Jim Adrian's Construction Productivity Newsletter

Volume 21 Number 1 (21st Year of Publication)
(309) 692-2370 email: jadrian@insightbb.com
homepage http://hilltop.bradley.edu/~jadrian/

Adrian International LLC
5317 N. Woodview Ave.
Peoria, Illinois 61614

CONSTRUCTION PRODUCTIVITY QUIZ SUMMARIZES 20 YEARS OF PAST ISSUES

Over the past twenty years, each and every issue of this productivity newsletter has attempted to inform and educate the reader as to:

a.) the importance of labor and equipment productivity to the time, cost, quality, and safety of the construction project
b.) the opportunity to increase construction productivity
c.) how to measure and improve construction productivity

After twenty years of publishing the newsletter, my professor role tells me that it might be time for a quiz. No worry; there is no grade! However, it may be useful to occasionally test one's knowledge of the subject matter and the content of prior issues. The real grade is earned through implementing new, creative, proactive productivity improvement steps at the job site. You may want to have your supervisors take the quiz. The suggested answers follow the questions.

(T-True or F-False)

1. ____ Productivity is defined as units of output per person hour worked.
2. ____ Productivity has increased faster in the construction industry than it has in the automobile industry.
3. ____ The amount of non-productive labor time at a construction project varies from project to project but averages around 16%.
4. ____ There is typically more productivity variation or risk with the concrete forming task than there is with the concrete placement task.
5. ____ The construction supervisor has typically used a monitoring or accounting approach to construction productivity as opposed to a critiquing or analysis approach.
6. ____ The construction firm has typically benchmarked their best productivity for a work task as a means of setting out estimating and production goals.
7. ____ A worker typically has a higher hourly cost than a construction crane.
8. ____ The majority of construction workers view themselves as working for a firm, not a job.
9. ____ The typical construction supervisor expends more time and energy coming down on problems as opposed to investigating opportunities.
10. ____ In the typical construction firm, the project estimate is broken down into daily production goals for the workers.
11. _____When equipment is moving from one location on a construction project to another location at the project site; it should be viewed as being in a productive state.
12. ____ Money is the single most important motivator to all workers.

13. ____ Job site working conditions are viewed as a motivating factor as opposed to a maintenance factor.
14. ____ On the majority of construction sites, equipment is in a non-productive state more often than is labor.
15. ____ Planning entails when something has to be done and scheduling entails determining what has to be done.
16. ____ The work activities that are defined for a project plan and schedule should not be the same as the take-off items in the project estimate.
17. ____ The project activities that are the most difficult to update when updating a project schedule are the work activities that have not started as of the date of the update.
18. ____ The construction supervisor should be more attentive to a work activity or task on the critical path as opposed to a work activity that has considerable schedule float.
19. ____ Requiring a subcontractor to fill out a daily production planning and schedule form is an example of requiring the subcontractor to manage itself.
20. ____ When a construction worker works ten six hour days doing hard physical work, the worker only losses productivity in the hours he or she is working past the normal forty hour work week.
21. ____ The ratio of supervisory hours to worker hours is a factor in determining worker productivity.
22. ____ Workspace is a factor in determining the amount of construction productivity that is achieved.
23. ____ The construction industry has historically used a job cost report that is produced weekly or monthly as a means of monitoring productivity.
24. ____ There are three elements to an effective control system; 1.) plan, 2.) compare, 3.) reprimand.
25. ____ Continuous improvement entails the measurement of a defect and an analysis of the cause of the defect.
26. ____ It is always cheaper to utilize equipment to do a construction work task than it is to use labor.
27. ____ When a construction supervisor chooses to work overtime, one of the benefits is that the hourly rate for the owned equipment is reduced.
28. _____ Group behavior at a construction project is always detrimental to the productivity improvement objective.
29. _____ A one to four week look ahead schedule attempts to reduce non-productive time by setting out long lead items.
30. _____ Requiring a subcontractor to set out planned work effort as opposed to when the firm will complete the work is an example of process management.
31. _____ The construction industry spends more money and time on providing education to their employees than does most other industries.
32. _____ When more workers are hired for a project than was planned, the contractor obtains increased productivity owing to the “learning” process.
33. _____ One of the typical negative impacts on productivity that occurs when change order work is performed is that there is a dilution of supervision.
34. _____ Concrete forming offers more opportunity to increase productivity than does the placement of concrete.
35. _____ Communication, pride, measurement, and money are all motivators of workers.

Suggested Solutions:

1. True The definition is correct. However, productivity is affected by many factors including work effort, management, weather, planning, etc.
2. False Productivity has increased slower in the construction industry than it has in most industries including the automobile industry.
3. False Most studies indicate that there is in excess of 40% non-productive time.
4. True Risk is defined as variation from the expected average and the nature of forming is such that there is a wide variation in forming productivity from one day to the next; the supervisor needs to pay considerable attention to risky tasks.
5. True The supervisor typically compares performance to prior jobs or the estimate. More attention to looking for better ways to do things is recommended.
6. False The industry and the supervisor have typically focused on the average productivity achieved or expected. This focus takes away from the potential to improve.
7. False In many cases equipment costs more per hour. Therefore it is important to keep equipment productive as well as labor productive.
8. False This is one of the unique difficulties of the construction supervisor. Many of his or her workers are only with them for a job. This makes it more difficult to know and motivate each and every worker.
9. True Unfortunately, the supervisor often finds himself or herself "putting out fires". It would be advantageous for the supervisor to spend some time focusing on opportunities.
10. False The supervisor and the crew are typically not given production goals even though they should have them.
11. False Similar to focusing on labor, equipment should only be considered in a productive state when it is used to place finish material.
12. False Many studies have found that workers are equally or more motivated by responsibility, measurement, feedback, and pride.
13. False Workers expect job conditions to be good; it is a maintenance factor. Typically if the job conditions are worse then expected, productivity would decrease.
14. True Equipment is often idle at the job and does not get the attention of the supervisor and management. It should.
15. False Just the opposite. Planning is determining what has to be done, and scheduling is when it has to be done.
16. True Ideally they should be the same and in that way the schedule and estimate become one in the same system.
17. False The activities that are the most difficult to update are the activities that have started but are not yet complete at the time of the update.
18. True For the most part this is true in that the critical activities determine the overall project duration.
19. True What is good for the general contractor is typically good for the subcontractor. One way to manage a subcontractor is to require them to manage themselves; i.e. perform good management practices such as planning.
20. False When a worker gets fatigued owing to overtime, each and every hour is negatively impacted.
21. True If there is too much supervision, it is not cost effective. However under supervising typically leads to workers being less productive.

22. True Most studies indicate that there is a "best" work area space to perform work tasks. If less area is available, worker productivity will decrease.

23. True The supervisor compares actual to budget. Even though this is the most common means, the problem is that the budget in itself represents averages and not what can be achieved. Also a more timely control cycle needs to be considered; too much money is expended daily at a job site to be reliant only on a weekly or monthly control system.

24. False A control system entails 1.) the timely 2.) comparison of plan 3.) to actual, 4.) to detect a potential problem, and 5.) the attempt to correct the problem.

25. True By focusing on defects, identifying the cause, and taking appropriate actions, improvement can be achieved.

26. False The construction firm and the supervisor needs to be able to do a cost analysis for a specific work method to determine if it is more effective to use labor or equipment.

27. True Because approximately 30 percent of the hourly cost for a piece of equipment relates to fixed costs or costs that are independent of use; the more hours it is used the less it cost per hour.

28. False Groups can also be a positive force; the key is to focus the group on company and project objectives; i.e. to get goal congruence.

29. True In many instances in order to have materials or events occur one to four weeks from the present time, an action must be made today. The look ahead schedule can be used to facilitate the timely delivery of material and the occurrence of needed events.

30. True Requiring or encouraging subcontractors to manage their process or effort will be more effective than a promise for results.

31. False The construction industry expends vary for little for continuous education for employees; this is undoubtedly one of the reasons why construction productivity has not increased at acceptable rates. One of the best ways to improve is to look for new ideas; i.e. education.

32. False As additional workers are hired; each new worker is subject to some learning process. It follows that the more workers that are hired, the more the loss of productivity owing to the learning process.

33. True In order to obtain maximum productivity, there has to be the proper ratio of supervisors for craft workers. If additional work is performed with additional workers, or if workers are distributed over a larger work area, supervision will be diluted and productivity will likely be negatively impacted.

34. True Concrete forming has more variation in productivity from one time period to the next. This is likely due to the unique work process and the difficulty of the work process. With this higher variation or risk comes significant potential to improve.

35. True To varying degrees, each and every worker to include supervisors and craft workers are motivated by each of these factors; money is not the only motivator. The ability to learn is also a motivator for workers.

Your score (1 point for each question answered correctly. _____

30-35 You are very knowledgeable about construction productivity.

20-29 You have a fair understanding about construction productivity.

10-19 You need to review select past issues.

0-9 You need more productivity knowledge.