CHAPTER 8

8. Conclusion and Suggestions
An inventory management system can be described as a coordinated set of rules and procedures that are helpful in taking decisions such as — when to order and how much to order. Each item of inventory required in the manufacturing or procurement process, to meet customers’ demand. It also provides managers with the necessary information to effectively make decisions relating to routine situations. The objective of a well-designed inventory management system is to minimize the cost of maintaining the inventories and at the same time achieving customer service satisfaction.

A well-reconciled scientific approach for inventory management would enable the management to plan and control inventory effectively. Factors like the increasing size of business establishments, a wide variety of inventory, the complexity and urgency of modern requirements, the high idle-time, the cost of machine and men—all these necessitates greater liquidity and a larger amount of working capital which combine to create a need for a scientific planning and controlling of inventories.

Inventory management, implies the right amount of stock at the right place and at the right time. It may be noted, that inventory costs a good deal by way of interest charges, cost of storage and handling, deterioration and obsolescence costs. Even on a conservative estimate, the cost of carrying inventory is estimated at 15 per cent of the cost of acquisition per annum. To the extent there are excessive inventories, the cost of production as well as the profitability of a concern is adversely affected.

In respect of the two plants under study, major findings are as follows:
1. Both selected units raw material turnover ratio lies between 3 to 6 times with fluctuating trend during the study period i.e. (2000 - 2006) except in 2006 whereas in RIL this ratio rose upto 9.31 times. Low and fluctuating trend is not a good sign for the any industry as it reflect over investment in inventory. (Vide table nos. 5.1 and 5.2)

2. The performance of both steel plants regarding capacity utilization remaind to the tune of 80% which cannot be termed satisfactory while other steel plants such as Tisco utilized their 100 per cent capacity during the study period.

3. It is also revealed that both selected steel plants apply VED classification for spare parts management.

4. Both selected steel plants purchase their raw material from indigenous as well as foreign sources.

5. The working capital locked in inventory remained excessive in both selected steel plants. Inventory dominates structure of working capital in both selected steel plants during the study period.

6. For imported material both selected plants keep their stock for three months and for foreign purchases lead-time lies between one to three months. In special circumstances this period may be upto six months.

7. For local purchases and foreign purchases both selected steel plants do not determine any stock level by statistical or other technique because they purchase the raw material according to their present requirement.
8. Both selected steel plants use different method of purchases viz. Open Tender, Single Tender, Limited Tender, Rate Contract etc. Practically they apply limited tender, single tender and rate contract methods for raw material & limited and open tender for stores and spares.

9. It is revealed that neither of the selected steel plants fixes any stock level limit nor time limit for each stage of purchases. The material are purchased according to their convenience because both the units are applying just-in-time method.

10. In location of steel industry two elements play an important role namely (i) is access of raw material and (ii) transport facility. Both plants are highly localised and are a good example of availing the advantage of location.

11. Both plants have codified their material into 10 digit alpha-numerical coding system for raw material, and eight digit for store & spares. However many new items are included in each year and plants numerical coding system is not adequate in RIL. This coding system is not updated.

12. Disposal of scrap, obsolete inventory and surplus has taken a long time. They sell it through trader and auction. In auction a large number of items are sold on a single day. Generally disposable price lies between Rs. 2000 to Rs. 10000 per metric tonne.

13. Both steel plants maintain store ledger accounts for raw material on the basis of FIFO method.
14. In the selected steel plants computers are being used to hold a supplier file, an order file and a stock ledger. This system is based on regular updating of stock ledger and control limit. The computer initiates procurement action during the periodic review.

15. Both units under study accomplish purchasing by locating the supply facilities closer to customer, delivering directly to process use points and using small size delivery trucks with predetermined load sequence to facilitate loading and unloading. Small quantities are shipped at more frequent interval by shipping, mixed loads, using bad switching and consolidation points. Closer attention is given to routes and scheduling. They keep their stock for seven days. They are formally calculating neither ordering cost nor carrying cost as it not required to calculate in just-in-time.

16. Both plants use war scrap as raw material. It is cheaper than fresh one. If both plants purchase raw material from the route of WTC its landed cost in India lies between 190 - 210 US dollar per metric tonne. But war scrap would cost only about 150 dollars per metric tonne i.e. 40 dollars less per metric tonne. It was shocking to note that management of both the plants were quite negligent to safety and there have been frequent industrial accident and mishappenings.*

* In the year 2004 BSSL faced a serious incident while using war scrap. This accident took the lives of 10 persons and 20 injured (Times of India, 8 Oct., 2004)
17. Purchase of raw material in term of quantity and value of consumption of raw material in both selected plants were regularly increasing except in 2003. But the ratio between purchase V/s usages shows a fluctuating trend. It was more than 100 percent in 2003 and 2005 which indicates that consumption of raw material was more than purchases. It also indicate that plants utilised their stock to fulfill their consumption need, which is a clear indicator of mismanagement.

18. The percent of sales V/s usages lies between 60 to 80 in both plants (Vide table 5.19 & 5.20).

19. There is another problem associated with plants i.e. short supply of spares. There are thousands of items in BSSL and Rathi Ispat of electrical and mechanical spares many of which are not produce indigenously. A huge, inventory of spares is to be kept ready for the eventuality of break downs. Severity of break down gets aggravated when proper spares are not available. The availability of these spares depends upon clearance from imports cell. There are a number of formalities to be complied with. This problem becomes more poignant when these spares require substitution but are not readily available in the Indian market.

20. UPSEB had increased the power tariff extraordinarily into last several years which has led to high cost of production. It is a major setback to the industry.

21. The recent hike in excise duty on steel based products from 8 per cent to 12 per cent has increased the cost of
production. The Government also reduced import duty on steel based products from 15 per cent to 10 per cent. It may result in dumping of steel based product into Indian market from abroad.

22. One of the major problems of both the plants is connected with power availability. Both plants face the shortage of power supply as well as irregular power supply. The consequence of poor supply affects not only the continuity of production activity but also results in wastage and stagnation.

23. The finished product being manufactured by both the plants are industrial commodity products which are susceptible to price volatility. Further, the change in Government policies relating to export adversely affects profit.

24. It is revealed that in both selected plants rail and truck play a vital role and also are important carriers in the transportation system of the industry.

25. Finished stock turnover ratio of RIL lies between 10.10 to 37.77 times with fluctuating trend during the study period. It was 11.54 times in 2000 and became 16.41 times upto 2002. It declined to 10.10 time in 2003 and again increased as high as 34.25 times in year 2004 which was more than 3 times of previous year. It rose up to 37.77 times in 2005 but declined 19.86 times in 2006 which was nearly half of the previous year. A too high ratio with fluctuating trend is not a good indicator for any industry. It shows shortage of goods
or position of stock out whenever demand increases (vide table 5.4).

1. In RIL, inventory to working capital ratio was surprisingly more than its working capital. It was 115% in the year 2006 and in 2005 it was 92.07% which shows that RIL is using not only its entire working capital but also long term capital to meet their current requirement (vide table 5.14).

2. It is revealed that RIL has out dated equipment like plant and machinery, sack truck, lorry, crane etc. Due to this reason there has a major accident in the factory premises causing severe damages to the plant and machinery and resulting in complete disruption of production facilities in 2003.*

29. In RIL uniform supply of gases has also emerged as a major constraint on production.

30. Finished stock turnover ratio of BSSL ties between 11.68 times to 17.68 times with fluctuating trend during the study period. It was 11.87 times (which was minimum) in the year 2000 and was maximum i.e. 17.68 times in the year 2004. After that it declined up to 17.66 times in the year 2005 and 14.41 times in the year 2006, it is the indicator of dull business and over investment in inventories (vide table 5.3).

31. In BSSL inventory to working capital ratio was more than 75 per cent. Requirement of working capital is

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* RIL admitted itself in its annual report 2003-04 page 8 that severe damages to the plant and machinery resulting complete disruption of production facility in year the 2003.
for three months as it provides two month advance to purchases and one to customers, which also destroyed the liquidity position of the industry to some extent (vide table 5.13).

32. In BSSL import to indigenous ratio of raw material lies to the tune of 28 : 72 during the study period except in 2006 when this ratio worked out to 64 : 36 (which is just double of the entire period ratio). It indicates that BSSL largely depends more on foreign than on indigenous sources for raw material due to better quality of the former. In case of spare parts and stores BSSL shows an increasing trend in terms to amount (see Table 5.3). When we compared the amount of store and spare parts with production capacity it was found that amount increased by 2.22 times while production increased by 3.77 times during the study period. The ratio of import to indigenous was 9.26 : 90.74 in 2006 while in 2005 it was 3.77 : 96.23. In the first four years of study period i.e. (2000 - 2004) this ratio was to the tune of 40 : 60 which shows that BSSL increased its dependency on indigenous rather than foreign sources for spare parts & stores.

33. The BSSL has its own central store department which caters to the need of all its plants. This department is divided into three categories i.e. insured, uninsured and general stores. RIL also has central store with some sub-department store. Stores are being managed well by the units under review, but there is yet scope to
34. BSSL applies ‘SAP’ (System Analysis Procedure) for integrated control while RIL maintains it manually.

35. In BSSL purchases V/s usage ratio lies between 89% to 105% with fluctuating trend. It was 97.69% in 2002 and increased upto 101.67% in 2003 but after that it declined to 89.03% in 2003, 87.75% in 2004 and 92.17% in 2005 but in 2006 it again rose to 105.12%. In RIL this ratio lies between 96% to 110% with fluctuating trend. It was minimum in 2001 (95.84%) and maximum in 2005 (98%). This shows that purchase is not sufficient for the need of industry and the industry used their stock regularly and if demand increases than industry has to face the problem of stock out (vide table 5.21 & 5.22).

SUGGESTIONS:

The problems and difficulties of steel plants are of varied nature relating to inventory management right from purchases and planning to storing finished product. In respect of both selected steel plants many problems technical as well as general, (discussed above) need immediate attention. Inventory management can be effective and can attain its objectives of minimising the cost with the optimum use of materials. For this following suggestions merit serious consideration.

1. Inadequate working capital affects the smooth functioning of any industry. Both steel plants are facing this problem and even more of inadequate position of
liquidity. Both plants have invested almost 80 to 90% portion of their working capital in inventory which reflects their tight liquidity position. Plants are also facing a problem of sharp price variation. So it is suggested that the organisation must have adequate cash reserve to maintain liquidity and the organisation under the sharp price changing condition management should take decision very cautiously.

2. The percentage of usages to sales lies between 60 to 80 in both steel plants. So it is suggested that small reduction in cost of raw material through bulk purchase and proper working management etc. may be restored to increase profit margin.

3. As per admitted by RIL in its’ annual report 2003–04 page no. 8 relating to outdated machinery, it is suggested that outdated equipment must be replaced timely to avoid accident and breakage to increase production as well as profit.

4. Both plants also purchased raw material regularly from war zone as it is comparatively cheap but it leads to the chances of accident. So Government should make a policy to prevent such type of purchases and strict inspection should be made before such purchases.

5. To achieve the goal of efficient and proper management so it is suggested that skilled and trained workers should be appointed. Policy relating to acquisition of workers should be reconsidered and reward should also be given to efficient workers so that they can give their
best to the organisation.

6. Human resources is the most important factor of five M (Man, Machinery, Method, Material and Money) for any organisation. So it is suggested that both steel plants should adopt the service training programme and short term course for its workers and also organise seminars, talks, colloquy and training programme etc. They should also maintain their own library.

7. It is revealed through personal interviews that requirement of working capital in both selected steel plants is almost three months (two months advance for supplier and one month credit to customer). It leads to scanty source to meets its obligation as well as routine operations. So it is suggested that the plants should revise their credit policy like local supplies of products and find out new avenues for supplies, which will help to obtain money at the earliest and facilitate the plants in maintaining sufficient working capital. The plant concerned should also create a development reserve for upliftment of their working capital, which can be carved out of their retained earnings.

8. Both selected plants apply only VED analysis for the management of spare parts. It is suggested that along with VED analysis, ABC technique is also considered for the classification of inventory items.

9. Disposal of waste and scrap material needs improvement, as both selected steel plants dispose of their wastage and scrap after a long period. It is recommended that the
disposal should be on regular basis.

10. Both plants are seriously affected by shortage and irregular power supply. This can be minimised through joint efforts with Government authorities or state ministry of power and to increase the capacity of own power generation. War footing efforts should be made to solve this essential problem and Government should also take necessary steps in this direction.

11. Central purchasing is being resorted to in both selected steel plants under the department of PPC. A better coordination between different departments and PPC department is strongly recommended. After all various function namely, production and inventory control, purchasing, material handling etc. are all intimately connected with each other.

12. To prevent the accidents like the one that occurred in 2003, it is suggested that RIL should adopt modern technology which can increase the profit margin too.

13. Both plants are applying ‘Just-In-Time’ technique for purchasing raw material which is successful in Japan and has yielded considerable benefits. However there are two basic conditions which should be taking into consideration while adopting it (a) close rapport between workers and management, and between supplier and company and (b) strict self discipline. In India these conditions are not upto the mark so it cannot be so successful as in other developed countries like Japan unless an effective HRM policy is evolved taking into
consideration the interest of the stakeholders as well.

14. RIL is not doing vendor rating, so it is suggested that vendor rating should be adopted in a systematic manner which will prove a boon for the better management of the unit.

15. For the better management a separate purchase officer should be appointed to look after the procurement of low value items (such as Rs. 1000 each) through a panel of recognised vendors. There should be separate receive and inspection incharge in respect of raw material items and stores items. They should be properly trained and should be required to examine the items technically.

16. BSSL being an automatic plant and it is applying ‘SAP’ (System Analysis Procedure) system for integrated control w.e.f. 5th Feb. 2005. It is a procedure of programming which is expected to lead to better production. It requires highly qualified personnel for proper functioning. So it is suggested that new employees should be highly qualified and proper training programme should be conducted for the existing staff accordingly.

The importance of the steel in national economy can simply not be over rated. It is a priority based industry included in Appendix ‘A’ of the Industries Schedule issued by the Government of India. Its percentage in many important industries is quite high e.g. 50 per cent in general construction, 60 per cent in over bridges, 65 per cent in power plants and 80 per cent in railway bridges. Steel being in great demand, its prices have also been
spiralling in recent years. They recorded 65 per cent increase in March 2008 as compared to March 2007. During the last three months they recorded an unprecedented and somewhat alarming rise. However this industry which can be called the backbone of national development continues to be hamstrung by many problems, such as shortage of working capital and raw material, erratic power supply etc. The credit policy of both the plants under study leaves much to be desired. Instead of concentrating on long term orders they should evolve a short term order policy. The suggestions enumerated above if implemented can restore and augment financial health of both plants through an effectively revised and reformed inventory system.