Product Control Systems

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 controlis an art and science of ensuring that all activities occurs are 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 by 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 extract route of each individual item partor 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 understands 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 organization:

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:

1. Nature of the product to be manufactured.
2. Amount of Quantities to be produced.
3. When to produce:

Objectives of Production Programming:

1. 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.
2. Even loading of plant by ensuring production at an even rate throughout the year.
3. Even loading of labour in total man-hours per week
4. Well-organized use of capital: The production programs 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:

1. Smoothing of seasonal sales demand.
2. Choice of batch quantity and batch frequency for products required in small quantities at irregular intervals,
3. 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. Dispatchingis 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:

1. Job order: It is issued to authorize 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.
2. A store requisition authorising the storekeeper to issue materials to departments for performing operations.
3. Issue of tool orders to the tool department to keep ready the tools, jigs, fixtures.
4. Issue of time tickets, drawings, instruction cards etc. to the workers to commence manufacturing operations.
5. Issue of inspection orders.
6. Compilation of time tickets, drawings and instruction cards at the end of each operation.

7. Recording inactive times of machines and operators and reporting them to appropriate authorities for necessary action or delays.
8. 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)

1. The inspection of raw material's quality before use.
2. The inspection of machine before starting the production process.

- The inspection during the process of production.

1. The inspection of tools for better performance.
2. 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 under performance. 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. Workers absenteeism.
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, authorizing 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.

Gantt Charts

A Gantt chart is a horizontal bar chart developed as a production control tool in 1917 by Henry L. Gantt, an American engineer and social scientist. Frequently used in project management, a Gantt chart provides a graphical illustration of a schedule that helps to plan, coordinate, and track specific tasks in a project.

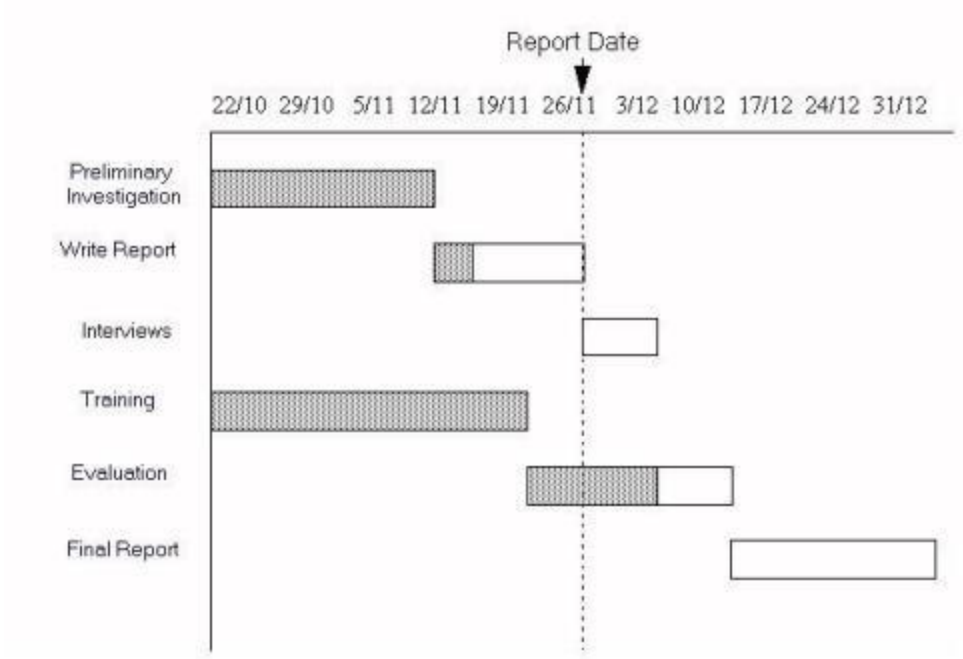


Figure 1: Gantt Chart

Gantt charts may be simple versions created on graph paper or more complex automated versions created using project management applications such as Microsoft Project or Excel.

A Gantt chart is constructed with a horizontal axis representing the total time span of the project, broken down into increments (for example, days, weeks, or months) and a vertical axis representing the tasks that make up the project (for example, if the project is outfitting your computer with new software, the major tasks involved might be: conduct research, choose software, install software).

Horizontal bars of varying lengths represent the sequences, timing, and time span for each task. Using the same example, you would put "conduct research" at the top of the verticle axis and draw a bar on the graph that represents the amount of time you expect to spend on the research, and then enter the other tasks below the first one and representative bars at the points in time when you expect to undertake them. The bar spans may overlap, as, for example, you may conduct research and choose software during the same time span. As the project progresses, secondary bars, arrowheads, or darkened bars may be added to indicate completed tasks, or the portions of tasks that have been completed. A vertical line is used to represent the report date.

Gantt charts give a clear illustration of project status, but one problem with them is that they don't indicate task dependencies – you cannot tell how one task falling behind schedule affects other tasks.

The PERT chart, another popular project management charting method, is designed to do this. Automated Gantt charts store more information about tasks, such as the individuals assigned to specific tasks, and notes about the procedures. They also offer the benefit of being easy to

change, which is helpful. Charts may be adjusted frequently to reflect the actual status of project tasks as, almost inevitably, they diverge from the original plan.

Gantt Chart Advantages

- Easy to understand
- Gives earliest completion date
- Provides schedule of earliest possible start and finish time.of activities

Gantt Chart Disadvantages

- Gives only one possible schedule (Earliest)
- Does not show whether product is behind the schedule
- Does not demonstrate the effects of delays in any one activity on the start of another activity, thus on project completion time.

Bar Chart

Diagrammatic Representation of Data

Data can be presented in the form of organized information, combined in tables or even graphically represented. Imagine seeing a set of data in the written form or in tabular form versus a graph that gives you the same information. Isn't it simpler and quicker to comprehend data if we can visually see it?

It is for this purpose that data can be organized graphically for interpretation in a single glance in Statistics. The two forms of graphical representation that we shall cover in this lesson are **bar diagram** and **histogram**.

Bar Diagram

Also known as a column graph, a bar graph or a bar diagram is ***a pictorial representation of data***. It is shown in the form of rectangles spaced out with **equal spaces** between them and having **equal width**. The equal width and equal space criteria are important characteristics of a bar graph.

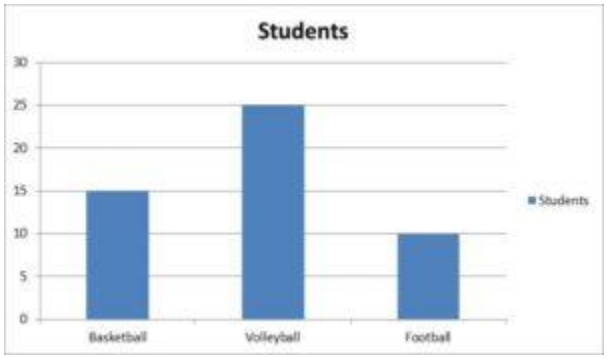
Note that the height (or length) of each bar corresponds to the frequency of a particular observation. You can draw bar graphs both, vertically or horizontally depending on

whether you take the frequency along the vertical or horizontal axes respectively. Let us take an example to understand how a bar graph is drawn.

Sports	**No. of Students**
Basketball	15
Volleyball	25
Football	10
Total	**50**

The above table depicts the number of students of a class engaged in any one of the three sports given. Note that the number of students is actually the frequency. So, if we take frequency to be represented on the y-axis and the sports on the x-axis, taking each unit on the y-axis to be equal to 5 students, we would get a graph that resembles the one below.

The blue rectangles here are called bars. Note that the bars have equal width and are equally spaced, as mentioned above. This is a simple bar diagram.

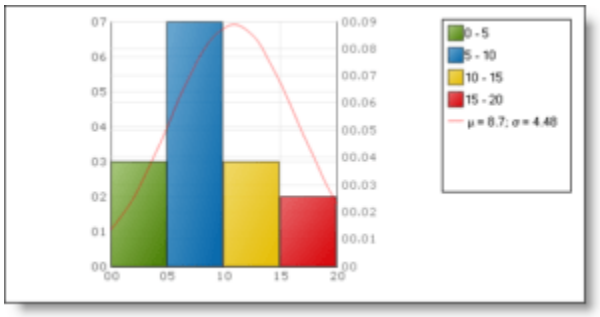


Histogram

A bar diagram easy to understand but what is a histogram? Unlike a bar graph that depicts **discrete data**, histograms depict **continuous data**. The continuous data takes the form of class intervals. Thus, a histogram is a ***graphical representation of a***

frequency distribution with class intervals or attributes as the base and frequency as the height.

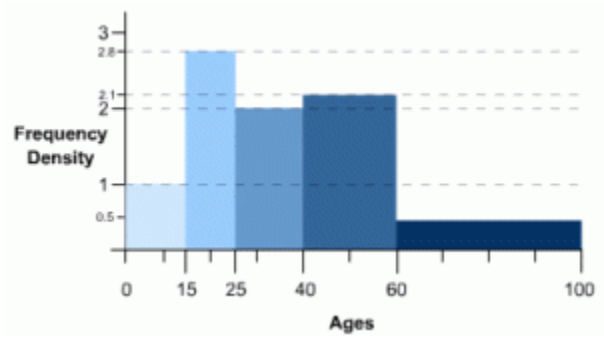
The key difference is that histograms have bars without any spaces between them and the rectangles need not be of equal width. So, we will understand histograms using an example.



In this case, see that we are considering class intervals such as 0-5, 5-10, 10-15 and 15-20. These are continuous data. In case, the class intervals given to you are not continuous, you must make it continuous first.

Here, you can interpret the histogram using the information that the graph gives. Consider the frequency to be as given on the left vertical axis and ignore the values on the right vertical axis. Thus, for the class interval 0-5, the corresponding frequency is 3. Again, for 5-10, the frequency is 7, and so on.

Note that we have taken the simple case of a histogram with bars of equal width. But as mentioned, it might not be the case if the class intervals are not even in size. In that case, you will get a histogram with bars stuck to each other (without any space between them) but with different widths. It could look something like this, but exactly how it will look depends on the data:



Production progress reporting and Performance Analysis

First of all, there's **Progress.** Progress lists employee's accomplishments, finished items, and closed tasks. This category gives a good assessment of how much work has been done.

Plans are immediate or long-term goals and Objectives. All of the items listed under Plans are potential items of Progress. However, leave room for changes and accept that your Plans are not set in stone.

Third, there's **Problems.** Problems lay out challenges and pitfalls. Some people leave correcting mistakes for last, but it is highly recommended to do this throughout the project.

When you keep in mind these three things, you already have what it takes to write a simple report. Furthermore, if you really want to succeed in communicating the details and nuances of progress reports, you have to take note of three questions: **Who**, **How** and **What**.

Who

Reports need to be concise and focused, so you should understand what your colleagues want. To help yourself with this task, ask a few questions:

- How are the readers connected to the project?
- Do they know the details and goals of the project?
- Are the readers comfortable with technical language?

How

Next, consider the tone of writing. Managers and executives may not understand the intricacies of employees' conversational style. Use longer, comprehensible sentences but also try to refrain from writing essays. Ideally, there should be 5-7 keywords per sentence.

What

The one mistake people tend to make when writing a progress report is avoiding writing about mistakes altogether. The purpose of progress reports is to objectively identify key difficulties and concerns and help them along the way. Even if the problem was already addressed, it needs to be put into writing to help avoid making the same kind of mistake in the future.

Secondly, keep in mind the relevance of your writing. Explain how every individual item connects and compares to Progress.

Keep It Simple

Even when progress seems small and changes are minimal, keep updating your reports. It enables transparency on all levels and can help assess challenges so you can plan your next actions accordingly.

Implementing Progress Reports

1. Make sure to explain benefits to employees

This one seems a bit obvious, but going ahead without explaining employee benefits risks employee buy-in later. You need to explain the 'whys' to everyone. Some easy benefits to sell include: employees having a voice within the organization, and raised productivity and focus on new plans.

2. Make sure that communication goes both ways

Create a culture that allows discussions to be held from both sides and allow team members to provide feedback to their superiors as well as the other way around. Making a culture that encourages feedback as the default model improves overall company communication and makes progress reports more meaningful to employees and managers alike.

3. Spend less time in meetings by using progress reports as a substitute

Use progress reports (and other goal setting software ideas like OKRs) to decrease the amount of time wasted at meetings by encouraging frequent updating through the web and mobile-based services. If your status meetings stay in one place, you'll save countless hours every month by writing instead of speaking.

4. Sign up with an online tool that offers you ready-made solutions

It may sound a little promotional, but online tools can make the implementation process so much easier. Progress reporting can be done via e-mail, word document or spreadsheet, but the challenges are far greater and you risk not having all of your information in one, easily accessible place. Combing through Google docs and emails is a colossal waste of time, after all. One of the advantages online tools have is that they automatically remind your team to fill their form, compile the received information, and then present it to you in a way that's both appealing and fun.

Implementing progress reports with a tool

1. Make the progress report meet your needs

Using a ready-made template does not mean that you have to adjust to its specifications. Actually, these tools are flexible enough to meet your standards and needs.

2. Write down Objectives and Key Results

Before inviting your whole team, make sure you have set up Objectives. The goals that need to be reached in a certain period and key results that help the team achieve these. Try this management technique used by LinkedIn, Twitter and Google.

3. Invite your team

After you have set up all crucial information, it is time to invite your team. Send them an automatic e-mail to sign up.

4. Contacting product support to give a quick demo for everyone

Explaining this new tool to everyone on the team might be a challenge. Especially when you are not too familiar with it. No worries, that is exactly why product support people are here for. Remember, there is no such thing as a dumb question. There are only dumb answers.

Performance Analysis

Reviewing the production performance of the reservoir is an important part of constructing a simulator for two principal reasons. First, it will help determine the correct input data required. Second, it will give direct clues as to the depletion processes, i.e., mechanisms occurring in the reservoir. In a number of examples, this process could have avoided problems, and in some cases, production performance data was useful in setting the scope of a simulation project.

Conceptual Model Reports

This is a process of putting together a consistent mental model. In the cases mentioned previously, some of the inputs were simply wrong. The only way to tell is to look at all aspects of the problem and ask if all the information adds up. This skill is essentially one of pattern recognition. Production performance data can be used positively to ensure this isn't overlooked, include a production performance evaluation as part of the simulation reports.

In the next two sections, two situations involving misconceptions about reservoir mechanisms are outlined. In the first case, a mistake was made in PVT data interpretation, and in the second case conclusions were made about a reservoir based on early and incomplete data. The significance of the latter case is previous interpretations often need to be scrutinized when subsequent work is done. The initial interpretations were likely the best interpretations available at the time they were made using the limited data available. The mistake is to continue these interpretations when they become inconsistent with observed performance.

Production System feedback

Feedback information is used to control the operations system, by adjusting the inputs and transformation processes that are used to achieve desired outputs. For example, a chef relies on a flow of information from the customer, through the waiter, about the quality of the food. Adverse feedback might lead the chef to change the inputs (for example by buying better quality potatoes) or the transformation process (for example by changing the recipe or the cooking method).

Feedback is essential for operations managers. It can come from both internal and external sources. Internal sources include testing, evaluation and continuously improving goods and

services; external sources include those who supply products or services to end-customers as well as feedback from customers themselves.

Strategies for corrective action

Step 1: Understand System Requirements (Plan)

Seeking understanding before action is the first step in creating an effective corrective action system. While quality standards spell out the various requirements, it may take some due diligence to understand exactly what needs to be done.

Documentation needs and corrective action procedural requirements must be accurately assessed in order to minimize implementation missteps.

Step 2: Plan the Process (Plan)

Planning is the design phase where decisions are made regarding the framework and mechanics of a corrective action system, including how to integrate the system into current operations.

Planning should also address personnel duties for the corrective action process. More specifically, procedures and conduits must be planned for completion of the following key tasks:

- Evaluating and assessing non-conformance triggers (customer complaints, audit findings, process parameters, etc.)
- Identifying legitimate non-conformances and related issues
- Capturing and entering issues into the corrective action process
- Investigating and getting to the root cause of an issue
- Determining and implementing solutions
- Reviewing, checking, and verifying the effectiveness of a problem resolution
- Using risk management protocols to ensure major non-conformances are top priority
- Establishing personnel responsibilities at various stages of the corrective action process

Step 3: Develop and Document (Do)

In this development stage, a cohesive corrective action system is created according to a well-developed plan. Teams are formed and given the authority and responsibility to fully develop the program.

Team duties include making sure the corrective action system is structured properly and is functional and compatible with existing quality management elements that provide nonconformance alerts.

Activities at this stage also include formal documentation of policies, procedures, and responsibilities for system caretakers and users.

Step 4: Conduct Training (Do)

Implementing any new system can significantly upset the norm, creating anxiety for those affected by the change. For something as big as a corrective action system that reaches across business operations, changes in management demand adequate training.

Training should involve interactive learning events that tie directly to job duties and should include hands-on practice, with on-the-job learning sessions, tabletop simulations, case studies, or a mix of all three.

If the plan is to use an electronic system to capture nonconformances, for example, then training must cover how the system works, explain access details, and describe pertinent data fields. Plus, personnel must be able to practice data entry using several different corrective action scenarios.

Effective training lays out the process from start to finish so that personnel gains the understanding, skills, and knowledge needed to carry out corrective action tasks accurately and with confidence.

Step 5: Implement (Do)

After training, implementation of the corrective action system should take place as soon as possible to lessen the gap between training and actual use of new skills and knowledge.

In this step, corrective action procedures go live, and system mechanisms are fully operational. Instructions and methods are in place for designated personnel to thoroughly manage corrective actions.

Step 6: Test the System (Check)

After several corrective actions travel full circle, the next feat is to check that the system performed as intended. The goal is to verify functionality and use. The check can happen by auditing a sampling of corrective actions from system input to investigation, resolution, and closure.

Audit findings may contribute to future corrective actions and changes. Where changes are made, it is important to notify and train affected personnel.

Step 7: Adjust and Improve (Act)

In a perfect world, everything goes according to plan. In the real world, glitches are likely. For this step, adjustments are made to improve the corrective action process.

Actions are taken to fine-tune the system to the point that nonconformance are reliably detected, evaluated, and resolved. The goal is to make corrective action management a consistent and effective process through continuous improvement.

A proper corrective action system detects and resolves nonconformance. By including the Plan-Do-Check-Act cycle in implementation efforts, launching a successful corrective action system is well within reach.

Role of control rooms in Production plants

A control room or operations room is a room serving as a central space where a large physical facility or physically dispersed service can be monitored and controlled. A control room will often be part of a larger command center.

A control room's purpose is production control, and serves as a central space where a large physical facility or physically dispersed service can be monitored and controlled. Central control rooms came into general use in factories during the 1920s.

Control rooms for vital facilities are typically tightly secured and inaccessible to the general public. Multiple electronic displays and control panels are usually present, and there may also be a large wall-sized display area visible from all locations within the space. Some control rooms are themselves under continuous video surveillance and recording, for security and personnel accountability purposes. Many control rooms are manned on a "24/7/365" basis, and may have multiple people on duty at all times (such as implementation of a "two-man rule"), to ensure continuous vigilance.

Other special-purpose control room spaces may be temporarily set up for special projects (such as an oceanographic exploration mission), and closed or dismantled once the project is concluded.

Examples of control rooms

Control rooms are typically found in installations such as:

- Nuclear power plants and other power-generating stations, many oil refineries and chemical plants
- Airlines, such facilities are often referred to as Operations Control Centers, responsible for flight operations dispatch, monitoring, and support
- Major transportation facilities, such as bridges, tunnels, canals, airports, and rapid transit systems, may have 24-hour manned control rooms to monitor and report on traffic congestion, and to respond to emergencies

- Various military facilities, ranging in scale from a missile silo to NORAD. The term "operations room" is also used.
- NASA flight controllers work in one of several "flight control rooms" in mission control centers; affiliated facilities such as the Jet Propulsion Laboratory have their own control rooms;
- Computerized data centers, which often serve remote users in multiple time zones worldwide
- Network operations centers
- Large institutions, such as universities, hospitals, major research facilities (such as particle accelerator laboratories), high security prisons, and theme parks
- Emergency services, including police, fire service and emergency medical service
- Call centers may use a control room to monitor incoming and outgoing communications of customer service representatives, and to provide general oversight of the call center.
- Rail Operations Centers, such as the Union Pacific Harriman Dispatch Center, control rail operations over thousands of miles of railroad. Train dispatchers staff these facilities 24/7/365 to manage efficient rail operations. In the UK these are usually operated separately by each Train Operating Company or by Network Rail and will include traincrew and rolling stock resourcing on a 24/7 basis. Connection to individual members of traincrew will usually be by mobile phone.

The control room concept is also used in non-emergency contexts:

- In television production, the master control is the technical hub of a broadcast operation common among most over-the-air television stations, television networks, and color suites.
- Sound recording studios typically each have their own control rooms where the recording is actually made

Special hazards and mitigation

Control rooms are usually equipped with elaborate fire suppression and security systems to safeguard their contents and occupants, and to ensure continued operation in emergencies. In hazardous environments, the control room may also serve as an area of refuge for personnel trapped onsite. The rooms are typically crammed with equipment, mounted in multi-function rack mount cabinets to allow updating. The dense concentration of equipment often requires special electrical uninterruptible power supply (UPS) feeds and air conditioning.

Since the control equipment is intended to control other items in the surrounding facility, these (often fire-resistance rated) service rooms require many penetrations for cables. Due to routine equipment updates these penetrations are subject to frequent changes, so that a control room maintenance program must include vigilant fire stop maintenance for code compliance.

Due to the nature of the sensitive equipment inside control room cabinets, it is useful to ensure the use of "T-rated" fire stops, that are massive and thick enough to resist heat transmission to the inside of the control room. It is also common to place control rooms under positive pressure ventilation to prevent smoke or toxic gases from entering. If used, gaseous fire suppressants must occupy the space that is to be protected for a minimum period of time to be sure a fire can be completely extinguished. Openings in such spaces must, therefore, be kept to a minimum to prevent the escape of the suppression gas.

A mobile control room is designated as particularly in high risk facilities, such as a nuclear power station or a petrochemical facility.[further explanation needed] It can provided a guaranteed life support for the anticipated safety control.