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by Bill Amaya

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# SITE SKILLS FOR JOB FOREMEN

*Avoid production errors and bottlenecks with this set of standard procedures*



*A team approach works best when individuals stay in their assigned roles — in this case, sawing and nailing.*

**H**ave you ever noticed how some crews are consistently and effortlessly able to produce quality work, while others just can't seem to get the job done? I'm a job foreman for a residential contractor, and in my experience, the difference between good and poor productivity lies in how the work and the people on the crew are organized. So I've developed a set of guidelines that help my crews get the work done smoothly and efficiently, even on complex jobs.

## Matching Tasks and Teams

The first step in organizing a job is to break the work down into manageable "bites" and assign a group, or team, to each task. I then divide each task into logical phases, using a list I call the "task outline" (see Figure 1). It notes start and completion dates, and lists the supplies that will be needed. The outline also lists the members of each team and the team's leader, as well as what I call the task's "logistics" — special problems with the work or information needed to complete it.

The task outline is not a static document; on larger tasks, like building cabinets on site, we use the outline to record shop drawings, as-built drawings, and changes. Also, I always review team makeup and the overall plan with the team leader, who is ultimately responsible for the flow of work.

**Team size and composition.** Our crews are taught that tasks can be done faster and more efficiently if they think and work as a team. Teams are more effective, for example, when

the work is up off the ground: A roof-framing team might consist of a team leader on the ground, sawing and running support for two other workers stacking the roof from a staging.

I first decide how many people will be needed on a team, based on the available help, their mix of talent, and their wage. The complexity and scale of many of the homes we build call for two experienced journeymen; for simpler jobs with tighter budgets, however, I often have to mix in several lower-paid, less-experienced people.

**Assigning jobs.** As foreman, I assign people where I want them, and I never assume they would make the same choice I do. I won't assign a laborer to cut in a hip roof, no matter how badly he wants to try it. And when my highest-paid team leader wants to spend his day nailing off flooring because he's tired and wants to avoid having to think too hard, I might have to override his wishes and assign him to the job that best fits his skill and his wage.

**Team coordination.** Creating a team that's the right size and composition doesn't guarantee, however, that the individual members will act like a team. It's inefficient, for example, for two men on a team to stop laying plywood while they wait for the sawyer to cut the next piece. It's the foreman's job to establish the process by which the sawyer has the next measurement earlier in the process.

To promote cooperation, we occasionally declare someone "foreman for the day," so each crew member gets a feel for the

## Task Outline

### Exterior Trim

Hal 10-25-94 siding/soffit  
Chris 10-28-94 front pop-out

Material: siding  
trim-corners, casing, belly band  
housewrap  
screen

Hardware: galv. nails  
(WA) staples  
glue

Logistics: nailing pattern  
(WA) rabbet casing  
blueprint details  
size of casing? corners?

Tools: Router (rabbet) chisels  
(Hal/Chris) nailguns small trim saw  
elect. stapler jig saw  
chopsaw finish nailer  
clamps

Figure 1. The author gives a separate "task outline" to the team responsible for each task on the job. This sample outline for exterior trim names the persons responsible for the task (Hal and Chris), sets goals for start and finish dates, and lists the materials, hardware, and tools needed. The job foreman (initials WA) is responsible for resolving any problems listed under "logistics."

foreman's responsibilities. Once you've had a taste of what it's like to give the orders, it's often easier to take orders from someone else.

**Measuring performance.** When measuring team performance, the bottom line is whether the job is on budget. Over the course of several years, we have tracked our unit costs: We know from past experience, for example, how long it should take to hang a door and how much it costs to build cabinets on site. We use a "job book" to record daily production rates that we can then compare with our historical record of unit costs. I refer to the job book often to see if we are meeting the goals set out in the task outline.

There's nothing high-tech about the job book. It's simply a columnar pad where we record the tasks and the times involved to do them (Figure 2). Given timely feedback, we are able to adjust team size and goals accordingly. For work where we find we can match or beat a sub's estimate, we may choose to do the job ourselves.

## Work Flow

The rest of my guidelines describe strategies that help to keep the job moving and reduce the chance of errors and oversights.

**First things first.** It's easier to do certain tasks sooner rather than later, especially those that set the groundwork for subsequent tasks. For example, we install drywall backing prior to sheathing the roof because it's easier to maneuver the nail gun at the outside walls without roof sheathing in the way.

As foreman, I'm always concerned about the sequence of the work, and I try to establish standard routines. When laying plywood subfloors, for instance, we lay as much plywood as we can before the glue skins over, then nail it all off. You may decide it's more efficient to nail off each sheet as you lay it, but the important thing is to have a standard sequence that everybody understands and follows consistently.

**Stay in assigned roles.** We recently had a team of three men sheathing a roof. Two guys were on the roof laying

## Job Book

### Hang + Trim Doors

Hang	Make pieces	Casings	Install Jamb
TJ 21	MH 16.75	WA 15	TJ 3
WA 1	MH 8	WA 9	WA 2
TJ 8	WA 6	TJ 14	(extensions)
WA 2	WA 8	GS 15	5 hrs.
TJ 8	NS 1	MR 15	
TJ 4	MH 15	TJ 7	
44 hrs	NS 7	TJ 8	
	NS 12	GS 8	
	WA 6	MR 8	
	MH 5	99 hrs	
		84.75 hrs.	

Figure 2. Team leaders record hours worked on specific tasks in a ledger sheet called the "job book." When a task is completed, the total hours are reconciled with estimates, and the information is also added to historical unit-cost records used for future estimating.

plywood, while the team leader was on the ground, sawing and packing plywood on a rack so it could be reached from the roof. Halfway through the task, to my amazement, one of the guys on the roof decided that he should help the saw man. That gave us two guys sawing and only one guy laying plywood on an 8/12 roof. Obviously, my efficiency guidelines hadn't sunk in. Team members need to stay in their assigned roles until a task is completed.

**Material storage.** As a rule, material should be as close to the work as possible, but not underfoot. When working above the ground, a Pettibone or forklift can serve as a handy material platform (Figure 3). If there's no equipment available, consider using a laborer to move material close to the work. If a roof is partially sheathed and safety is not at issue, we often move the material up on the roof and work from there.

Workers should learn to keep tools and other supplies at hand, especially when working on staging. Every time a worker goes up and down a ladder, it

costs money. Workers should be in the habit of asking, "What else will I need up there? More hardware? Another tool?" If I have done my job, these requirements are also spelled out on the task outline.

**Line of sight.** Every member of the team should be able to see the work as it is being done. This is crucial for the sawyer or team leader, who needs to communicate his observations to the rest of the team. Cutting in a roof goes much smoother when the sawyer can get a mental picture of a complicated piece before cutting. At some point, he might be better off cutting on the roof, nearer to the work, than on the ground.

**Standard work first.** We like to start a task by doing standard items first. That helps us establish a work pattern that we can use during the entire task. When applying siding, for instance, we work out methods and details for standard runs in an out-of-the-way corner of the building that's not as visually important as, say, the front entry.

We also try to use standard techniques as much as possible, then apply them to what we call "specials" — one-of-a-kind projects where it's much harder to develop a pattern. One of our journeyman carpenters recently installed stair treads that had to be individually coped to a log wall. He decided to do the larger L-shaped bottom step first, and ended up spending a whole day on that one step. Had he started at the top and got his "chops" on the standard treads, the "special" at the bottom would have gone much faster.

**Work in patterns.** When nailing off plywood sheeting, some carpenters like to nail off one whole piece before moving to the next; personally, I prefer to nail along one entire joist. But either way is acceptable so long as the same pattern is used throughout. Trouble

## Odd Man Out

As a foreman, you may not be a member of any one team. Instead, you need to be available to answer questions from all teams as well as from subs and anyone else involved in the project. If you are a vital member of a single team, every time your attention is called elsewhere, your team stops production. A new foreman who is used to doing the work instead of supervising it may find this role hard to accept.

One solution I use is to temporarily join a team that is having problems. I help them with technical and organizational issues, and when they are no longer struggling, I move on.

The rest of the time, I assign myself one-person jobs. Because I'm not part of a specific team, I can interrupt what I'm doing without disrupting overall production.

Some people see the job of foreman as a thankless one, but I get a lot of satisfaction out of organizing, motivating, and supervising the work. The time I spend making phone calls, organizing the teams, ordering materials, and scheduling subs pays off. For organizational freaks like myself, the responsibilities of a foreman are balanced by the satisfaction I get when the job runs smoothly. — B.A.

arises when you switch the pattern in the middle of the job, nailing along a joist partway across the building, then stopping to nail off one entire sheet. Whether you're framing, siding, roofing, or running trim, when there is no pattern, something will get missed.

**Identify bottlenecks.** You can spot a bottleneck by regularly checking to see if material is stacking up in front of a machine or a process, and by monitoring which team roles or positions are idle and which are overwhelmed. If the man sawing siding, for example, is a dozen boards ahead of the nailers, you have a bottleneck.

Bottlenecks are usually caused by labor or equipment shortages, sometimes both. To provide more labor, either "steal" workers from other steps in the task or increase the size of the team. The siding bottleneck could be solved, for example, by having the sawyer do some nailing until the backlog of material is gone. Staggering start and finish times of work breaks can also give you additional manpower to apply to the bottleneck. If equipment is causing the bottleneck, either increase the number of machines or have more people run the machines you already have.

Relieving a bottleneck sometimes requires a change in the way you process a product or part. If the architect doesn't mind, consider altering the design. If the bottleneck involves site-milling, consider upgrading your equipment by purchas-

ing or renting better tools. Or have the milling done by a subcontractor.

**Finish the task.** A team should try to completely finish one task before starting another. If they are setting windows, for instance, they should set *all* of the windows. Why? Because when you are setting windows, you have the manpower available, the necessary tools and supplies lined out, and the window schedule has been deciphered. The team is organized and on a roll. If you don't finish a task, you'll have to do all the setup, mental and physical, over again.

**Be objective.** To ensure that every member of a team produces the same results, teams must agree to objective standards for common reference points, such as length, level, and straightness. This may seem obvious, but it's particularly important when you work on as many log buildings as we do. Because logs taper and have crowns and curves in them, some parts of the building may look out of level or plumb. Instead of spending a lot of time straightening walls based on subjective criteria, however, we always measure from a center line.

The same is true in remodeling, where we often run across a floor or ceiling out of level. We always have to decide whether to measure off the ceiling or the floor, or to establish a new level base line. ■

Bill Amaya is a construction foreman for Engleman Inc. in Ketchum, Idaho.



**Figure 3.** To reduce time lost handling materials, the author sometimes uses a Pettibone or forklift as a storage platform or to hoist materials onto a roof or second story.