

Maintenance Planning: Employing Schedule Compliance

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About schedule compliance



The issue

"To be or not to be, --that is the question"

From *Hamlet* (III, i, 56-61)

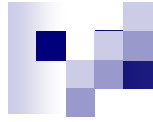
William Shakespeare



The issue

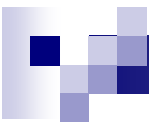
“How much work should the workforce do,
-- that is the question”

for us interested in scheduling



The questions

- How much work should the workforce do?
- How do we know if they are doing it?
- How do we know if they are not doing it?
- How can we improve?
- These are issues of managing productivity




How much work should the workforce do?

- Determine with planning and scheduling
- Match the available labor hours with estimated hours on jobs in the backlog
- Need estimated hours on backlog jobs
- Need a forecast of available labor hours
- Schedule for a week at a time



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



How do we know if they are doing it or not?

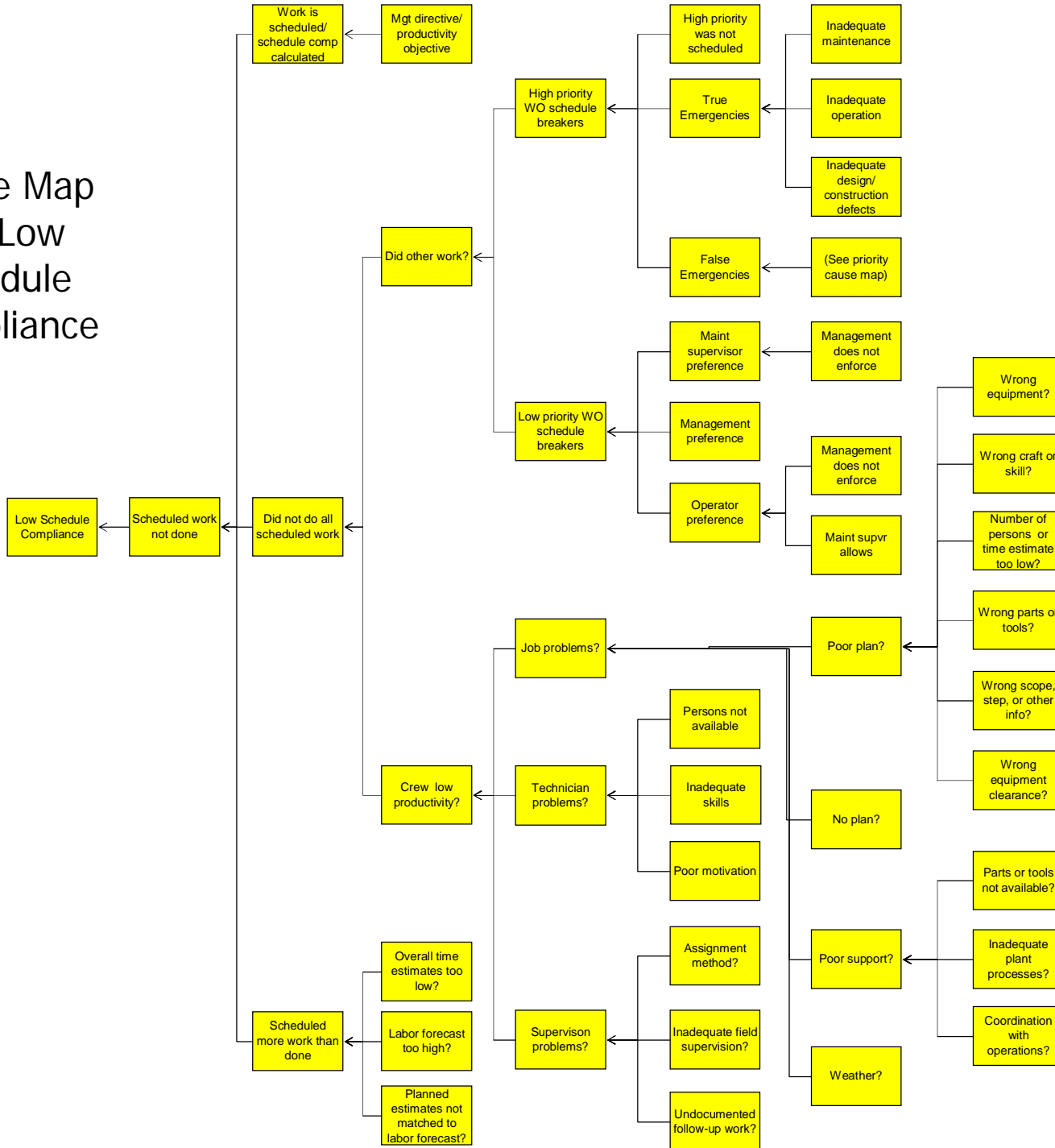
- Compare the scheduled work with the work actually done
- This is called schedule compliance



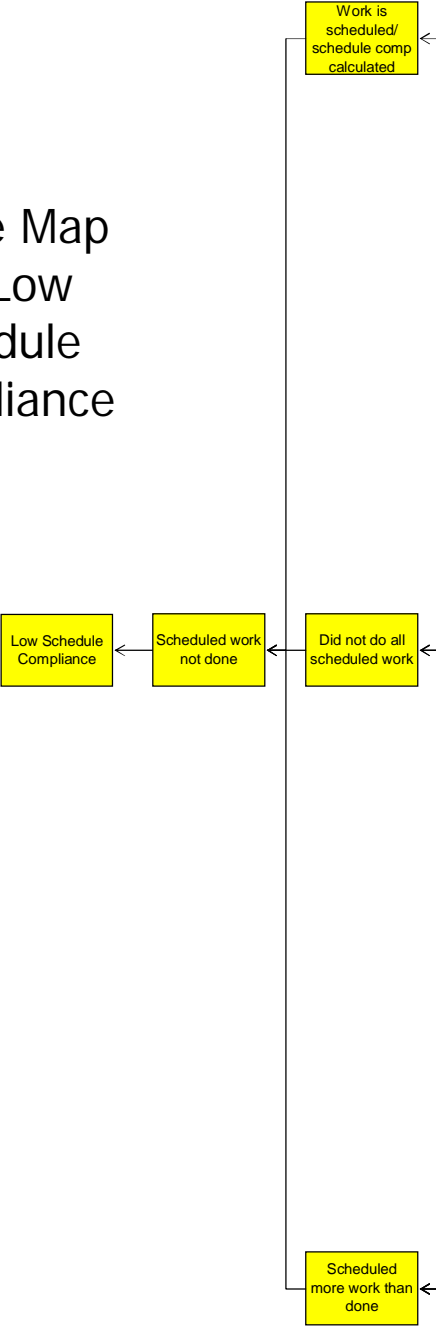
How can we improve?

- Analyze why crews have low schedule compliance and take action
 - Tool: A cause map helps identify areas of low schedule compliance to investigate

Cause Map for Low Schedule Compliance



Cause Map for Low Schedule Compliance

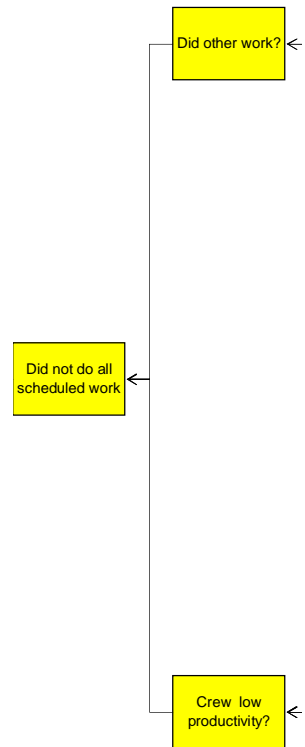




Low schedule compliance causes

- We measured SC !
- Did not do all scheduled work
- Scheduled more work than done

Cause Map for Low Schedule Compliance

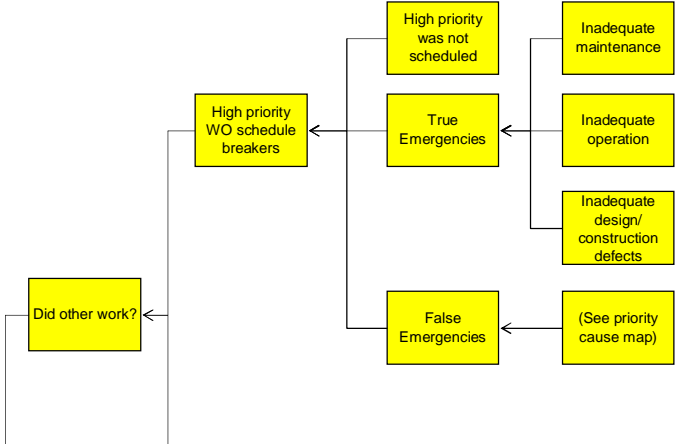




Did not do all scheduled work

- Did other work
 - High priority
 - Low priority
- Low productivity problems
 - Jobs
 - Technicians
 - Supervisors

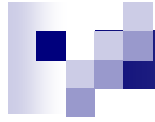
Cause Map for Low Schedule Compliance





High priority schedule breakers

- Wasn't scheduled
- True emergencies
 - Poor maintenance
 - Poor operation
 - Poor equipment
- False emergencies

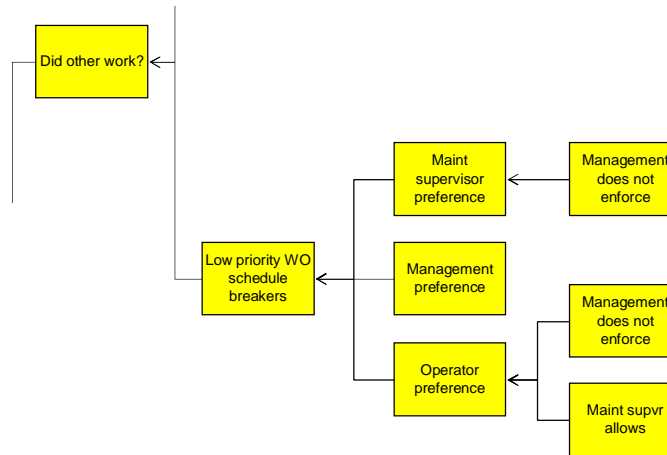


High priority schedule breakers

“Weekly schedule compliance is the ultimate measure of proactive maintenance”

John Crosson, Clorox, 1997

Cause Map for Low Schedule Compliance





Low priority schedule breakers

- Operators preference
- Managers preference
- Supervisors preference



Why low priority breakers?

Persons would rather work on (in order)

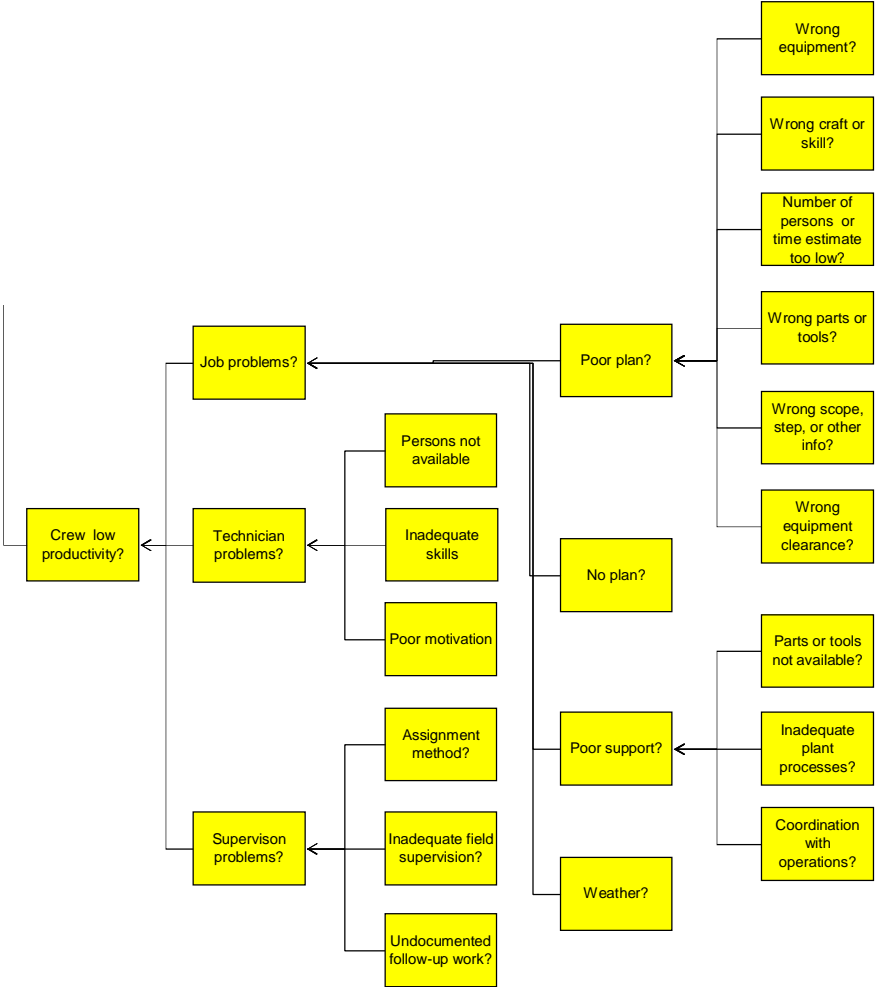
1. What they enjoy
2. What they are good at
3. What they think is important

BEFORE

What the plant thinks is important

John E. Day, Jr. Alumax, 1993

Cause Map for Low Schedule Compliance





Low productivity problems

- Job problems

- Poor or no plan, poor support, weather

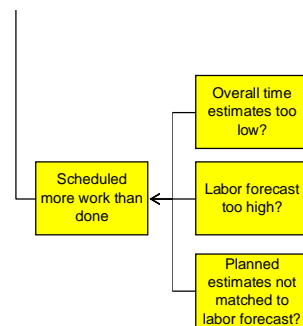
- Technicians


- Absent, poor skills, poor motivation

- Supervisors

- Assignment method, not in field, follow-up work

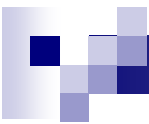
Cause Map for Low Schedule Compliance





Scheduled more work than done

- Planned job time estimates are too low
- Labor forecasts are too high
- Planned estimates not matched to labor forecast



Cautions with using schedule compliance:

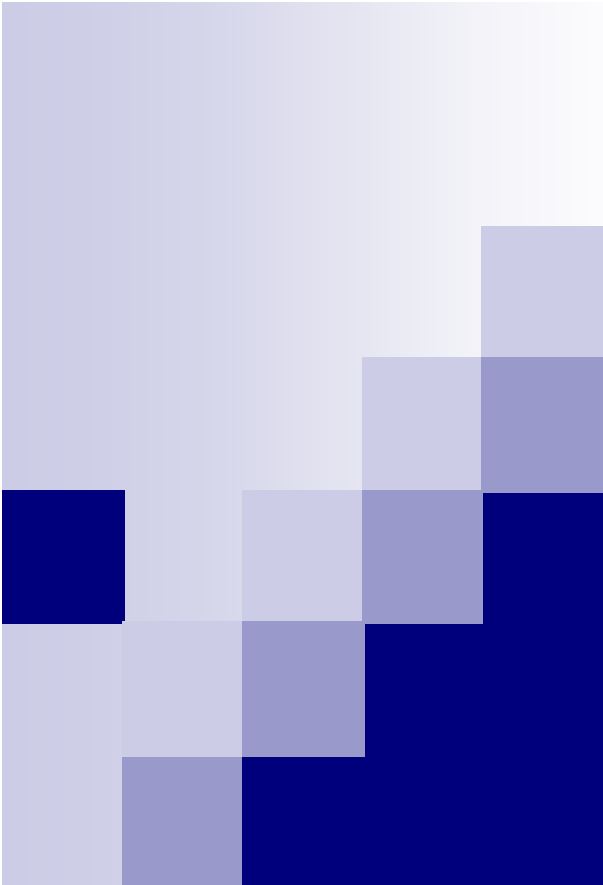
- Schedule compliance is not under total control of the crew supervisor; call it “schedule success”
- It’s “okay” to break the schedule
- We just want to know why and see what we can do about it
- Our objective is not schedule compliance; it is managed productivity



The application

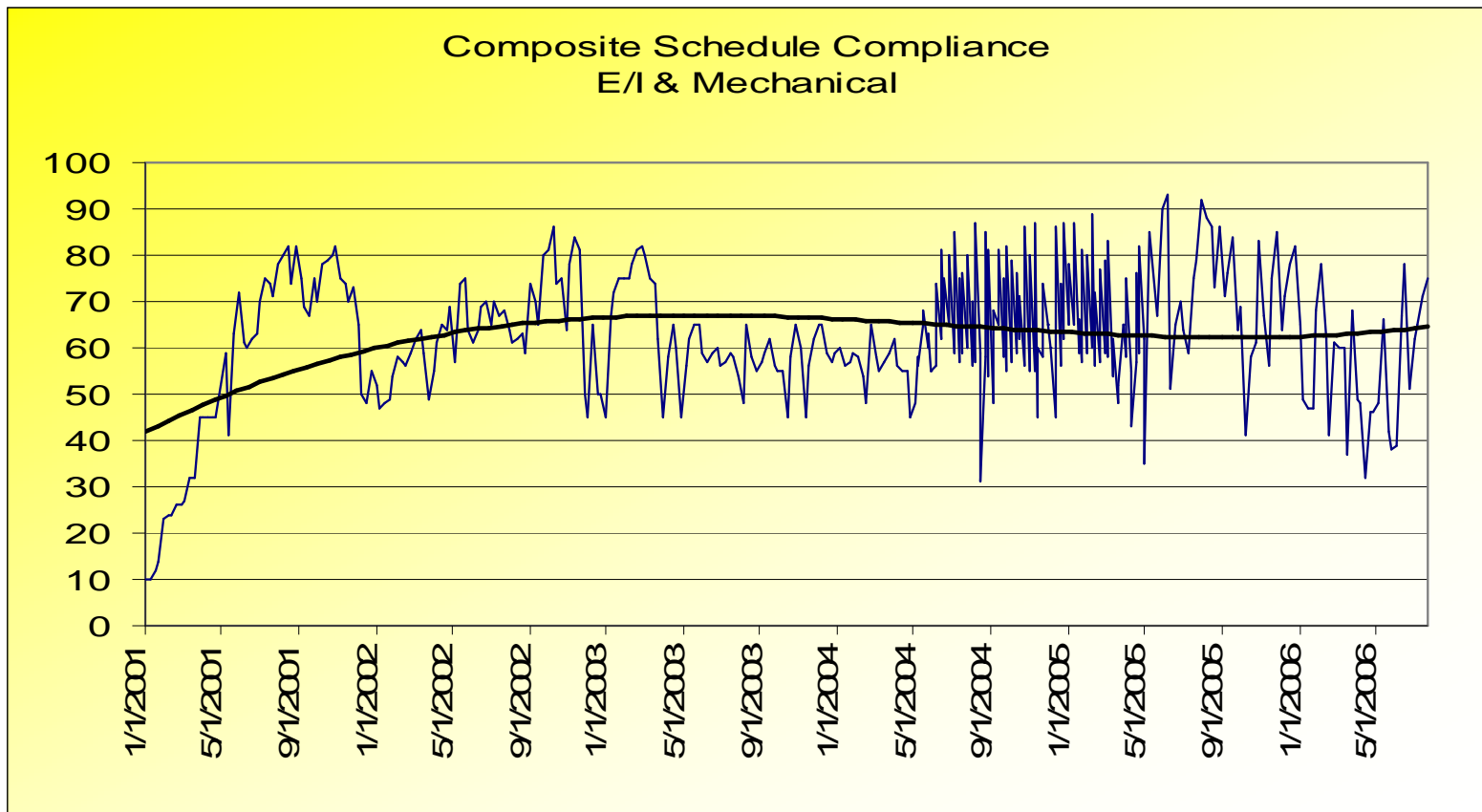
"Why, then the world's mine oyster,
Which I with sword will open."

From *The Merry Wives of Windsor* (II, ii, 2-3)
William Shakespeare



Scheduling at a chemical company in USA

Schedule compliance scores





Problems encountered

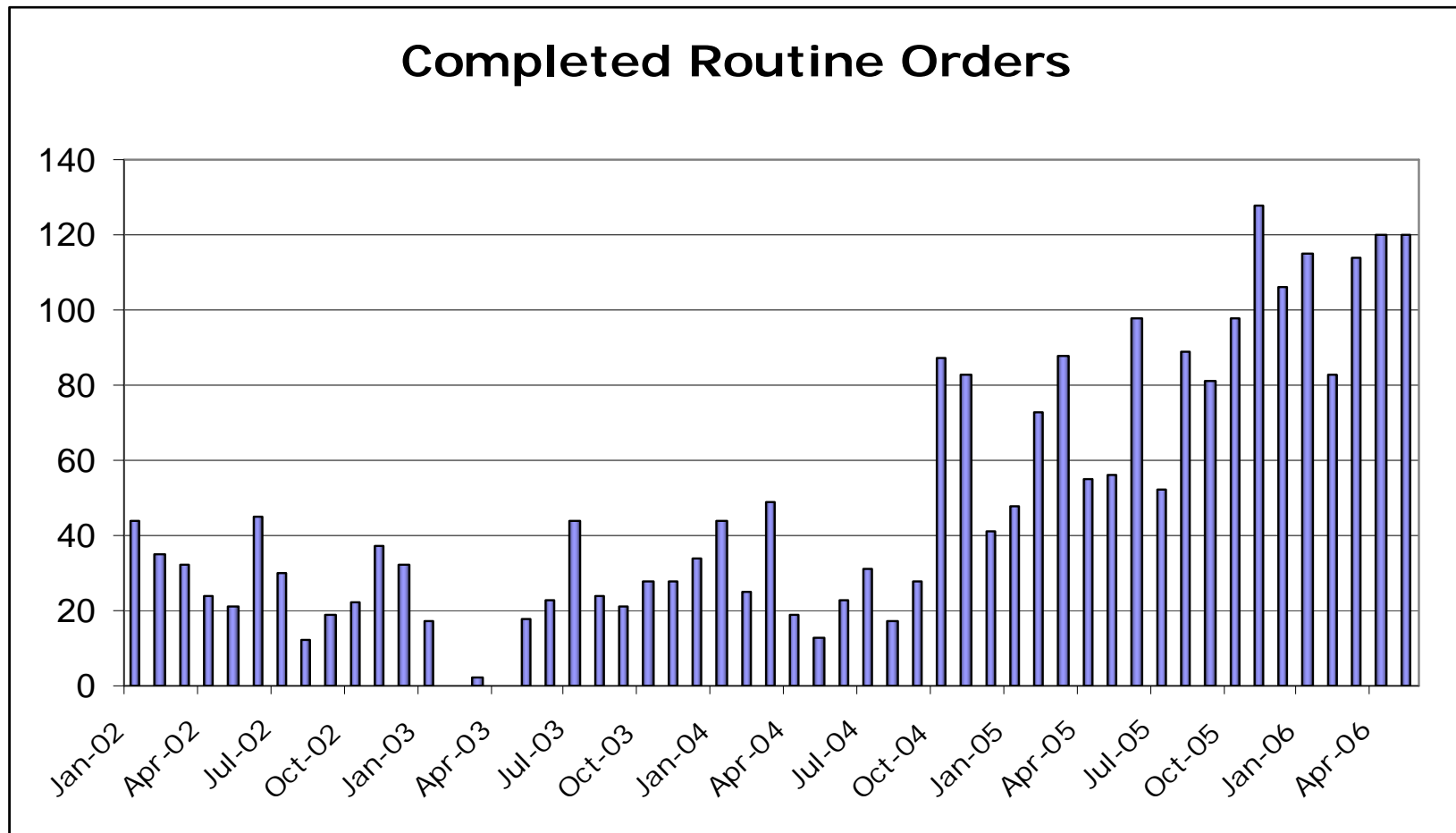
- Operations ignored schedules
 - Perceived as maintenance only process
 - Inadequate work requests
 - Did not care about backlog
- Supervisors ignored schedules
 - WBR (Work By Radio)
 - Did not care about backlog
- Poor work plans
- Poor PM's (scope and frequency)



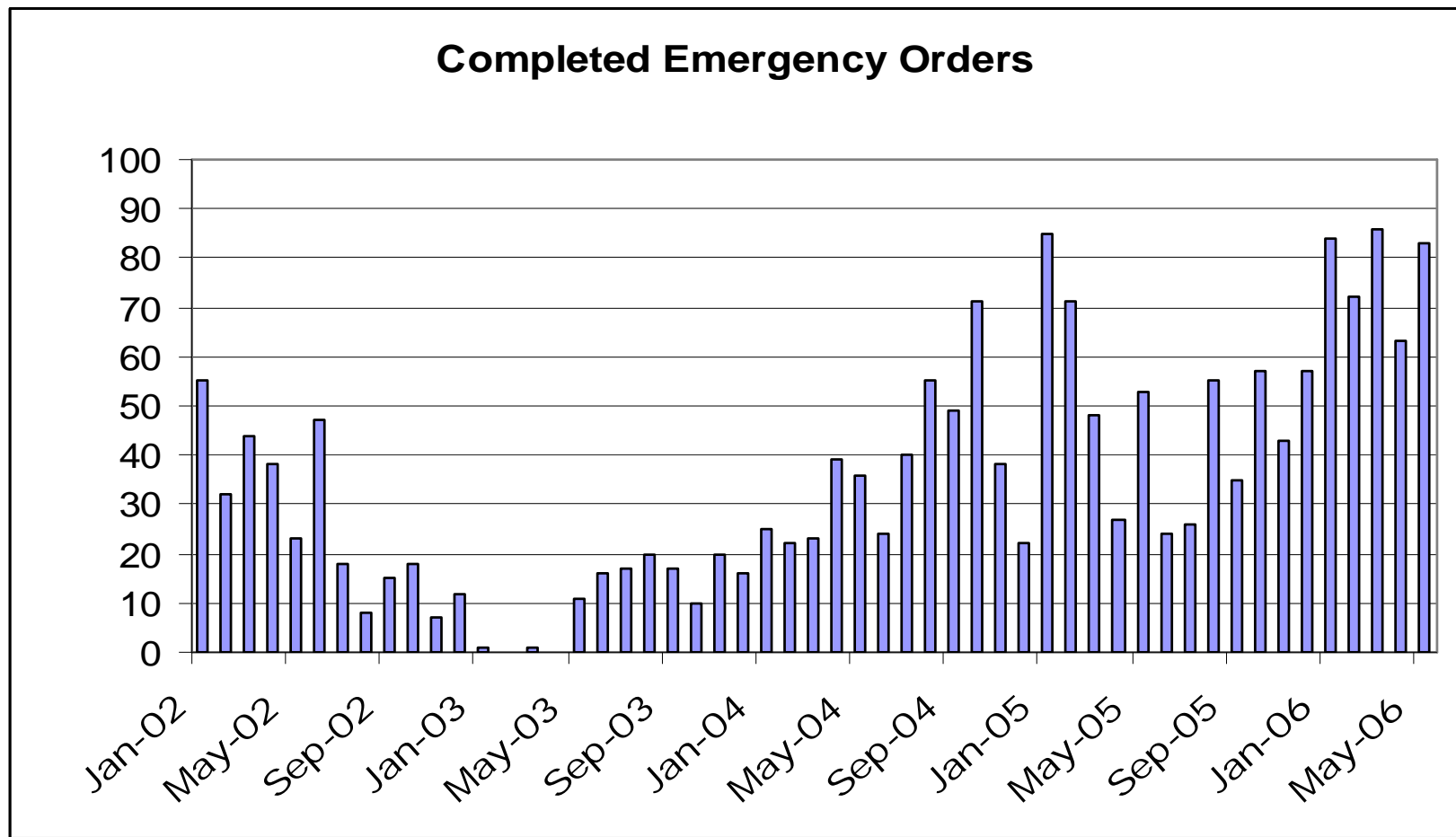
Problem resolutions

- Work with operations supervisors
 - Use SAP (CMMS), less WBR
- Work with maintenance supervisors
- Weekly backlog reviews
- Attention to improving plans with feedback over time

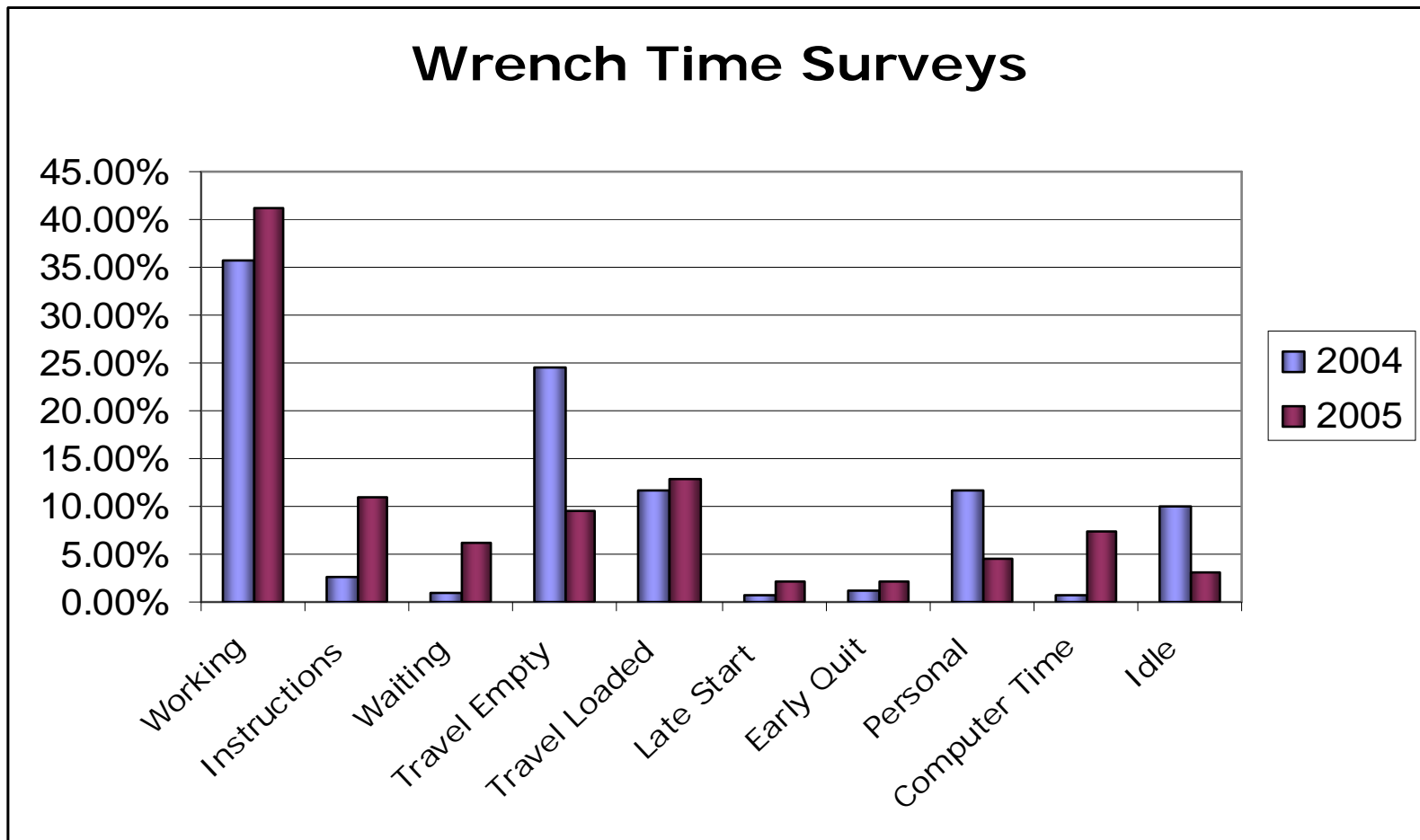
Success in maintenance



Success in maintenance



Success in maintenance





Lessons

- Must have formal processes
- Scheduling is critical
- Advance weekly schedule demands discipline from operations and maintenance
- No single KPI does it all; Schedule compliance is a good addition



Success in maintenance

Managed productivity is achieved by
focusing on schedule compliance



The end

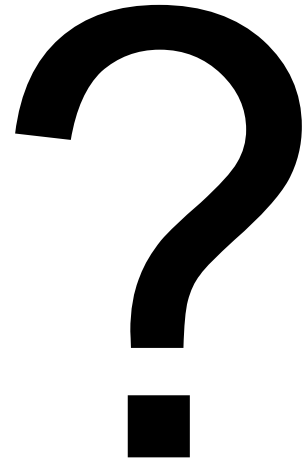
"Now go we in content"

From *As You Like It* (I, iii, 139-14)

William Shakespeare



Question time





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