# Lec 23

## Flow Process Chart:

A flow process chart isa chart version of outlurst process chatr. The following points are to be conled while drawing flow process chart:

1. Its sets out sequence of flow.(Procedure, or Product.)
2. I record all the events in sequence using method study symbols or process chart symbols.
3. It makes distances travelled & time taken for complation amn activity.

 There are three types of of F.P Chart:

1. FPC Man 2. Equipment FPC 3. Material FPC
2. Man type FPC Records the activites of an operator ie what an aperator does.
3. This P.C records the manner in which equipment is used.
4. Material type PC rewards what happen to material I,e the changes in material conditions or location.

## Multiple Activity Chart

When no. of workers work in agroyp or an individual operator handles two or maor emachines their activities have to be coordinated for achieving proper results. A multiple actcity chart records simultaneously the activites of all the workers & machine on a sommon time scales & this show interrelation b/w them. A M.A.C has the following gtypes

1. Man , Machine chart
2. Man-Multi Machine Chart
3. Multi man chart
4. Multi man machine chart
5. Oneman handling one machine
6. One man handling more than one machines.
7. More persons working on one job /machine
8. More person workin on more machines.

## Purpose of M.A.C:

1. To detect idle times being inforce on machine & workers
2. To optimeize work distaributio b/w workers & machines
3. To decide no. of worker in a group
4. To balance the work teams to examine the interdependency of activites ultimately to develop an improve method of accomplishi atak & to have an effective labour cost control

## Construction of M.A.c:

1. A separate v erticle or a column is there ito represent each subject.
2. A moomon time scale is provided for all the subjects
3. Activties of each subject in relation to those of others are marked in the respective columns
4. Previously conducted time studies provides the time values or each activity.
5. A brief description of each activity is marked aon the cfhart
6. Workin & idle times are marked differfnt frequently on the chart.

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## Analysis of M.A.C:

After constrcing the chart it is tried to re arrang eht work cycle to minimize men U& machine idle times. With the help of this analysis operation are simplified. This also helps to combine or eliminate some fo the element

## Application of MAC:

A MAC is finds applicator in the folwoing areas:

1. Plant repair & maintance
2. Construction jobs
3. Plannig of teams work

## Gang Process Chart:

FPC is another type of chart of MAC which portrays the relationshopp of activites carries out by differtn number sofa group with reswpect otone another while dongg the job Tha aim is to reduct didle time & improve the efficney of the Gand Operation A G.PC looks like a man machine chart with diffenec the instead of one operator ther was no of operators or workers.

Flow Diagram: In manufacturing Shop therer movements of men & materials from voer location to another through process chart indicate the sequenc of events but they do not illustrate the movement of men material whilw the task is being accomplished. The pathe of movement can batter be visualzed by drqwing a diagram.Astring diagram is preferd over at flow diagram if paths of movenets are very much involved (conjusted) difficult to trace on a flow diagram

A diagram is suita lein more simple cases A F.D is drain or a diagram which dran to scale. I tshow the relative position of production machinery & marks the paths allowed by men & materials. Steps drawing flow diagram:

1. Draw to scale3 the plant of work area.
2. Mark the relative position of machine tools, benches, & operation , inspection booths.
3. Ffrom three differneobservation draw the actual movement in th mmaterials or workers on the diageram indicate the direction of movement.movenment can be marked in different colors.Process symbols may be needed on to the diageram

Fig show a simple diagram in which raw material flow the stores wher operation is being performe. The semi finzalized product is send to station B where another operation is being performed then it moves to place for insection & it is further sien to point is wher it halts for ashort while & ultimatelgoes out of factory.

**1 Operation**

**2**

**2**

**3**

**1 Delay**

**1 Store**

**1Transportionaion**

**5**

**4**

**1**