

Planning and Scheduling Are Both Required for Success

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Planning 4 Reliability

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Overall Benefit to Maintenance

- Planning 1/3
- Scheduling 2/3
- Cannot do scheduling without planning



Planning vs. Scheduling

Planning

- One work order
- Some craftpersons
- Hours

Scheduling

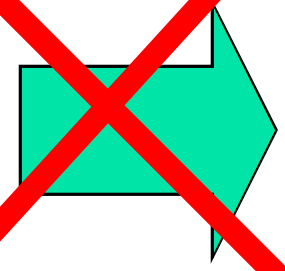
Multiple WO's
Whole crew
Week



Planning

- Is Not

Plan

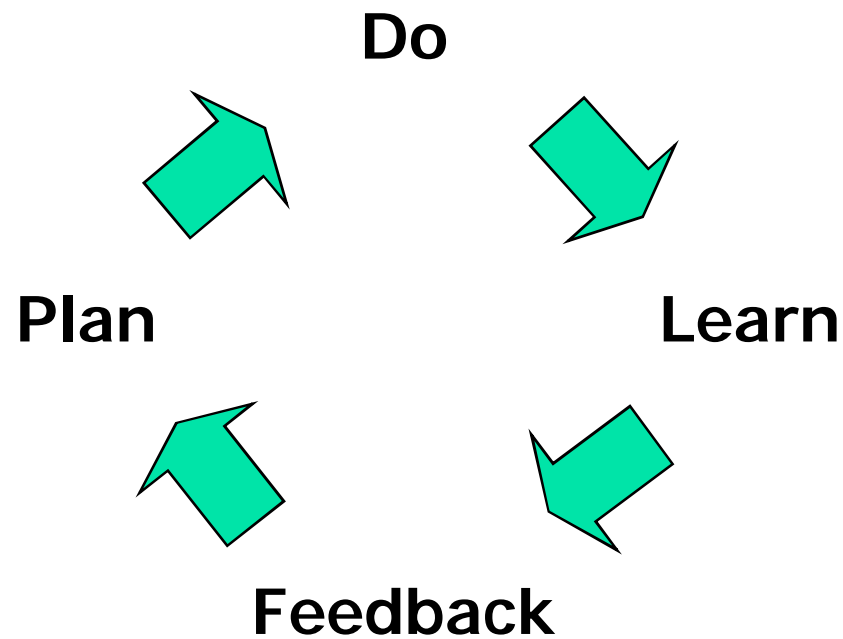


Do



Planning

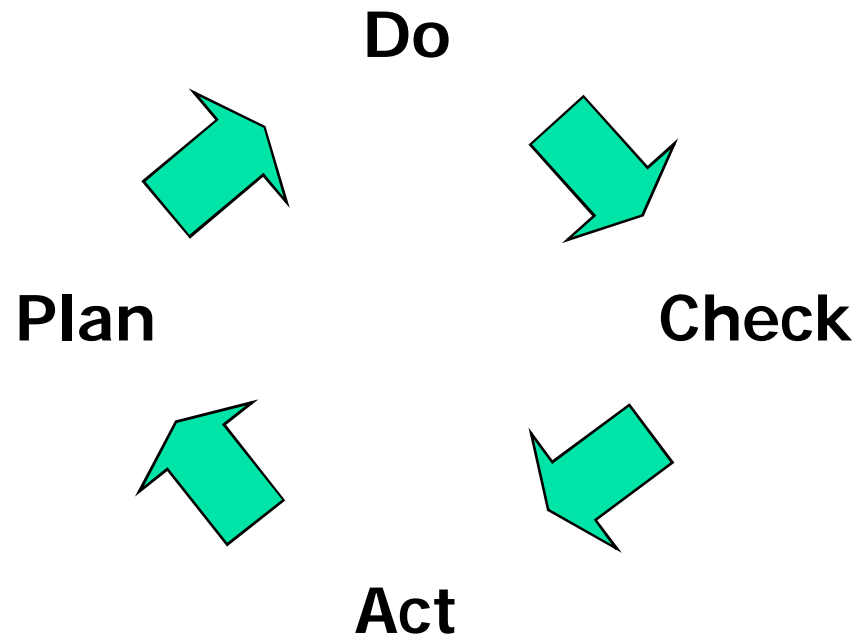
- Is a *Cycle* of Improvement





Planning

- Simply the PDCA Cycle
- W. Edward Deming 1950's





Planning

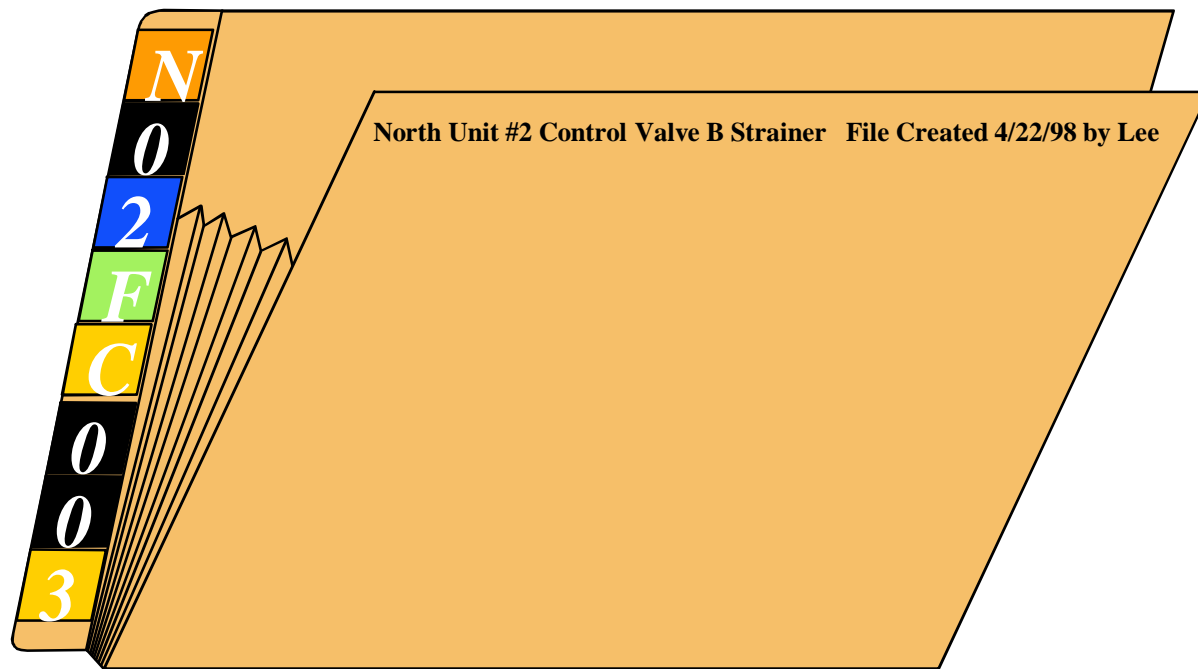
- Requires work orders

WORK ORDER #001234
REQUESTER SECTION
PLANNING SECTION
CRAFT FEEDBACK SECTION
CODING SECTION



Planning

- Requires files





Scheduling

- Is Not

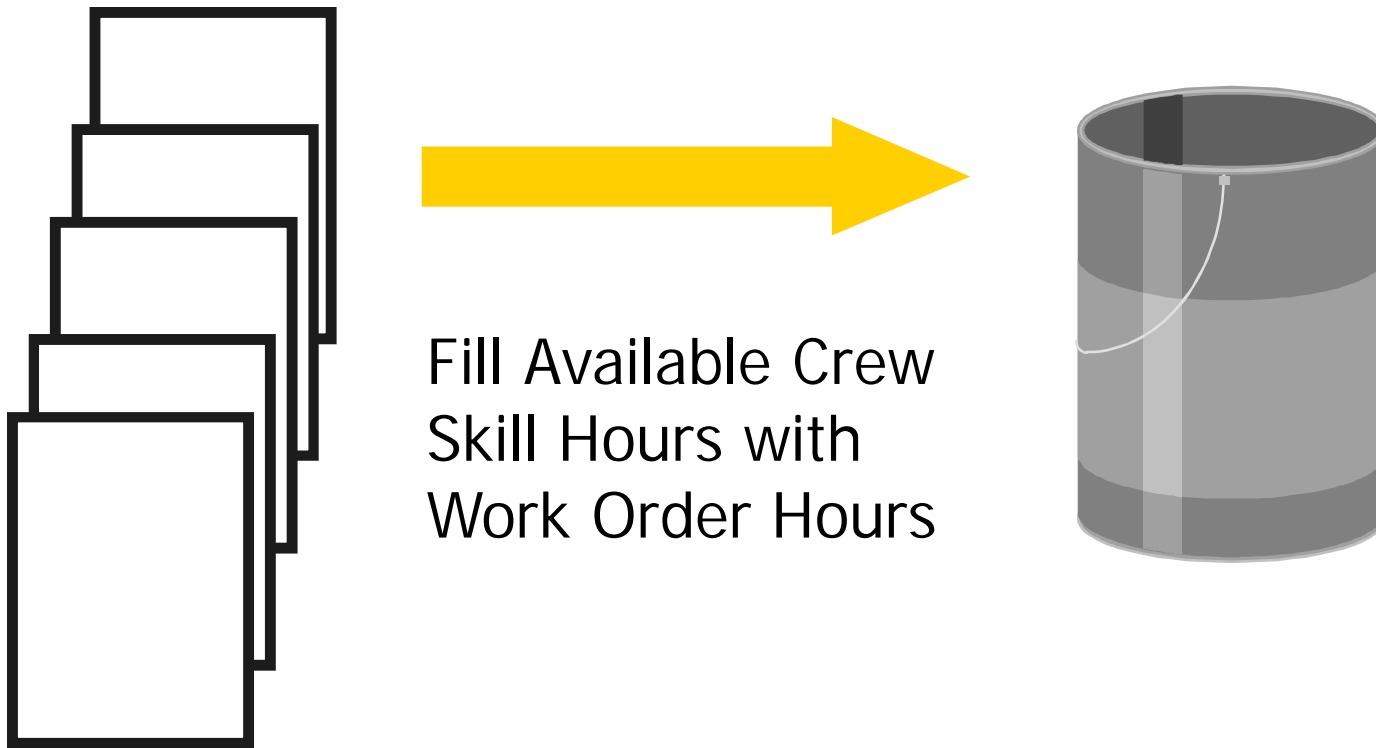
Hour by hour
with names

M	T	W	Th	F
Fred #15678	Mike #14356	Mike #14682	Mike #1765	Mike #12345
Mike #15983	Jack #13456	Fred #15234	Jason #18764	Jack #11123
Jack #15893	Jason #12345	Mike #15670	Fred #16387	
Fred #16222	Mike #15467		Mike #17865	Fred #13456
Jack #14567	Fred #18765	Mike #13458	Jason #15689	Mike #17856
Mike #13456	Jack #18976	Fred #13478	Jack #15672	Fred #15470
Jason #1839	Jason #12359	Mike #14579	Mike #14567	Jason #13600

(However, daily
schedule with
names IS done
DAILY by crew
supervisor)

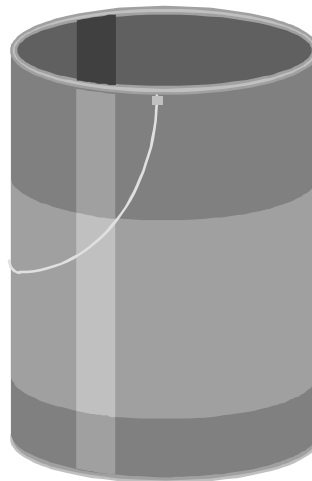
Scheduling

- Is an *allocation* of work for a week



Scheduling

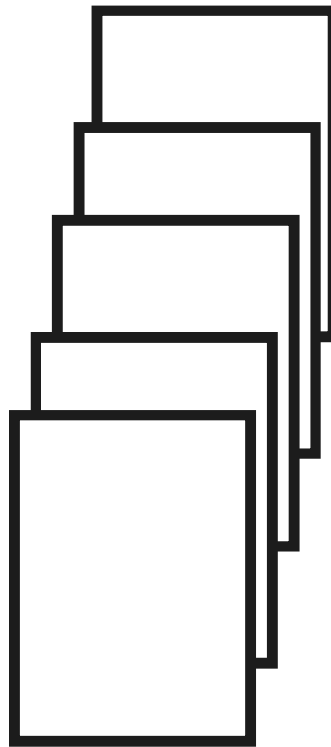
- Simply MBO Management by Objectives
- Peter Drucker 1950's
- The allocation of work is a goal





Scheduling

- Requires planned work orders





Quality and Productivity

- Quality
 - MTBF
 - Emergency and urgent WO's per month
- Productivity
 - Wrench time
 - WO's completed per month
- However, all of these are "Y" 's



Quality and Productivity

- $Y = f(X)$
- *Cannot* affect a Y directly
- *Can* affect an X directly to influence Y
- Analogy
 - Cannot affect daughters' school grades (Y)
 - Can affect their going to bed on time (X)
 - Can affect their doing homework (X)



Quality and Productivity

- $Y = f(X)$
- *Cannot* affect MTBF, high priority WO's, wrench time, and WO's completed/mo (Y's) directly
- *Can* affect planning and scheduling (X's)



Planning Is an X

- Affects quality
 - Better craft assignment, parts, tools, instructions lead to better jobs
- Affects productivity
 - Reduced delays *during* jobs



Scheduling Is an X

- Affects productivity
 - Reduced delays *between* jobs
- Affects quality
 - Increased productivity overall allows more time for troublesome jobs
 - Increased productivity overall allows more time for lower priority proactive work



Planning vs. Scheduling

	<u>Planning</u>	<u>Scheduling</u>
■ Quality	50%	50%
■ Productivity	20%	80%

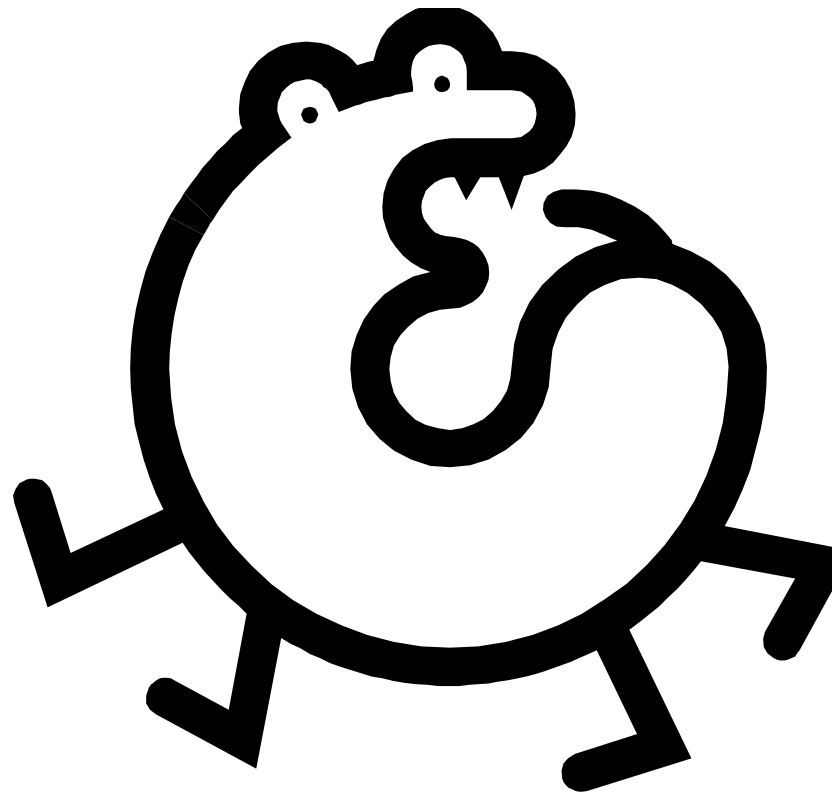


Essence of Planning and Scheduling

- Planning supports improving individual jobs repeated over time: a cycle of improvement for each job
- Planning also supports scheduling by identifying craft skills and labor hours
- Scheduling sets goals by assigning a sufficient amount of work for a week

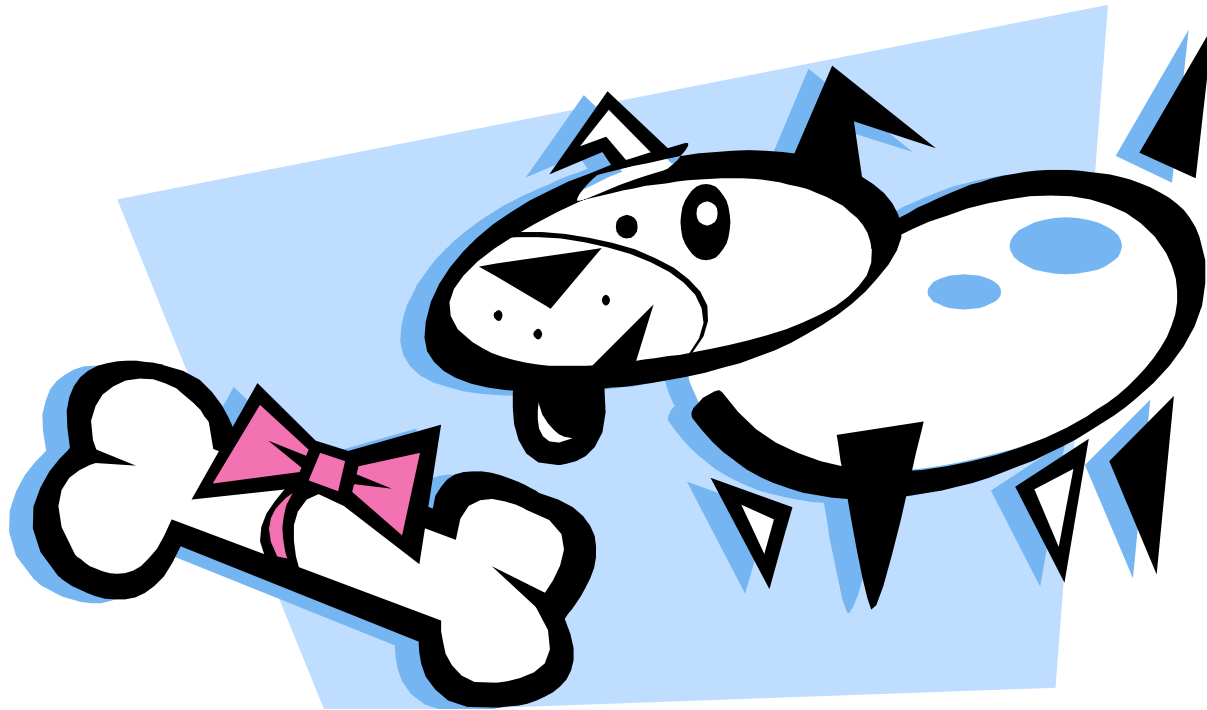


Planning without Scheduling





Scheduling with Planning





Planning and Scheduling

Both are needed



Questions



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