

Work Content Estimation - Engine Shop



Key Points

- Mix model line balancing for single TACT on single line
- Overall improvement in productivity @ 31%
- Engine testing bed productivity improvement by @ 30 %

Client's Challenge

- Work Content estimation of Engine Assembly shop
- Developing work standards
- 2 TACT for mix model single assembly line
- Improvement in Manpower Utilisation
- Manpower Reduction
- Identify true potential of the plant



PMI's Approach

- Video shooting of all activities on the line
- Elemental details preparation for all activities
- Applied PMTS Technique on Engine Assembly activities
- Work content finalisation
- Manpower calculation for multi TACT
- Mix model line balancing for single TACT
- Online - Offline chart preparation for engine testing activity

Solution

- Multi model Work distribution / line balancing for single TACT (Reduction in production loss)
- Suggesting improvements & recommendation in engine testing & assembly areas
- Manpower utilization improvement upto @ 90% through Line balancing

OVER ALL SUMMARY REPORT		EXISTING TACT	Proposed Manpower
Area	TACT in Min.	2.13	1.8
	Production / shift (Nos.)	211	250
	Model	Model 435	Model 435
Sub assembly	Manpower	11.00	11.00
	Unit / Man	19.18	22.73
Main Line Assembly	Manpower	21	18
	Unit / Man	10.05	13.89
Engine Testing	Manpower	20	18
	Unit / Man	10.55	13.89
Application	Manpower	7	6
	Unit / Man	30.14	41.67
Grand Total	Manpower	59.00	53.00
	Unit / Man	3.58	4.72
	Productivity (Over All)		31.90%

ENGINE TESTING CAPACITY CHART												
PROPOSED CAPACITY & MANPOWER									Existing Capacity & Manpower			Improvement in Productivity
SR.NO.	ACTIVITY	WC IN SEC.	WC IN MIN.	CYCLE TIME IN MIN	CAPACITY / SHIFT / BED	Current Production / Shift	REQUIRED MP / SHIFT	Unit / Man	Capacity / Shift / bed	Required MP / Shift	Unit / Man	
MODEL 510 - MODIFIED BED												
1	STARTOR MOTOR & COUPLING FITMENT	67.08	1.12									
2	LOADING OF ENGINE	193.50	3.23	3.23								
3	ENGINE CYCLE TIME	1200.00		20.00								
4	ACTIVITY AFTER ENGINE START	381.03	6.35		16.00	195.00	13.00	15.00	12.00	17	11.47	30.77%
5	UNLOADING OF ENGINE	285.55	4.76	4.71								
6	ENGINE SEALING & COUPLING REMOVING	142.93	2.38									
TOTAL WC IN MIN.			17.83	27.94								

*Data shown here has been modified to protect client confidentiality