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## **INCREASING PRODUCTIVITY IN ELECTRICAL CONSTRUCTION**

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“How to Make a Good Estimate Look Even Better” was an article published in the August 2017 issue of Electrical Construction and Maintenance, that I wrote. It had such great reviews and response, I thought that I would expand on this subject.

Here is the link to that article on my website.

<https://www.electricalestimating101.com/published-articles/>

### **WHAT IS PRODUCTIVITY?**

Labor productivity is the physical progress achieved per hour. It can be measured two ways:

1. The effectiveness with which labor is used in the construction process
2. The relative efficiency of labor doing what is required to a given task at a given time and place

Every contractor must understand that labor productivity is never in a constant state. It is in constant motion, either improving or declining. Any owner would be naïve to think that labor productivity is improving without any effort from the management. Waiting until the project is 90% complete to make corrections to increase labor productivity is futile.

### **LABOR REPORTING**

The company must have a labor reporting system for gathering data from the field as the first step in improving labor productivity. Failing to have a way to track labor productivity by system, (ie: conduit, wire pulling, site lighting, feeders, lighting, branch, fire alarm, etc.) the contractor will never know where to make adjustments in estimating and project management methods.

Trimble ACCUBID software has a grouping feature where the estimate can be grouped by Labor categories. The table below is a sample from my software.

LABOR SORT CODES			
Code	Description	Code	Description
50	Temporary Power	250	Undercarpet Cable
60	Demolition	260	Traffic Loop Cable
75	Overhead & HV Cable	300	Distribution Installation & Termination
100	Conduit - Fittings - Boxes - Coring	320	Grounding
105	Concrete Cutting / Fill	350	Motors & Equipment Termination
108	Cutting / Patching / Painting	360	HV Terminations
110	Surface Raceways	380	Structured Cabling Terminations
115	Center Spline Cable Tray	400	Fixtures
120	Cable Tray & Firestopping	405	Traffic Signals and Signs
125	Poles - Excavation - Civil Work	410	Airport Lighting
130	Trench Duct	450	Branch Terminations
140	Wireway	500	Devices
150	Racking & Accessories	600	Control Devices
160	Underfloor Duct	605	Traffic Signal Controls
170	Bus Duct	610	Instrumentation
180	Lighting Duct	700	Electric Heating
190	Flex Wiring Systems	720	Photovoltaic Solar
200	Wire Pulling	800	Equipment & Tools
220	Fiber Optic Cable	900	Testing & Documentation
230	Copper Cable	990	Misc Construction Materials

Your labor reporting codes may not need to be as extensive as the table above, but you should determine the simplest way to track estimated labor categories to field production categories. It needs to be one that everyone can easily understand, track, and be consistent.

A good estimating software will allow the contractor to customize this reporting. If you are deciding about electrical estimating software, please contact me, I can offer some guidance.

## COLLECTING THE LABOR DATA

Collecting and tracking labor data will take time and focus, but it will be worth it to know where adjustments are needed to increase productivity that will increase profit. Good labor tracking and reporting will need the following as a minimum:

1. A detailed estimate labor report
2. Weekly time sheets for field workers with labor codes
3. A labor tracking or project management software
4. An office worker to record and total labor hours weekly by project

Whichever method you decide is best for your company and operation, be consistent. Consistency is key. Consistency will create accountability and maintain your message.

## **DEMOTIVATORS IN CONSTRUCTION**

Demotivators will vary from geographic location and within any given company.

The most common include:

1. Lack of the right materials, tools, or equipment
2. Poor relations between workers and management
3. Poorly organized projects
4. Poor communication
5. Extended overtime schedules, especially during summer time
6. Lack of recognition of outstanding efforts
7. Disrespectful treatment
8. Unsafe work conditions – ie: inadequate lighting
9. Unsafe ladders
10. Unfair work assignments
11. Incomplete engineering/design work
12. Adverse weather conditions
13. Lack of cooperation between different trades
14. Poor or lack of supervision
15. Ill treatment by supervision
16. No participation in the decision-making process
17. Restrictive or burdensome procedures.

## **MOTIVATORS IN CONSTRUCTION**

Here are some motivators that will help with morale and productivity:

1. Good planning
2. Efficient communication
3. A good work environment
4. Cleanliness
5. Safety
6. Adequate sanitary facilities
7. Protection from inclement weather
8. Fair, but firm discipline
9. Compensation that match the worker's skill and ability
10. Recognition for extra effort
11. Clear work goals and objectives

## **METHODS OF IMPROVING PRODUCTIVITY**

### **1. Training programs**

Providing training programs is a great investment in your labor force. Safety training is always good. Providing specialized tasks such as lift operation, high voltage cable splicing, and thermal imaging will be helpful for selected personnel.

### **2. Incentives for extra effort and great performance**

Everyone loves to be recognized for a job well-done. Studies have shown that it is not the amount of recognition that is important as much as being recognized. Gifts cards to a local grocery store, a Home Depot, or other retail businesses will improve productivity. Some companies have season tickets to local sporting teams. Giving a hard-working employee tickets to a game is an option. Money is a great motivator.

### **3. Give the project manager and foreman a target to hit.**

Let the project manager and foreman know the total labor hours in the project. If they complete the project in less hours, reward them.

### **4. Competition between projects and / or foremen**

Some companies have a monthly newsletter with information about current projects, upcoming projects, new staff, and promotions of employees. Newsletters are good for safety reminders, toolbox talk topics, and NEC changes. Here is a list of options for project recognition:

- Foreman of the month
- Electrician of the month
- Employees with perfect attendance
- Safety awards – no near misses, or injuries, or OSHA violations
- Cleanest project
- A unique accomplishment

Use your imagination. Have a brain storming session with all project managers and come up with what you think will motivate your employees.

### **5. Good supervision**

A good employee doesn't need to be micromanaged. Good supervision will provide information, tools, materials, and skilled labor to complete a project. A good supervisor will remove all possible excuses from the employees for not producing. If they have all necessary information, tools, materials and don't get the job done, declare war in incompetency. The risks are just too great and costly.

## **6. Regular site visits from office management and / or ownership**

Someone from management other than a project manager needs to visit project sites. Never forget, “You get what you inspect, not what you expect.” A common complaint from the field is that the ownership doesn’t know what is happening on the jobsites. The best times to show up on a project site is at starting time, quitting time, beginning of lunch, and end of lunch time.

## **7. Proper correction along with proper recognition**

Many times, correction is necessary. Constantly correcting workers without giving recognition where it is due, will create resentment. The slang phrase is referred to as using the sandwich method.

## **8. Preplanning**

Dumping plans and specifications on a foreman is not the best way to start a project. The only way a contractor makes money is installing electrical material. A well-organized preplanning of the project will increase productivity. The foreman should be organizing material, tools, and labor to install the work. For example, a preplanner could layout feeders that could be installed in the slab. Site lighting materials could be prefabbed in the shop and then delivered to the site identified for each base. There are many tasks that can be planned in advance for a quicker installation.

## **9. Have a proper project turn-over meeting.**

The estimator who estimated the project should be allowed to recount all quoted package items. Print detailed labor reports with labor breakdowns for the project manager and foreman. All addendums and revised drawings should be incorporated into sets for the foreman and project manager.

## **10. Have quarterly foreman’s meetings.**

Meeting with all the foremen quarterly will give management an opportunity to be preventative as well as corrective. It is always better to prevent problems than to fix them. Have an agenda. Be informative of the status of current and future projects. Management should make themselves available to foremen to discuss issues that they might be encountering with their projects.

## **11. Adequately supply projects with tools and materials.**

I would rather hear the warehouse supervisor complain about too much materials being returned from projects than to hear that 10 electricians are standing around waiting for material.

## **12. Get involved early, waiting until the project is almost complete, is just foolish.**

A good accurate labor reporting system will allow you to check a project’s status at anytime over the duration of the project. It is like a tooth that is giving you problems, the

sooner you see the dentist the better. Waiting until mid-night when the tooth pain is unbearable will lead to regrets of not fixing the problem sooner.

### **13. Avoid worker favoritism.**

Showing favoritism for certain employees is sure to filter through the rumor mill. Everyone likes to feel as if they have equal treatment from the ownership.

### **WHAT TO DO?**

When a family is having financial problems, there are two ways to fix the problem. Increase their income or decrease their outgo. Doing both, will fix the problem much faster.

So, why not work at increasing motivation for greater productivity and removing demotivators of productivity in your company. This is certain to increase profit and profit is the contractor's reward for hard work and risk.

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