

# UNIT 137 – UPSC - Production Control

Production is necessary for consumer satisfaction and enhancement of firms in competitive business climate. It has been revealed in studies that production is the main activity of manufacturing enterprises. The success of firms depends on the efficiency of this activity therefore it is important to have complete control over it (Singla, 2010). Production control is defined as actions involved in handling materials, parts, assemblies, and subassemblies, from their initial stage to the finished product stage in a structured and efficient way. It may also consist of activities such as planning, scheduling, routing, dispatching, storage. According to Henry Fayol, production control is an art and science of ensuring that all activities occur in accordance with the rules established and instructions issued (Singla, 2010). Once the industrialist has taken the decisions regarding the product design and production processes and system, the next job is to take steps for production planning and control. Under production control, an effort is made to ensure that production should be timely in proper quantity, premium quality and it should be achieved at minimum cost with low wastage. Under production control, the decision taken with regard to what, where, how are to be given practical shape and it is the main purpose of production control (Singla, 2010).



Production control utilizes typical control techniques to achieve best performance out of the production system as to accomplish overall production planning targets. Production control is basically a process of planning production in advance of operations, establishing the exact route of each individual item part or assembly, setting, starting and finishing for each important item, assembly or the finishing production and releasing the necessary orders as well as initiating the required follow-up to have the smooth function of the enterprise. The production control is intricate in small industries. The production planning and control department can function at its best in small scale unit only when the work manager, the purchase manager, the personnel manager and the financial controller help in planning production activities. The production controller directly reports to the works manager but in small scale unit, all the three functions namely material control, planning and control are often performed by the industrialist himself. Production control starts with dispatching and ends up with remedial actions.

It has been documented that production controls are strongly related to production planning and in all production plans, control forms a place to check that targets are accomplished. There are various production controls used in big firms (Nakkiran, 2006):

1. Progress control which is the control of production programs and schedules to ensure that planned output is attained.
2. Cost control is the control of whole series of budgets that include aspects of material cost control and labour cost control in order to ensure that original budget for cost of production is observed.
3. Quality control is the control of quality and standard of the product.
4. Machine utilization control is the control of machine loading in order to ensure that load is related to machine capacity.
5. Stock control is the control of stock and store in order to ensure that supplies are available as required and their availability will not interrupt production schedule.
6. Computer control is control of some operations which is fully automatic.

**The objectives of production control are as follows:** The major objective of production control is to gain maximum output from minimum input of resources. Production control regulates the orderly flow of material from raw stage to finish stage. It highlights control mechanism on the basis of flow of material throughout the organization. Another objective of Production control is proper tooling and plant layout. A sequential arrangement of plant and machinery leads to minimum delays and less wastage due to transfer of material from one place to another. It has an objective of routing a work with in factory. Production control also regulates inventory management and organizes the production schedules (Nakkiran, 2006).

Major functions of production control are to offer assemblies and products of needed quality and quantity at precise time, and harmonize, scrutinize and feedback to manufacturing management, offer maximum uses of resources, and accomplish major objective to cut down cost and trustworthy consumer services.

## Importance of Production Control

First is that it ensures the execution of plans. Through the medium of production control, company understand the difference between the standard and actual results. It makes it clear whether the work is performed according to plan. If it deviates, corrective measure can be done.

Production control ensures the best utilization of human and physical resources.

It helps in coordination. In order to achieve the object of organization successfully, coordination among all departments are essential. Through production control, it can be recognized whether the production is going to meet the requirement of the orders received. If not received then effort is made to find out the causes for variation and remedial action is taken. In this manner coordination between departments is established.

It also helps in minimizing cost and improving quality. It helps in inventory control.

Production control in organization is highly important activity as it checks various undesirable activities such as theft, corruption, delays, and non-cooperation. Consequently the production is

safe, timely delivery and wastage is reduced. Production control also gives advantage of psychological pressure on all the persons concerned.

**Techniques of production control in an organisation:** Production control ensures usual and smooth flow of material and synchronizes different manufacturing operations through the methods of programming, Scheduling, dispatching, and progressing and inventory control.

**Programming:** Production programming controls the supply of finished product in desired amount at the due date according with the production plan. Programming guarantees most efficient use of labour, equipment and capital. In production programming, three main decisions are taken:

- a. Nature of the product to be manufactured.
- b. Amount of Quantities to be produced.
- c. When to produce:

Objectives of Production Programming:

- a. Reliable delivery to the customer: This depends on attainment of output target as per production programme and on quoting the customer achievable delivery dates. When delivery times are long, the annual production programme must be used, otherwise short term programme is to be used. To realize reliable delivery it is necessary that delivery promises should only be given if the production programme still contains unallocated products for the period concerned.
- b. Even loading of plant by ensuring production at an even rate throughout the year.
- c. Even loading of labour in total man-hours per week
- d. Well-organized use of capital: The production programmes are arranged such that minimum capital is attached in stocks.

**Layout of Production Programme:** The particulars of the production programme are usually revealed in a tabular form, where the first column specifies the nature of the products to be manufactured and the columns of first row specify the periods which can be days, weeks, quarters or months. The quantity to be produced for each type of product is written at the intersection of various rows and columns.

To prepare production programme some problems can be solved:

- a. Smoothing of seasonal sales demand.
- b. Choice of batch quantity and batch frequency for products required in small quantities at irregular intervals,
- c. The constant revision of the production programme to keep it in line with revision of the sales programme.

**Scheduling:** It refers to set time table for output indicating when each activity in proper sequence should take place. The purpose of preparing time table is to determine the time to be taken by each process of production. There are different types of schedules that include master schedule, operation schedule, and daily operation schedule.

In order to have control over schedules, the help of the production control chart is taken such as Gantt chart, bar chart load chart, man- machine chart (Singla, 2010).

**Dispatching:** Dispatching is the practice of setting production activities in action through the discharge of order and instructions according to previously planned times and sequence embodied in route sheets and schedule charts. It considers each processing department one by one and plans the output from machines, tools and other work centres so as to complete the orders by due date. After ordering, next step is to bring together the inputs, that are plant, labour, special tools and material required for each production operation on each part and assembly. The concerned operators are issued required instructions. The decision of assigning different jobs to different machines is identified as Dispatching. It is one of the limited areas where the foreman still exercises his judgment within the framework of a well-developed production control system. A schedule usually sets general priorities on jobs and the date by which each job should leave an area but the foreman takes.

There are various functions of Dispatching. Dispatching is involved in checking the immediate availability of materials. It ensures that all production and inspection aids are available for use and to obtain the appropriate drawing, specification or material list. The function of dispatching is to collate jobs, operation layouts, routine etc. with the design, processing information or inspection schedule, assign the work to definite machine, work place and men, to issue necessary materials, tools etc. to correct points for use, to issue production order note stating the start and finish times, to inform the progress section about the start of the work, give instruction to start the production, to return the acquired material and other aids to the correct location and maintain all production records viz. time lost in production and the causes for delay; incidence of machine breakdown; change in capacity. The dispatching function is significantly affected by machine breakdowns, tooling breakdowns, material delays and absenteeism.

Important documents required in production control through dispatching:

- a. Job order: It is issued to authorise the commencement of production on a batch according to with previously planned dates and times entered on machine loading charts, route sheets and control devices. The time taken to carry out an operation is recorded on the job order.
- b. A store requisition authorising the storekeeper to issue materials to departments for performing operations.
- c. Issue of tool orders to the tool department to keep ready the tools, jigs, fixtures.
- d. Issue of time tickets, drawings, instruction cards etc. to the workers to commence manufacturing operations.
- e. Issue of inspection orders.
- f. Compilation of time tickets, drawings and instruction cards at the end of each operation.
- g. Recording inactive times of machines and operators and reporting them to appropriate authorities for necessary action or delays.
- h. Internal delivery note -for delivering finished products, finished components or even excess materials into stores.

Duties of dispatcher include allotting work to every machine, issue authority to receive tools and material, to have control over the progress of material at every process, to allow the transfer of

material from one process to another, to issue inspection order, to maintain the record of idle time of machine and man and record of actual production (Singla, 2010).

Inspection is also performed in production control. The aim is to maintain quality standard and reduce wastage. The inspection include (Singla, 2010)

- i. The inspection of raw material's quality before use.
- ii. The inspection of machine before starting the production process.
- iii. The inspection during the process of production.
- iv. The inspection of tools for better performance.
- v. The inspection of finished products.

**Progressing or Follow-up:** Follow-up is examining production activities methodically so that production may be done according to plan. It is the measurement of output against plan, analysis of performance for deficits and following up the line management to apply corrective action for excessive underperformance. Progressing is the function by which one can give an early warning when actual production diverges from planned production and thus makes it possible to take remedial action. Follow-up is significant step of production control. This step is to determine from time-to-time that the production operations are progressing according to the plan. The follower is accountable for observing that any detail which is ignored or not correctly executed is set right. This makes sure proper synchronization of production plan and to take corrective measures if necessary. Follow-up can be performed at three stages, for materials, work-in-progress and stage during assembly and execution. It determines causes of delay which may be loss-making lot sizes; schedule beyond the capacity of the machine, underestimation of material, tools and manpower, errors in processing and inspection. The need of progressing arises due to:

1. Failure to deliver materials on time.
2. Machines/power breaks down.
3. Workersabsenteeism.
4. Faults of design, planning or human activity,
5. Unnecessary delays/bottlenecks.

Progress chasers are charged with the responsibilities of checking the progress continuously, Causes of discrepancy, if any, in programmed and actual performance, authorising and signing requisitions and liaison with other departments supplying materials and components to the particular department of the progress chaser.

The following are the steps in Progressing or Follow-up:

1. Flowcharts indicating the planned sequence of operations.
2. Production schedules to compare targets with performances.
3. Machine loading charts indicating different operations performed by each machine.
4. Inspection schedules to establish a programme for inspection.

Progressing can perform following tasks:

1. Recording actual production.

2. Compare it with planned production.
3. Measure the variability in production.
4. Reporting the excessive variance to the authority responsible for execution of the production plan.

Progressing can be in the form of Programme control, Order progressing, Progressing of shortages, Daily plan progress, and Departmental progressing.

To summarize, production control entails the planning production in manufacturing companies before the initiation of actual production activities and exercising control activities to ensure that the planned production is realized in terms of quality, quantity, delivery schedule and rate of manufacture. It maintains standard of quality through the production life cycle. The major benefits of production control are that it makes certain a smooth flow of all production processes; ensure production cost savings thereby improving the bottom line and control wastage of resources. Production control cannot be similar in all firms. Production control is relied upon nature of production, job oriented, service oriented, and nature of operation and size of operation.