Scaffolding Systems:

Finding the Fastest Way to the Top

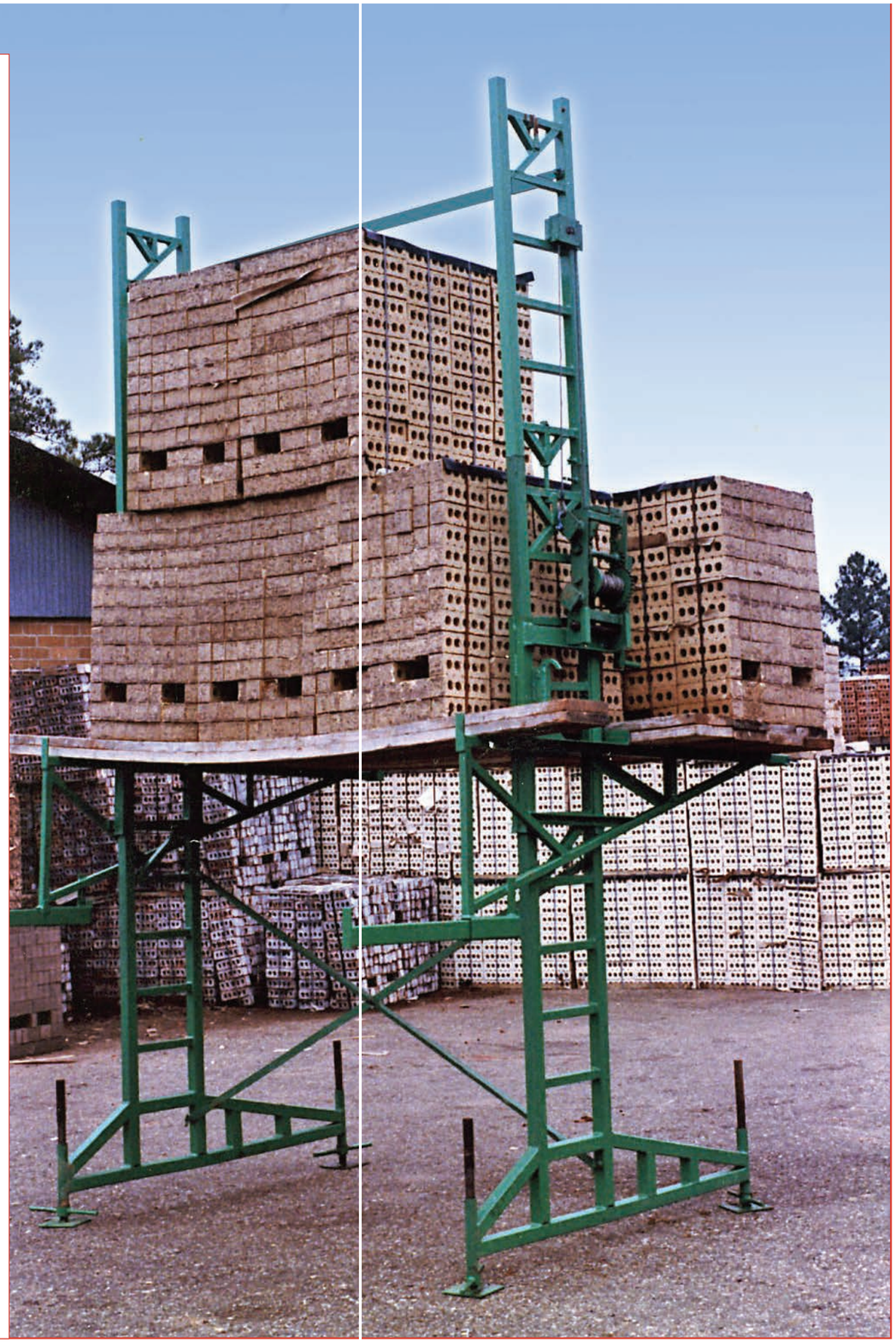
With the recent upturn in commercial construction, a lot of young mason contractors are starting up and equipping their new businesses. If yours is a new company just starting out, or an established operation looking to improve, choosing the right scaffolding system is a major decision that will affect your operation for years.

BY JUSTIN BREITHAUPT JR.

IT USED TO BE "SET UP THE FRAMES AND GO TO WORK," but now there are several choices of scaffold systems for the modern mason contractor. Frames have been around forever it seems, having been invented in the 1940s. Then adjustable crank-up type scaffolding became widely seen in the 1970s. The 1990s brought the large mast climbers. All of these options still are available today.

Frames

CONVENTIONAL FRAMES can be used virtually anywhere on any wall. They are inexpensive to buy and haul, but labor intensive to set up and tear down on every wall. They are seen as slow, because of the frequent interruptions in production to move men, boards and materials to the next level up. They also require constant attention to stay OSHA legal.



Shown are 2,800 bricks – don't try this at home. One crank-up scaffold manufacturer uses ultra-high-strength steel in its towers to gain a high load capacity, while keeping the towers light and easy to handle. A side benefit of the high-tensile steel is that the towers are so stiff, the manufacturer guarantees them not to bend.

Crank-up scaffolding and mast climbers were designed to give mason contractors several important advantages over frames:

- The entire work platform, including guardrails, travels up the tower as the wall is built. If all the safety gear was in place on the bottom, you're safe all the way to the top.
- The bricklayers never stop working to hop planks and materials. That means they can lay bricks all eight hours of the day, unlike the average crew on frames, which loses 1.5 hours a day to moving boards and materials. A government study also showed that all the extra motion and strain of bending, lifting and stooping is eliminated on elevating systems. The bricklayers put in 20 percent more materials in a day when the wall is always waist high.
- Although the initial investment in adjustable crank-up scaffolding and mast climbers is higher, the savings in labor is worth it. Four bricklayers easily can put in the same amount of materials as five men on frames. Given the national average bricklayer cost of $4,200 per month per mason, the contractor working eight masons on an elevating scaffolding system is spending $8,400 less per month than the contractor on frames.

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Elevating systems are being chosen over frames

THE TREND, from a labor-saving and safety standpoint, is definitely toward the elevating systems. However, you can't just point to one and say, "That's the system for me." Different systems have shown to be better for certain types of jobs, and you have to consider the initial investment, the transportation from job to job, the length of time they may sit idle, the equipment required to move them, maintenance costs, and how quickly they can be put back in service, if something breaks.

Many of the contractors we know own both a mast climber and the crank-up-style scaffolding. Why would they own both? And, how do they decide where to work each system?

It turns out that it has nothing to do with the performance of the systems, since each system does exactly the same thing. They keep the wall at the perfect working height for the bricklayer. It's the height of the wall and its configuration that makes the difference.

What do most of your jobs look like? Are they generally long, straight walls, or chopped up with lots of inside and outside corners? Are they generally 32 feet high and higher, or are they generally under 32 feet? Is it a jobsite that's easy to navigate with a forklift?

Where is the line drawn?

THE CONTRACTORS we consulted say the best place for mast climbers is on 32 feet and higher long, straight walls. They aren't saying it's better on high straight walls; that's just where it becomes practical.

Why 32 feet high? As one user says, "You can't justify the expense of moving it from wall to wall, unless you're going to be on that wall for a while, and the job must have a lot of high walls to make it worth the extra expense of trucking all the parts out to the job and putting a 10,000-pound lift on it."

Why straight walls? "It takes a lot of extra brackets and assembly time to turn corners, or scaffold an inset or a bump-out with a mast climber," says another contractor.

If the bulk of your work is below 32 feet, crank-up-style scaffolding, like Non-Stop, is probably your best choice. Crank-up-style scaffolding is a modular system of independent, seven-foot-wide towers you can set up on cut-up walls with lots of inside and outside corners, bump-outs, insets, and even radius walls, just as fast as a straight wall.

One experienced user says, "My Non-Stop can go all the places a mast climber simply can't go. I don't feel handicapped at all without a mast climber. They do the same thing."

In addition, if you do take on a tall job, crank-up-style scaffolding has proven it can handle walls over 200 feet high.

Equipment requirements

YOU WILL NEED the right support equipment for the particular elevating system you choose. Crank-up scaffolding generally is moved from wall to wall with any 4000-pound forklift. It can be moved from job to job with an eight- x 15-foot utility trailer behind a pickup. However, one system uses a rather large bunk rack that is best moved with an 18-wheeler.

Also, be mindful of what size forklift you would rather keep at your yard. Mast climbers require 18-wheelers to move from job to job, and generally require a 10,000-pound forklift at each end of the trip for loading, unloading and moving from wall to wall.

Support and repairs

MANY MASON CONTRACTORS these days have a mechanic with a service truck to keep their forklifts fueled and maintained. If your mechanic can handle forklift repairs, he probably can handle an urgent mast climber repair. Both pieces of equipment have the same types of systems: engines, limit switches, batteries, electronics, hydraulics, etc., and both must be repaired quickly if a masonry crew is shut down by an equipment failure. The crank-up scaffolding is far simpler. The only moving parts are in the winch, and one company has a no-charge overnight replacement guarantee if one ever breaks.

Labor costs

SOME MAST CLIMBER USERS say they can use one less laborer, since they just push a button to go up. Others say it doesn't matter, because 90 percent of the laborers' work involves handling mortar and materials. In truth, both scaffolds are raised only about every 20 minutes if you're laying blocks, and less frequently for bricks.

One crank-up user says it is a non-issue: "It only takes my laborers about three minutes to raise the scaffold 16 inches, and they can crank it one-handed."

Others say that, even if they did use one less laborer, it still doesn't justify the almost 3:1 price differential. Users of both systems, mast climbers and crank-up, are unanimously thrilled about saving about 80 percent of their allotted budget for frame scaffold erection and tear down between walls, hopping planks and materials, and the OSHA exposure. Both systems move from wall to wall without disassembly.

Loading

LANDING LOADS on your work platform usually is not a concern for the average load of masonry materials, but crank-up scaffolding, with its seven-foot bays, can be stocked way ahead if the forklift is needed for other things (see photo p.18). Loading capacities and load placement varies for the mast climbing platforms.

Initial cost

MAST CLIMBERS COST about three-times as much as the best crank-up scaffold, and many contractors who own both say they do the same thing. It all depends on the type of walls your company regularly builds. No one wants any equipment to sit idle on the yard because the "right" job for it is three months off. Most of the larger mason contractors own a mix of the two systems, so nothing sits idle for long. Many medium-sized contractors own only the crank-up scaffolding, saying it works well on about 95 percent of their work.

Warranties

MAST CLIMBER WARRANTIES VARY. One of the crank-up-style scaffolding companies has a lifetime guarantee that includes freight. Of course, the key is to buy a system with a reputation for holding up, and holding its value. All the different brands have been out long enough that it's easy to find out who is leading the field. Ask around. Call other contractors you know, and get their opinions. I believe the best education a mason contractor can get is from joining the MCAA, and networking with the other contractors at the yearly meetings and in the live and online seminars. MAS

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