

Priming the Planning Pump

By R. Dennis Smith

The story is told in American folk legend and song of the desert traveler who, nearly delirious from thirst, comes across an old farm pump near a dry gulch. The traveler madly pumps the handle, hoping against hope for the sound of water down below. But the only noise that comes up the pipe is the creaking and clanking of the dry, rusty, iron plunger. In despair the traveler is about to move on when a glint of sunlight is reflected from something shiny under a nearby rock. It is a half-gallon bottle filled with clear, pure water. Frantically, the traveler struggles to open the container and drink its precious contents only to find a handwritten note attached to the stopper:

"Dear fellow traveler," the note begins, "DON'T DRINK THIS WATER!" Puzzled, and now even more thirsty than ever, the traveler reads on. "Though this pump looks abandoned and dry, there is water down below—all the cool, refreshing water you want. But to get it you must pour all the water in this bottle down the pipe to prime the pump. You will need all the water to get that old pump primed, so don't drink any of it. Have faith in these words and trust in that rusty pump. Pour the water down the pipe. Then drink all the water you can hold, wash your face, cool your feet. Just leave the bottle filled for others. Thank you kindly, Desert Pete"

What would you do? How many of us, faced with such a decision, could follow Desert Pete's advice and pour out the

one thing we need most to survive? It's a tough choice. Yet construction field supervisors actually face this decision every day. The precious commodity they never have enough of, however, is not water; it's time. The pump that can give them more effective use of their time is planning. And the planning pump must be primed daily with the one thing none of us can afford to waste a bit of—our time.

Do most of us have enough faith and trust that the time we invest in planning

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will give us enough payback to justify the effort? It's a tough question. To survive in the construction business, supervisors become adept at solving a vast array of problems that always seem to pop up on their job. Day after day, job after job. Over the years, supervisors have expressed to us a condition that has come to be called the supervisor's paradox: We don't have enough time on our jobs, because things weren't planned properly. Yet things weren't planned properly because we didn't have enough time to do the necessary planning. This can become a vicious cycle that will wear out even the most veteran of supervisors and keep them constantly reacting to daily emergencies. If this sounds familiar, what can you do?

You've got to prime the pump!

AVOIDING THE COST OF REWORK

The cost of rework alone should be all the incentive we need to invest more of our time to in better planning. In an era of ever-increasing schedule compression, new materials and methods, a complicated regulatory environment, labor force challenges, and tight budgets, supervisors cannot afford the consequences of having to do work over. The primary cause of project rework remains poor planning.

Supervisors generally agree that the labor cost of rework is about three times the cost of doing work correctly the first time. For example:

- A labor dollar is spent to do work. Unfortunately the work is done incorrectly and must be done over.
- A second labor dollar must then be spent to take out the incorrect work.
- And then a third labor dollar must be spent to do the work again, this time correctly. Bear in mind this analysis is for the labor cost alone. It does not take into account the cost of wasted material, the negative effect on crew productivity, extra mobilization costs, and all the cascading negative impacts to the job schedule. However, even this assessment misses a key component of the true cost of rework—opportunity costs. Opportunity costs involve what could have been done with the same labor dollar if it didn't have to be used to take out and replace bad work. Continuing our example:
- Instead of spending the second labor

dollar taking out incorrect work, it could have been used to put in another dollar's worth of good work.

- And instead of spending the third labor dollar to do the original work over, that money could have been used to put in yet another dollar's worth of good work.

Thus, the true labor cost of rework is more like five times the cost of doing things right the first time.

Consider how much time your field crews have lost from improper material deliveries due to inadequate planning. What is the lost opportunity cost of a crew that comes to a halt because it doesn't have the right tools or equipment due to a lack of proper planning and coordination? How many times have you had to re-make a decision as a direct result of an unproductive meeting that wasn't planned well? Avoiding rework is, by itself, a worthwhile reason to invest time in planning—or in making sure someone else has planned properly.

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AVOIDING THE "COULDA, WOULD, SHOULD" SYNDROME

As a job approaches substantial completion, construction supervisors begin to use a peculiar form of speech that clearly reflects another benefit of investing in better planning. In addition to more colorful terms of endearment about the job we start to hear statements like these:

- "If I knew at the start of this job what I know about it now, I could have positioned the crane where it would not have impacted access to our lay-down area."
- "If I knew at the beginning how truly complex that radius wall was going to be, I would have made sure we had our best forming crew available for it."
- "Knowing what we do now about this new tower design, we should have considered an alternative erection sequence."

Construction supervisors are smart folks, so why does this happen? Too often what we hear is, "Yeah, I know we should plan our jobs out in more detail, but this one is unique. The schedule is really tight, the margin is pretty slim, and

our notice to proceed was delayed. We just don't have the luxury of enough time to do all the planning we normally do." It's a funny thing, but most jobs can become "unique" and the "coulda, woulda, shoulda" syndrome can become quite expensive. It's pay the price now or pay much more later.

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ESSENTIAL JOB PLANNING TOOLS

Planning processes do not have to be elaborate, complicated, or overly time consuming in order to be effective. In fact, the more simple and easy to use they are, the more likely they are to be used. Dramatic job performance improvements can be realized through a consistent application of these basic planning tools:

- Pre-job planning
- Short-interval planning
- Daily crew huddles

Most construction companies have processes in place for the systematic start of a job. Still, the time-honored practice of giving a field supervisor an incomplete set of rough drawings, an address, a list of needed materials and equipment, an approximate labor budget, and a "Go get 'em, tiger" is not adequate for today's construction environment. In some companies the pre-job planning process is covered in elaborate and comprehensive operations manuals; in others simple checklists of required actions. In some companies pre-job planning takes the form of extensive hand-off meetings involving estimators, project managers, accounting specialists, and supervisors. In other companies, pre-job planning is more informal and may involve a series of telephone calls. Both approaches can be highly effective at priming the pump.

The real issue is less about what these procedures look like and more about whether the process covers all the bases and whether field supervisors are given sufficient opportunity to be appropriately involved. Fundamental topics typically covered in pre-job planning are predictable: contract terms, scope of work, schedules and work sequencing, labor resource requirements, tool and equipment requirements, site layout, material

delivery schedules, permits, and billing cycles. Equally important, but often not given an equal emphasis are suggestions for alternative work sequencing or construction methods, lessons learned from previous jobs and relationships, potential obstacles and what might be done to avoid them or reduce their impact, estimating assumptions, and labor concerns. Such discussions take time, involve opportunity, and do not guarantee success. But they can substantially reduce the risk of unpleasant surprises. Is the investment worth the cost? Should we prime the pump or drink the water?

SHORT-INTERVAL PLANNING

If there is one thing field supervisors dislike more than inaccurate weather forecasts, it is having to deal with paperwork, particularly paperwork they have to create themselves. The short-interval, or weekly, resource plan can be a powerful way to prime the pump, but only if it is written down. Many supervisors who have used this planning tool for several years have told us that if the short-interval plan isn't committed to writing, it can only be considered a wish. This plan should be prepared at least a week in advance and should include:

- Specific work activities including cost codes, descriptions, and production targets.
- Labor requirements: by name or by crew size and skill mix.
- Material requirements: order and delivery information.
- Equipment and specialty tool requirements: coordination, maintenance, delivery, pick-up.
- Subcontractor coordination.
- Alternative work plans (a "Plan B").

A frequent point of resistance we encounter with those supervisors who are reluctant to start a short-interval planning process has to do with its accuracy and the apparent futility of making an educated guess of what will happen in the future on a construction site. "You're going to have to let me call the Psychic Friends Hot Line to find out what's going to happen on my job next week," one foreman once told us. Another argument we hear is that short-interval planning can't guarantee success; unexpected problems can still occur.

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An interesting aspect of the short-interval plan is that its true value comes from preparing it, and not so much in how accurate it proves to be. Thinking through the job, checking for material and equipment requirements, calculating progress, and de-conflicting potential site congestion can dramatically reduce rework, the risk of an expected problem and lost time. The issues have to be dealt with. When is the better time to solve potential problems? In advance, or as they happen—with a fully-loaded crew on the job?

DAILY CREW HUDDLES

National Football League teams have been described as organizations that have taken planning to an art form. There is virtually nothing about an NFL game that is not planned to a mind-numbing level of detail. Yet before each down, the 11 players on the field huddle to make a final preparation for the upcoming play. The quarterback wants to make sure that everyone knows what the immediate goal is: 30 yards and a touchdown or three yards and a first down. What is the specific play: a screen pass or an up-the-middle run. Are any last minute changes required since the

opposition just ran in an extra line-backer? Does everyone know the snap count? Are there 11 of us on the field? All the planning in the world can be ineffective if the plan is not clearly understood by those who are to carry it out at the immediate point of final execution. So it is with a construction crew.

One of the most effective planning tools for field supervisors is a short crew meeting at the beginning of the work shift to make sure that everyone understands the plan for the day. The three most crucial factors to construction success in the field are safety, productivity, and quality. (The days of arguing that any two of these come at the direct expense of the third are long past; all three must be optimized). An easy way to help keep the crew focused on these three key factors is to pose three questions at each huddle:

- Where are we going to be by lunch, by the end of the day?
- Are there any immediate safety issues that we need to be especially aware of today?
- Does anyone have any observations about how we might improve things?

The answers to these simple questions can have a powerful impact on the ability of a crew to consistently do what has been planned for them. This process is even more effective if the field supervisor has made a short-interval plan to make sure that the crew will have a clear work path and all the people, material, tools, and equipment necessary to reach their daily goals. Regular, daily huddles can build crew commitment to a schedule, identify chronic roadblocks, improve work methods, and maintain a constant focus on safety. Daily huddles take only a few minutes and will prime the pump to a deep well.

MAKE PLANNING A HABIT

Effective job planning requires a belief that the payoff for planning is worth the effort and investment. The most effective construction supervisors have a “prime the pump” attitude and insist that time is allocated to planning. The fundamental cause of inadequate planning is the inconsistent application of basic planning tools and a lack of commitment to provide the time to do it. Remember:

- Planning is real work.
 - Planning takes time and costs money.
 - Planning does not guarantee success.
 - Planning does reduce the risks of uncertainty.
- Will you prime your planning pump?

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