the size of sales and stock
(Base year 2003-04)

<table>
<thead>
<tr>
<th>Years</th>
<th>Stock</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

(Percentage)
<table>
<thead>
<tr>
<th>Year</th>
<th>Stock (%)</th>
<th>Sales (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>105.18</td>
<td>116.79</td>
</tr>
<tr>
<td>2005-06</td>
<td>144.57</td>
<td>138.66</td>
</tr>
<tr>
<td>2006-07</td>
<td>149.90</td>
<td>174.17</td>
</tr>
<tr>
<td>2007-08</td>
<td>222.49</td>
<td>202.49</td>
</tr>
<tr>
<td>2008-09</td>
<td>162.76</td>
<td>242.16</td>
</tr>
<tr>
<td>2009-10</td>
<td>232.84</td>
<td>223.01</td>
</tr>
</tbody>
</table>

**Source:** Compiled from various Annual Reports of HPCL

Table no. 7.3 shows percent change in stock and sales for seven years i.e. 2003-04 to 2009-10. By the observation it is clear that both the percentages are increasing up to the year 2007-08. However the increase in sales continued to the level of 242.16% in the year 2008-09 but the percentage of stock fall down to 162.76% in the same year. In the year 2004-05 sales increased by 16.79% as compared to 5.18% in stock. In the year 2005-06 the sales went up to 138.66% while the stock increases to 144.57% indicating the faster accumulation of stock. It is evident from the statistics that stock percentage increased due to lesser pace in the increase of sales. In the year 2006-07 both percentages increased however sales went up to 174.17% while the stock level was just 149.90% showing that there was grand recovery in sales in this year. However momentum in sales could not be maintained with the same pace this resulted in the sharp increase in the stock level reaching 222.49% as compared to 202.49% in sales in the year 2007-08. In the year 2009-10 the percentage of stock has increased but at the same time the percentage of sales has recorded a decline.
(7) PERCENTAGE OF STOCK AND SALES BASED ON PROGRESSIVE BASE YEAR

Progressive percentage of stock and sales of HPCL is calculated to study the relative relationship of stock and sales. For the calculation of the percentage the previous year is taken as base for every subsequent year. Percentage of stock and sales based on progressive base year of HPCL is clear from table no. 7.4 which is as follows:

Table No. 7.4
Percentage of stock and sales based on progressive base year

<table>
<thead>
<tr>
<th>Years</th>
<th>Percentage of stock based on progressive base year</th>
<th>Percentage of sales based on progressive base year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>100.00</td>
<td>100.00</td>
</tr>
<tr>
<td>2004-05</td>
<td>105.18</td>
<td>116.79</td>
</tr>
<tr>
<td>2005-06</td>
<td>137.45</td>
<td>118.73</td>
</tr>
<tr>
<td>2006-07</td>
<td>103.69</td>
<td>125.61</td>
</tr>
<tr>
<td>2007-08</td>
<td>148.43</td>
<td>116.26</td>
</tr>
<tr>
<td>2008-09</td>
<td>73.15</td>
<td>119.59</td>
</tr>
<tr>
<td>2009-10</td>
<td>143.06</td>
<td>92.09</td>
</tr>
</tbody>
</table>

Source: Compiled from various Annual Reports of HPCL

From the table no. 7.4 it is clear that the percentage of stock based on progressive base year is fluctuating in the period under review. As the year 2003-04 has been taken as base its said percentage is 100. This has increased to 105.18 in the year 2004-05. It increased more sharply in the year 2005-06 reaching upto 137.45
but thereafter in the year 2006-07 it declined very sharply and touched 103.69. Again in the year 2007-08 there was a wild fluctuation in this percentage showing the highest at 148.43. An increase in this percentage shows investment in stock at a high rate particularly in the years 2005-06, 2007-08 and 2009-10. Any fall in this percentage reflects low investment in stock which was lowest in the year 2008-09. A low investment in stock shows a positive impact on the liquidity of the company while a higher investment shows just reverse of it.

Percentage of sales based on progressive base year shows an upward trend upto the year 2006-07 and then a decline in the year 2007-08. This percentage increased upto 125.61 in the year 2006-07 while in the year 2007-08 it came down to 116.26. This again increased to 119.59% in the year 2008-09. An increased percentage indicates increased volume of sales. However, in the year 2009-10 this percentage went down to 92.09 showing a decline of 27.5% from its previous year level.

(8) STOCK TURNOVER ANALYSIS IN HINDUSTAN PETROLEUM CORPORATION LIMITED

Stock turnover ratio is considered as a guiding point of effective stock management of any organisation. This ratio directly effects the profitability of the organisation. It is an indicator of earning more profit by the organisation and it also indicates the fact that the organisation can decrease the amount of stock by selling more quantity as a result of which cost of inventory can be saved.
Stock turnover ratio can be calculated on the basis of the following formula:

\[
\text{Stock Turnover Ratio} = \frac{\text{Cost of Goods Sold}}{\text{Average Inventory}}
\]

Where:

Cost of Goods sold = Sales - Gross Profit

\[
\text{Average Inventory} = \frac{\text{Opening Stock} + \text{Closing stock}}{2}
\]

According to prof. B. Graham \(^5\) "Turnover Ratio" is the main standard of the soundness of stock which is defined in the form of result acquired through dividing cost of goods sold with average inventory. Low level of stock turnover ratio is an indicator of more investment of funds in stock and high stock turnover ratio is a symbol of less investment of funds in stock that means intensive use of capital.

Stock turnover of Hindustan Petroleum Corporation Limited is shown in the table no. 7.5 which is as follows:

<table>
<thead>
<tr>
<th>Years</th>
<th>Stock Turnover Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>9.10</td>
</tr>
<tr>
<td>2004-05</td>
<td>10.43</td>
</tr>
<tr>
<td>2005-06</td>
<td>10.42</td>
</tr>
<tr>
<td>2006-07</td>
<td>10.89</td>
</tr>
</tbody>
</table>

\(^5\) B. Graham: The Interpretation of Financial Statement; Damper and Ree, London, 1964
<table>
<thead>
<tr>
<th>Years</th>
<th>Size of raw material</th>
<th>Percentage of raw material with total stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>Rs. 931.53</td>
<td>17.24</td>
</tr>
</tbody>
</table>

Source: Compiled from various Annual Reports of HPCL

Table no. 7.5 indicates that the stock turnover ratio is almost constant and vary between 9.10 to 11.62. This shows nominal change in the investment in stock.

It is not only stock turnover ratio but also other ratios related with stock components to the total stock and they should be studied. Following are considered as the components of stock:

- Raw materials
- Finished products
- Stock in process
- Packages
- Stores and spares

**Raw Material – expansion and percentage of raw material with total stock:**

For this study, percentage of raw material with total stock is calculated. Position in this regard is explained in the table no. 7.6:

**Table No. 7.6**

Expansion of raw material and percentage of raw material with total stock

(Rs. in crores)
<table>
<thead>
<tr>
<th>Year</th>
<th>Value</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>1166.24</td>
<td>20.52</td>
</tr>
<tr>
<td>2005-06</td>
<td>1852.02</td>
<td>23.71</td>
</tr>
<tr>
<td>2006-07</td>
<td>1897.14</td>
<td>23.43</td>
</tr>
<tr>
<td>2007-08</td>
<td>3443.05</td>
<td>28.64</td>
</tr>
<tr>
<td>2008-09</td>
<td>2055.38</td>
<td>23.37</td>
</tr>
<tr>
<td>2009-10</td>
<td>2578.91</td>
<td>20.50</td>
</tr>
</tbody>
</table>

**Source:** Compiled from various Annual Reports of HPCL

By the observation of table no. 7.6 it is clear that the size of raw material is increasing every year between the period 2003-04 to 2007-08 but declined in the year 2008-09 to Rs. 2055.38 crores but as compared to previous year showed an increased of about 25% in the year 2009-10. Simultaneously percentage of raw material with total stock is also increasing during the same period except in the years 2006-07, 2008-09 and 2009-10 indicating the increase of investments in raw material which has effected the fund generation adversely. In the year 2003-04 the percentage of raw material with total stock was 17.24 which increased to the highest of 28.64 in the year 2007-08 but declined in the years 2008-09 and 2009-10 to the level of 23.37 and 20.50 respectively.

**Percentage of finished products, stock in process and packages with total stock:**

An attempt is made to study the percentage of total of finished products, stock in process and packages with total stock of HPCL to know that how much proportion do such goods hold in the total stock of HPCL. This percentage is presented in the table no. 7.7 which is as follows:-
**Table No. 7.7**

Expansion of finished products, stock in process and packages and percentage with total stock  
(Rs. in crores)

<table>
<thead>
<tr>
<th>Years</th>
<th>Size of finished products, stock in process and packages Rs.</th>
<th>Percentage with total stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>4360.79</td>
<td>80.72</td>
</tr>
<tr>
<td>2004-05</td>
<td>4390.20</td>
<td>77.26</td>
</tr>
<tr>
<td>2005-06</td>
<td>5797.57</td>
<td>74.23</td>
</tr>
<tr>
<td>2006-07</td>
<td>6042.68</td>
<td>74.62</td>
</tr>
<tr>
<td>2007-08</td>
<td>8401.01</td>
<td>69.89</td>
</tr>
<tr>
<td>2008-09</td>
<td>6561.34</td>
<td>74.62</td>
</tr>
<tr>
<td>2009-10</td>
<td>9811.97</td>
<td>78.00</td>
</tr>
</tbody>
</table>

**Source**: Compiled from various Annual Reports of HPCL

The size of various components of stock together has been increasing all through between the period 2003-04 to 2007-08 but it came down to Rs. 6561.34 crores in the year 2008-09. However, in the year 2009-10 the company made a quick recovery in this regard and the figure went up to Rs. 9811.97 crores. Their percentage with total stock has a tendency to decrease during the period under review except in the years 2006-07, 2008-09 and 2009-10 with an increase of 0.39, 4.73 and 3.38 respectively indicating that the funds are not blocked in these items in the total stock. It also indicates that if the funds are not blocked in these components then definitely they will be blocked in the form of finished stock.
Percentage of stores and spares with total stock:

For this purpose the data is presented in the table no. 7.8: -

Table No. 7.8

Stores and spares - Expansion and percentage with total stock

<table>
<thead>
<tr>
<th>Years</th>
<th>Stores and Spares (Rs.)</th>
<th>Percentage with total stock</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>110.21</td>
<td>2.04</td>
</tr>
<tr>
<td>2004-05</td>
<td>125.77</td>
<td>2.21</td>
</tr>
<tr>
<td>2005-06</td>
<td>160.70</td>
<td>2.06</td>
</tr>
<tr>
<td>2006-07</td>
<td>158.58</td>
<td>1.96</td>
</tr>
<tr>
<td>2007-08</td>
<td>176.22</td>
<td>1.47</td>
</tr>
<tr>
<td>2008-09</td>
<td>176.52</td>
<td>2.01</td>
</tr>
<tr>
<td>2009-10</td>
<td>188.34</td>
<td>1.50</td>
</tr>
</tbody>
</table>

Source: Compiled from various Annual Reports of HPCL

By the observation of table no. 7.8 it is clear that the share of stores and spares has increased in the year 2004-05 as compared to its preceding year 2003-04. The same trend is visible in the percentage of such items with total stock. However in the year 2005-06 stores and spares increased but their percentage with total stock decreased to 2.06. This percentage further declined to 1.96 in the following year of 2005-06. However percentage of stores and spares was almost constant showing a small decline. In the year 2007-08 percentage of these components with total stock went down further to the level of 1.47 but improve to 2.01 in the year 2008-09. However there is an increase in stores and spares in the years 2007-
08 and 2008-09 as compared to their previous years to the tune of Rs. 17.64 crores and Rs. 0.3 crores respectively. In the year 2009-10 stores and spares increased by Rs. 11.82 crores as against the year 2008-09 while the percentage has declined to the level of 1.50.

(9) ADEQUACY OF STOCK IN HINDUSTAN PETROLEUM CORPORATION LIMITED

Stock is that investment on which the enterprise has to pay interest instead of earning it. Investment in stock is always subject to the fear of devaluation in its value. Uncontrolled stock is an industrial danger. With reference to this statement it is essential for the managers of every enterprise that they should keep sufficient and full control over the amount of stock so that interest on unnecessary invested funds in stock has not to be given which becomes extra burden on the profits of the organisation. Generally following three approaches are used for the measurement of the adequacy of the stock:

(a) On the basis of average period of stock

(b) Percentage of stock with current assets

(c) Stock turnover ratio

Third approach of stock turnover ratio has been analysed in detail in the present chapter in the previous point. Therefore to avoid unnecessary repetition only two approaches are described here which are as follows:

---

(a) Adequacy of stock on the basis of the period of month or average period of stock:

According to Bureau of Public Enterprises stock of more than production cost of 6 months should not remain in the enterprise.  

With reference to production value for months quantity of stock is also known as average period of stock. This study reveals the availability of time (days or months) for which the stock is available.

Less average period of stock increases the liquidity of the organisation and effects the less investment of working capital, whereas increased average period of stock indicates extra investment of working capital in stock. Following formula is used for the calculation of the average period of stock:

\[
\text{Amount of stock} \times 12 \text{ months} \over \text{Sales}
\]

Analysis of average period of stock is presented in the table no. 7.9 of HPCL which is as follows:

<table>
<thead>
<tr>
<th>Table No. 7.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average period of stock in months</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>1.26</td>
</tr>
</tbody>
</table>

\footnote{Government policy with reference to Public Enterprises, Second part manufacturing management production cost and material management, Bharat Heavy Electricals Limited New Delhi, 1976, p. 46.}
<table>
<thead>
<tr>
<th>Year</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004-05</td>
<td>1.33</td>
</tr>
<tr>
<td>2005-06</td>
<td>1.31</td>
</tr>
<tr>
<td>2006-07</td>
<td>1.08</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.38</td>
</tr>
<tr>
<td>2008-09</td>
<td>1.00</td>
</tr>
<tr>
<td>2009-10</td>
<td>1.31</td>
</tr>
</tbody>
</table>

**Source:** Compiled from various Annual Reports of HPCL

In the year 2003-04 the average retention period of stock was 1.26 and showed a very marginal upward change in the years 2004-05, 2005-06, 2007-08 and 2009-10 as compared to the year 2003-04. However there was marginal decrease in the years 2006-07 and 2008-09. As compared to the standard period of 6 months prescribed by Bureau of Public Enterprises in the whole of the period under review the age of stock has been very less. This shows quick disposal of stock and company’s investments in stocks are not unduly held up. This also means no additional load on the working capital and liquidity of the company.

(b) **Percentage of stock with current assets:**

In any organisation if the size of stock is more than 50 percent of current assets then it is a symbol of this fact that large part of the working capital of the organisation is invested in the stock. On the basis of the standard base of current ratio being 2:1 and liquidity ratio being 1:1, more than 50 percent part of current assets should not be invested in stock.
In the table no. 7.10 the percentage of stock with the total current assets is presented which is as follows:

**Table No. 7.10**

<table>
<thead>
<tr>
<th>Years</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003-04</td>
<td>57.29</td>
</tr>
<tr>
<td>2004-05</td>
<td>59.79</td>
</tr>
<tr>
<td>2005-06</td>
<td>70.93</td>
</tr>
<tr>
<td>2006-07</td>
<td>70.63</td>
</tr>
<tr>
<td>2007-08</td>
<td>62.28</td>
</tr>
<tr>
<td>2008-09</td>
<td>54.98</td>
</tr>
<tr>
<td>2009-10</td>
<td>60.94</td>
</tr>
</tbody>
</table>

**Source:** Compiled from various Annual Reports of HPCL

In the period under review in the table no. 7.10 it is very well reflected that all through this period percentage of stock with total current assets has been more than standard 50 percent. So much so it reached up to more than 70% in the years 2005-06 and 2006-07. This situation shows that over half of the working capital is invested in assets and it could not be utilised elsewhere.
(10) EVALUATION OF STOCK MANAGEMENT PROCESS IN HINDUSTAN PETROLEUM CORPORATION LIMITED

For continuous and fruitful production and sales, maintenance of stock in large size is the main purpose of stock management. In stock management it is also kept in mind that maximum increase in the liquidity and profitability should be achieved through minimum investment in stock. In stock management determination of optimum level of investment in stock and process to maintain that level is also included.

In effective stock management technique mainly following approaches are included:

(1) Economic order quantity
(2) Ordering limit
(3) A B C method of material control
(4) FIFO method
(5) Weighted Average Cost

Economic Order Quantity (E.O.Q.):

Quantity of material for which placing of order is appropriate and profitable according to economic point of view is called as economic order quantity. Through economic order quantity co-ordination is established between ordering cost and carrying cost of stock. Economic order quantity can be described through a diagram also which is as follows:-
Diagram

Economic Order Quantity (E.O.Q.)

In the diagram, the procurement cost (ordering cost), carrying cost and total cost are shown. Procurement cost increased according to the size of order. Total cost shows a declining trend because fixed order costs are spread on more units. However after a certain limit when the cost of acquiring material becomes lower than their maintenance cost then total cost began to decrease. Therefore the economic order quantity of the material minimizes the total cost of the material.
Re-order Limit:

Re-order limit means that level of the quantity of stock in the store on reaching which necessary proceeding related to purchase of material is started so that the ordered material can be received before the quantity of material reaches the minimum level. While determining the re-order level main factors like time of placing of order, consumption of goods in the organisation and the period of the procurement of goods after placing order are considered. This can be explained as under:

Re-order level = Maximum Usage Rate × Maximum Procurement Time

Determination Of Minimum And Maximum Stock Levels:

Minimum Stock Level: Minimum quantity of stock which is generally available in the store at all the times is known as minimum level of stock. In short:

Minimum Stock Level = Re-order Level – (Normal Usage Rate × Normal Reorder Period)

Maximum Stock Level: Maximum stock level means that maximum quantity of material which is kept in the store at any time. Maximum Stock Level is calculated as follows:

Maximum Stock Level = (Re-order Level + Reorder Quantity) – (Minimum Usage Rate × Minimum Reorder Period)
A B C Method Of Material Control :

There may be thousands of inventory items in an organisation with widely varying value, usage and importance. The question usually posed is whether uniform attention and emphasis should be given to all the items of inventory kept in stock? Needless to say that it would neither be desirable nor advisable, because it would result in waste of time, energy and money if modern techniques of inventory control are applied uniformly to each and every item of inventory kept in stores, irrespective of their value, usage and importance. Rather a selective approach would prove more useful and economical. The inventory items should be classified according to some set criteria into categories A, B and C. Normally the following three criteria are used for classification:

(i) Usage volume, velocity or speed,
(ii) Unit value or unit cost and
(iii) Critical nature of the item.

Which of the above three criteria should be given more weightage? This will depend on the discretion of the management. Normally items which have a high velocity or speed in usage and which have a high unit value are placed in category ‘A’. On the other hand items which are of meagre unit value, having a low frequency in usage and are also not of a critical nature, are usually included in category ‘C’. The remaining items, representing average value, usage and importance are placed in category ‘B’.
Utmost attention should be focussed on items included in category ‘A’. Although this would involve some cost, yet it would be worthwhile considering the high value, usage or critical nature of the items.

Category ‘B’ includes items which are of average value. Their velocity in usage is also not high and their nature is also not so critical. Hence slightly less time and efforts should be devoted on control of such items.

As for the items included in category ‘C’ it is not considered worthwhile to devote much time and energy. Such items can be taken care of by traditional methods of inventory management.

**First-In First-Out (FIFO) Method:**

The First – In First – Out method of material pricing is used most successfully for handling items of some bulk with a relatively high unit cost as it is easy to identify units belonging to a particular lot.

Under this method, the assumption is that materials are issued from the oldest supply in stock and that units issued are priced at the oldest cost price listed on stock ledger, the materials on hand at all times being the most recent purchases. When a requisition for a certain type of material is presented to a storekeeper, he uses the cost price of the first lot of material received still on hand and, if the quantity desired is greater than the units remaining in the first lot, he uses the cost price of the second lot, then of the third and fourth until
enough material is obtained to complete the requisition. Though the actual handling of materials in bins and on shelves in accordance with the FIFO method is imaginary in most concerns, this method of handling should be followed in case of materials which are subject to deterioration and obsolescence.

**Weighted Average Cost:**

Under this method, the issue price is calculated by dividing the value of materials in hand by number of units in hand. Thus, it takes into consideration both quantities and money value for arriving at the issue rate. Whenever a new consignment is received, a new weighted price is calculated by adding the value of the consignment to the cost of stock in hand. The rate thus, calculated is used to price all issues until a new consignment is received.

**Stock Management Process In Hindustan Petroleum Corporation Limited:**

The stock management is carried out in HPCL under the control of purchase and store department. However activities of these departments are controlled by General Manager with the help of Production Manager and Purchase Manager. All the techniques of inventory control are used in this company.

**Evaluation Of Stock Management On The Basis Of Accounts Published:**

1. Crude oil is valued at cost on first in first out (FIFO) basis or at net realisable value, whichever is lower.
(2) Raw material for lubricants and finished lubricants are valued at weighted average cost or at net realisable value, whichever is lower.

(3) Stock – in – process is valued at raw material cost plus cost of conversion or at net realisable value, whichever is lower.

(4) Finished products other than lubricant are valued at cost (on FIFO basis) or at net realisable value, whichever is lower.

(5) Empty packages are valued at weighted average cost.

(6) Stores and spares are valued at weighted average cost.

(7) Value of surplus, obsolete and slow moving stores and spares, if any, is reduced to net realisable value. Surplus items, when transferred from completed projects are valued at cost/estimated value, pending periodic assessment / ascertainment of condition.

(8) There has been an adverse effect on the profitability as the increase in sales could not match the increase in stock percentage.

(9) Between the period 2003-04 to 2007-08 there has been a constant increase in the size of stock that indicates the negligence on the part of the managers in this regard. However, a relief is witnessed in the year 2008-09 as the size of stock went down to Rs. 8793.24 crores. This trend could not be maintained for a very long time and again in the year 2009-10 the stock has increased to Rs. 12579.22 crores.
(10) This is observed that average stock life in the company in the period of review (2003-04 to 2009-10) has been less than standard days of 6 months.

(11) There has been shortage of professional stock managers in the company.

(12) There appears to be insufficient and ineffective organisation of stock management.

(13) In stock control techniques like re-order limit, ABC analysis and economic order quantities are not effectively used.

(14) Mostly in stock control replenishment system has been adopted.

(11) PROBLEMS RELATED WITH STOCK MANAGEMENT

The primary objectives of inventory management are:

(i) to minimize the possibility of disruption in the production schedule of an organisation for want of raw materials, stores and spores and

(ii) to keep down capital investment in inventories. Although, it is essential to have necessary inventories, excessive inventory is idle resource of the organisation.

Inventory management, therefore, should strike a balance between too much inventory and too little inventory. The efficient management and effective control of inventories help

---


in achieving better operational results and reduce investment in working capital. It has a significant influence on the profitability of an organisation.

An organisation often has a number of items in its inventory. Some items account for the major portion of total consumption value of all the items but these are small in number, while others represent less value but are very large in number. Efficient inventory management demands that items of higher value should attract greater attention of the management.

Carrying too much or too little of the inventories is detrimental to the organisations. If too little inventories are maintained, the organisation has to encounter frequent stock – outs and incur heavy ordering cost. Very large inventories subject the organisation to heavy inventory carrying costs in addition to unnecessary tie – up of capital.

There are sometimes fluctuations in the lead time and / or in the consumption rate. If no provision is made for these variations, stock outs may take place causing disruption in the production schedule of the organisation. The stock which takes care of the fluctuation in demand in the wake of the variation in the lead time and consumption rate is known as safety stock.

One basic problem of inventory control is how much to order. To solve this problem many formulae and models have been developed. All inventory models no matter how complex, address themselves to the problems of timing and magnitude of
replenishment.\textsuperscript{10} Decisions regarding the problems relating to the ordering of inventory are very much affected by the costs associated with the procurement of stocks (ordering costs) and keeping the materials in stock (inventory carrying costs). The inventory ordering and carrying costs are inversely related to each other.

The composition of inventory is generally affected by the nature of the business enterprise. A trading concern would have little investment in raw materials, work – in – process and stores and spares. A major portion of its total inventory would consist of finished goods only. Public utilities have high investment in stores and spares since they provide services. A manufacturing concern has to invest in each component of inventory, viz., raw materials, work – in – process, finished goods and stores and spares. The share of each component in the total inventory varies from industry to industry.

The accumulation of raw materials in most of the cases is preplanned and intentional. During the course of our interviews, many financial executives have emphasized that their problem is not of deciding about the minimum and maximum levels of inventories, but of procuring the raw materials and other essential inputs in as much quantity as possible due to all round shortages in the economy. They are never sure when their production line may be held up due to non – availability of any of the inputs.

A manufacturing concern cannot do away with work – in – process whereas finished goods inventory only introduces flexibility in the business operations and enables the organisation to provide

better customer service. The size of work-in-process is determined by the length of production cycle and current level of operations. The longer the production cycle, the greater will be the value of work-in-process. Although some finished goods inventory is bound to be created when goods are produced in anticipation of demand and also for show room and sample purposes, its size would depend on the market forces currently operative. Seasonality of sales boosts the volume of finished goods inventory in off-season, especially when goods are produced evenly throughout the year. At times, transport bottlenecks compel the organisations to carry finished goods inventory.

The long procurement period, uncertainty of availability, important restrictions and sometimes the terms of exporters of machinery have been put forth as the main arguments for the accumulation of stores and spares in larger quantities. However, since the high investment in stores and spares accompanied by their very slow movement has a significant effect on the health of the working capital of an organisation, it is highly desirable that some effective steps are taken to reduce the investment in stores and spares.