

- a) Method or Motion b) Time or Work Measurement

Work Study analyse the work into smaller parts in order to rearrange these parts to increase productivity & to find a standard time for each job.

It is divided into 2 parts :-

1. Method or Motion Study : It is a set of techniques developed to create new alternate methods of doing the job at a lesser effort & more effectiveness.

Steps of Method Study :-

(84)

1. SELECT → a Job

2. RECORD → all the data related to the job

3. EXAMINE → Recorded data

4. DEVELOP → few alternate methods

5. INSTALL → best alternate

6. MAINTAIN → the installed alternate

2. Recording Techniques :- These are designed to simplify & standardize, the recorded work. The most generally used recording techniques are :-

1. Process Charts (P.C)

- a) outline P.C b) Flow P.C c) Two handed P.C

2. Time Scale

- a) Multiple activity chart
 b) (i) SIMO } micro motion
 (ii) PMTS }

ESX 1

3. Diagrams

- a) Flow c) Travel chart e) Chromocycle graph
 b) String d) Cycle graph f) 2-D & 3-D Models & Templates.

1. Process Chart (P.C): It indicates the sequence of operation & the process chart symbols use are

○ - Operation

△ - storage

□ - Inspection

⇌ - Transportation

D - Delay or Temporary storage.

- a) Outline P.C: These charts are used to get a little bit of information about the process & it uses only 2 symbols i.e. Operation & Inspection

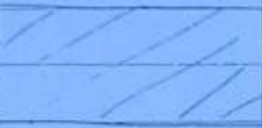
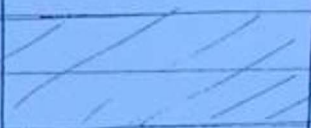
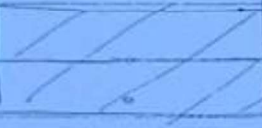
- *
 b) Flow P.C: These are of 3 types: Man, Material & Machine types. These chart are much detailed & carry additional informations. All the five symbols are used. These charts are normally used alongwith corresponding Flow diagrams to give complete picture.

- c) Two handed P.C: In this chart, activities of Left Hand & the Right hand of an operator are recorded on a common

time scale related to each other. All the Five symbols are used and these are preferred for short cycle, repetitive sitting jobs which are repeated many times a day.

2. Time Scale:

a) MULTIPLE ACTIVITY CHART (Eg)

Time	Operator	Machine	Remark
1.5 min			Job Loading
5 min			M/c working
0.5 min		- -	Job unloading

 working  Idle

Operator Utilisation = $\frac{2}{7} \times 100$, Cycle Time = 7 min
M/c Utilisation = $\frac{5}{7} \times 100$

In these charts, the activities of more than 1 item are arranged on a common time scale to show their inter-relationship, the study of these charts makes it possible to rearrange these activities so that their utilisation is optimised.

Gang Process chart: It is the form of multiple activity chart in which the activities of Gang or group of workers is synchronised on a common time scale while performing a similar task.

eg Formula-1 Racing car, after 1 lap.