How to Manage and Utilize a Lesser Skilled Workforce

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Common Challenges of Managing a Lesser-Skilled Workforce

• They don’t show up
• They don’t know how to bend pipe
• They want to get at a boy for anything
• I have to babysit everything they do
• If have to REDO everything they do
• The bottom line: It’s easier and faster for me to just do it myself

On the other hand:

• Do we need electricians to:
  • Unbox fixtures
  • Cut unistrut
  • Move pipe carts around
  • Make labels
  • Keep tools in working order
Session Topics

- Discuss the role the lower skilled labor play on a jobsite
- Identification of activities in which lower skilled labor can help with.
- Expectations of the rest of the crew and help from lower skilled trade
- Tracking the impact of lower skilled trade and other help on productivity and profitability
- Show examples of usage and opportunities for usage of lower skilled trade

Why is this Happening?
Shift in Electrical Construction Market

Segments % of Total Electrical Construction Market

- Industrial
- Commercial
- Residential


Forces of Market Change

Tools
- Technology advances
- Technology availability
- Technology cheaper
- Power tools, etc. - make installation easier

Environment
- Shift of work from industrial to commercial
- Proliferation of the market (customer choice)
- GDP overall shift to service work
- Customer's expectation has went from technical skill to perceived value

Materials
- Offshore purchasing of material
- Internet availability of material prices
- More "Plug and play" kind of material
- Margins for material no longer there for contractor (labor is more important)

Process
- Need for production skill is more important than technical skill
- Labor usage is only way to make money
- Need for agility
- Material management
- People management
- Time management

People
- Younger generation attracted to newer technology markets
- Skill required for "commercial" market not as high
- Power tools, etc. - make installation easier
- Production skill is more important than technical skill

Reference: 2007 ELECTRI International Market Share Report
What is Happening in Construction?

- Market is changing
- Less specialization is required
- Unionization is declining
- Types of markets are changing
- System Productivity is the main difference

Industrialization Happens Throughé

- Management of Labor
- Management of work
- Lean Operations
- Modeling and Simulation
- Feedback from the source

Reference: 2015 ELECTRI International: Industrialization of Construction®
Using Lesser Skilled Labor

WBS Concept & Principles

- Work
  - Fully identified by project team
- Breakdown
  - Level of detail, measurable segments
- Structure
  - 100% rule, no missing work, in hierarchical view
Job Work Breakdown Structure

Job ABC

Phase 1
- Demo
- Feeders C&W
- Branch C&W
- Fixtures
- Devices
  - Area A
  - Area B
  - Pent-house

Phase 2
- Feeders C&W
- Branch C&W

Involve Project Team for WBS Creation
# Managing Lesser Skilled Labor

## Short Interval Scheduling (SIS®)

<table>
<thead>
<tr>
<th>Day</th>
<th>Task</th>
<th>Scheduled Time</th>
<th>% Complete</th>
<th>Reason for less than 100% complete</th>
<th># hrs not worked as scheduled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon.</td>
<td>Install 24 fixtures –level 4</td>
<td>John /4, Chad / 4</td>
<td>80%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install 6 fixtures –level 4</td>
<td>John /4, Chad / 4</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Layout for level 5</td>
<td>John /4, Chad / 4</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tues.</td>
<td>Pour on level 4 East</td>
<td>John /4, Chad / 4, Chris/6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Install 6 fixtures –level 4</td>
<td>John /4, Chad / 4</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Level 6 layout</td>
<td>John /4, Chad / 4</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Set up racks for pulling FA cable</td>
<td>Matt /8, Eric /8, Doug /8, Chris /2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wed.</td>
<td>Conduits in slab on west pour</td>
<td>John /4, Chad / 4, Chris/6Matt /8, Chris /2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pull 50% of power conductors in Zone B</td>
<td>Eric /8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pull 30 feet of FA cable</td>
<td>John /4, Chad / 4, Chris /2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Personnel & Processes

- Selection
- Onboarding
- Training
- Evaluation
- Feedback

Managing Lesser Skilled Workforce by Externalizing Work®

- Safer
- More reliable
- More predictable
- Controlled environment
- Manpower allocation / buffer
- Reduce project duration
- Get more work
Job Productivity Assurance and Control

Track Productivity Trends

- 14%
- 25%
- 22%
- 6%
- -21%
- -40%
- 0%
- 20%
- 40%

Productivity Differences
Track Productivity Trends by Category

Thank You!
Questions?

Donâ€™t forget:
Â· 9:00am-1:00pm NECA Show
Â· 11:15am-2:30pm Closing General Session
Â· 7:15pm Closing Celebration