

FALL PROTECTION: COMPLYING WITH OSHA'S NEW RULES



BILL DAVENPORT

Under OSHA's new rules, even carpenters laying plywood on the first-floor deck must be protected from falling. Since scaffolds and tie-offs are not the answer, the work site must be carefully managed as a "Controlled Access Zone."

OSCAR WILLIAMS



*Where railings
and tie-offs
won't work, the
new rules allow
for alternative
strategies*

by Mike Davis

When the phone rang, it was one of my foremen saying, "OSHA's here." I hurried to the job to find two compliance officers beginning their pre-inspection meeting.

I'm a very safety-conscious builder: We have a written safety plan and hold weekly safety meetings. I figured I would probably get a medal. But instead, the officials cited my company for violating 29 CFR 1926.500, Subpart M, the newly adopted fall protection standard.

Well, surprise, surprise! I had heard that a rule change was in the works, but I didn't think it had taken effect yet. A day late and a dollar short, I hastily began gathering information on fall protection, and working to comply. My task has not been easy.

As builders have scrambled to adjust to the new rule, the National Association of Home Builders (NAHB) and state builder associations have been attempting to reason with OSHA. The agency doesn't know a whole lot about residential building, and the builder groups have argued that a few realistic adjustments could make the government fall safety effort a lot more practical.

Meanwhile, Congress has been holding OSHA's feet to the fire: A rider attached to the agency's funding bill would have reopened the rule for changes, barred enforcement of the new rule until changes were made, and raised the height threshold for protective measures from 6 feet to 16 feet.

Facing the big legislative guns, OSHA

agreed to negotiate. In December, the agency released a new compliance directive developed with input from NAHB. Including the latest changes, the rule will now be much more realistic, but complying will still be work.

But properly interpreted, this new rule lets us builders do our job. I advise every builder to get a copy of the new standard, and also a copy of the agency's latest enforcement directive. Read them, understand them, and apply them — and be ready to explain them to your local OSHA people (the state OSHA guys in my area don't know the new rule too well themselves).

Take this rule seriously. Complying will make your job site safer — which in my experience is well worth the effort. We all know it's not easy to replace an injured worker these days. And reducing job-site injuries has lowered my insurance rates, which is money on my bottom line.

One word of warning: The rule has been reopened, which means more months or even years of discussions about even more future changes. In addition, Congress is considering legislation to revamp OSHA completely. In the meantime, your local OSHA people will probably be as confused and uncertain as you are. Don't expect the dust to settle until after the election — if then.

A Rule for the Rest of Us

The biggest change in the new Subpart M is that it comes into effect at 6 feet off the ground. And unlike OSHA's old standard (which was aimed mainly at high-rise and industrial construction), the new Subpart M contains a separate section known as the "non-mandatory appendix" just for residential building. The residential appendix isn't very precise, though, and there's been a lot of confusion around it. It's this part of the rule that OSHA and NAHB have been working to clarify. (It is still unclear exactly what OSHA means by "residential." But if you're building single-family homes, you're clearly covered by the residential portion of the rule.)

In general, federal OSHA no longer expects residential contractors to use safety nets and other equipment designed for high-rise construction, or to use body harnesses and lifelines when there's nothing to fasten them

to. You're still expected to rely on guardrails and scaffolding where possible, but the new rule establishes guidelines for creating "alternative fall protection systems" where physical systems won't work. Meeting the requirements for an alternative system is by no means easy, but at least it's possible.

Compliance — An Overview

To comply with Subpart M, you'll have to take several steps:

Paperwork. You must develop a written "Fall Protection Plan" identifying the fall hazards your employees face and specifying appropriate safety measures to abate those hazards. You'll also have to keep detailed records of employee training and accident investigations.

Job control. You are responsible for fall safety anywhere your employees work. Under the new rule, a "Competent Person with extensive fall protection knowledge" must survey each new project before work begins, to determine what hazards might be encountered and how they will be dealt with. If your company is small, the Competent Person could be you. But any time you are not on site, you have to leave a designated Competent Person in charge of the work.

Training. You must provide fall protection training for each of your employees.

Physical methods. You must demonstrate a firm commitment to using "Conventional Fall Protection Systems" (CFPS) whenever possible. In many cases you'll need to erect guardrails or cover floor openings. In some situations you may need scaffolding or body harnesses and lifelines.

Alternative systems. In any situation where guardrails, scaffolds, or any of the more complicated safety rigs that OSHA likes are unfeasible or create a greater hazard, you won't have to use them. Instead, you can have an "Alternative Fall Protection System" (AFPS). The alternative plans have their own paperwork requirements, though, and can also create other difficulties.

Let's look at the above areas in more detail.

Paperwork

Most contractors hate paperwork. But government bureaucrats love it, and for OSHA, paperwork violations

are a "gimme." A fall safety violation can be strictly a paperwork offense — all OSHA has to do is ask to see your safety plan. If fall protection isn't in there, you're busted.

I'm a believer in written safety plans. Creating one from scratch is a big project, though, and adding fall protection to mine has taken a lot of time and effort.

Sample fall protection plans are available for you to work from (see "Sources of Supply"). The National Association of Home Builders offers a Fall Protection Compliance Kit that includes a sample plan on computer diskette along with two videos and a training manual for \$87.40, or \$69.95 for members. The American Subcontractors Association offers a sample fall protection plan on diskette for \$45, or \$25 for members. These packages can help you put your own plan together, but you should take care to base your own plan on a realistic analysis of the actual hazards on your site.

After writing your plan, you must keep a record of any fall-related accidents. Each incident must be thoroughly investigated, either by you or by your Competent Person. Then you must review your plan to determine if modifying it might prevent a similar accident in the future.

As you'll see, writing and modifying your plan is just the start of your paperwork under this new rule. Supervision, training, and alternative systems each have their own paperwork elements.

Job Control

On any given job site, who is responsible for fall protection? If you are the only contractor on site, the answer's easy: You are. But most construction projects involve multiple subcontractors whose responsibilities overlap. As far as OSHA is concerned, having other contractors and their workers on site only increases your responsibility. The Occupational Safety and Health Review Commission (OSHRC), a three-person board that hears challenges to the OSHA Act, has consistently upheld the position that everyone should share the responsibility for safety at the job site. Even builders who subcontract all their work and have no employees are still liable for the safety violations of their subs.

Establishing the Controlled Access Zone

by Larry T. Worden

Controlled access zone (CAZ) means exactly what it says. Whenever a worker could fall 6 feet or more, but conventional fall protection systems can't be used, access to the work area must be controlled. Someone has to keep out workers who aren't competent or aren't involved in the risky task.

In many ways, this new rule just formalizes practices that were already in place on many job sites. It has never been the policy at my company to have incompetent people frame our jobs, or to let people wander aimlessly through the site. So the biggest task for us has been writing up the plan to OSHA's liking. The general plan that we created, which can be modified for specific sites if necessary, runs to 18 pages. Our plan explains our CAZ system in detail: It describes how we mark off the CAZ, who is allowed to work there, and who is in charge of the work. And for each step in the framing process, from laying the sills on the foundation to setting the roof trusses, our plan explains specifically why each type of conventional equipment-based solution is unfeasible or creates a greater hazard. However, under the December OSHA directive, some of this detailed explaining may not be necessary.

The Boundary

OSHA calls for defining the restricted area with "a control line or by any other means that restricts access." We decided to mark the edge of the CAZ by placing warning signs 10 feet or more away from the foundation and connecting the signs with an imaginary line. The foreman in the CAZ keeps an eye on the boundary line. That way, he can control access to the area without having to continually move and re-erect snow fences or ribbons whenever there's a materials delivery.

In the case of a townhouse or similar multifamily building, one unit at a time, or the upper floor, can be defined as the CAZ; we don't have to put the whole building off-limits.

Competent Person. The foreman on each crew is the "Competent Person" at each site. We give all of our foremen extensive fall protection training. (In fact, we're working on having all of our framers certified as Competent Persons for OSHA. The agency has told us they may be willing to drop the CAZ requirement if every worker on site is fully trained.)



During house framing, fall hazards can't be prevented with scaffolding or tie-offs. Instead, the whole job is designated a "controlled access zone," and only qualified employees who are involved in the work are allowed on the site.

Authorized personnel. We meet OSHA's requirement for an identification system for people in the CAZ by giving the foreman responsibility to visually identify each worker who crosses the line. Our foremen know which of our employees have completed the proper training. They only let in trained workers who are involved in the task.

Justifying the Alternative System

Most of this part of the plan is repetitious — the reasons you can't use a safety harness while framing first-floor decks are the same set of reasons that apply to second-floor decks.

Take setting first-floor joists as an example, where the hazard is a fall into the basement. Tie-offs are unfeasible at this stage because there is no attach point. The foundation walls and girders can't be used as attach points because they are at the edge of the fall. The soil around the foundation is soft fill and would not hold a tie-off stake.

Adjacent houses, if any, are also impractical for tying off.

Guardrails are unfeasible because they interfere with the work. Nets are unfeasible because the fall distance is too short. Workers who fell into a net would hit the basement floor before the net slowed their fall. Also, there is no attach point for a net.

Working from ladders or staging inside the foundation hole creates a greater hazard: Carpenters cannot hold onto a ladder, because they need one hand to hold the joist and one hand to hold a nail gun or hammer. Working on a scaffold or ladder also places the carpenter's head and chest within the line of fire for any stray nails that miss their mark. Also, setting joists from below creates fatigue and stress for muscles and joints.

These sets of arguments, with modifications, generally hold true throughout the house-framing process until the roof is sheathed. But when the roof system is complete, slide guards or tie-offs are required.

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Railing Regulations

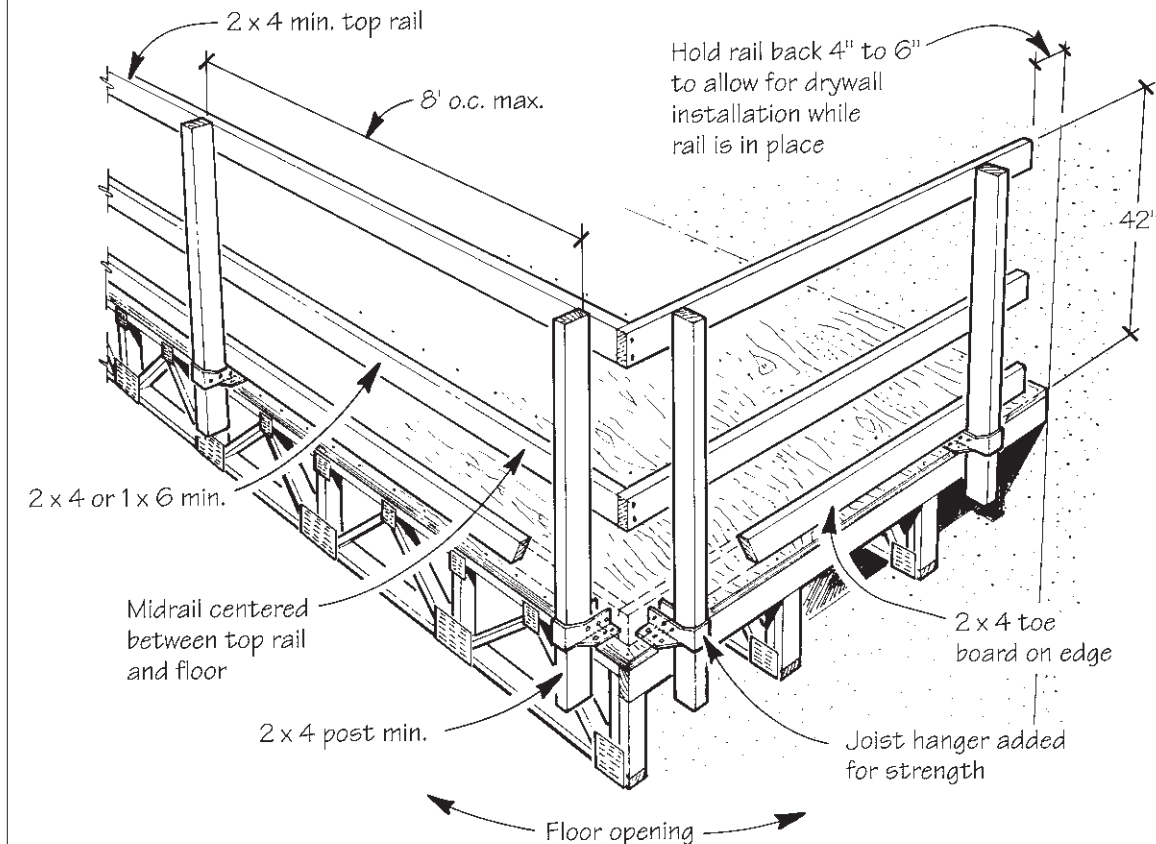


Figure 1. OSHA rules specify the heights of railings and midrails. The railing must withstand a force of 200 pounds in any direction (a 2x4 railing is usually sufficient). For extra strength, the author uses a joist hanger at the base of the posts to resist outward thrust.

Who's on first? The OSHA Field Operations Manual states that on multi-employer projects, citations will be issued to:

- the employer who actually creates the hazard
- the employer whose employees are exposed to the hazard
- the employer who is responsible for safety on the work site
- the employer who has the responsibility for actually correcting the hazard

Here's an example: Suppose a framing contractor leaves a stair opening in a second-floor deck enclosed by walls on three sides. He has created a hazard, so he nails 2x6 railings across the door opening to abate the hazard. But the railings get in the drywall installers' way, so they remove them, screw up their wallboard, and move on to the next room. Then the electrician's helper comes along to install switch and outlet covers. The builder's supervisor, meanwhile, is in the job trailer talking on the phone.

If OSHA drops by and sees the elec-

trician's helper working near an unguarded floor opening, who will get cited for the safety violation? Everyone will. The framer created the original hazard — according to OSHA he may have some residual liability. The dry-wall contractor is liable because he removed the railings, thus creating (or recreating) the hazard. The electrician's apprentice is working near an 8-foot drop, so the electrical contractor is liable for exposing his employee to the hazard. And the builder, as the controlling party (even though he knew nothing about the problem), is liable for allowing the railings to be removed. There are at least three citations to be issued, possibly four!

Communication is key in these situations. In this case, the framer's written plan should cover the risk posed by stair openings, and his Competent Person on site should make sure that each opening is guarded by a railing that won't have to come down until the stairs are installed and the hazard is gone. The Competent Person should also take charge of letting the builder or prime contractor know

where the fall hazards are, and advising him that he shares the responsibility for keeping the protective measures in place.

Training

Under Subpart M, each of your employees must be trained to recognize fall hazards, effectively use fall protection equipment, and understand the Fall Protection Standard.

Training is "portable" under the standard. You can take an employee's prior training or experience into account to fulfill the requirement, but you must verify that the training occurred. You also have to confirm that the employee remembers what he was taught. If there is any doubt, you must retrain and recertify that employee.

You must also maintain a written record of the training for each employee. This documentation must include the employee's name and date of training. It should be signed by both the trainer and the employee.

Training has to be given by a "Competent Person with extensive knowledge." At my firm, we're doing our

own training, using the NAHB training package mentioned above. In most places there are consulting firms that safety-train workers and supervisors in all kinds of industries, including construction. Your local Home Builders Association probably can put you in touch with a good safety training outfit. Some local and state chapters of the Associated General Contractors also provide training courses.

Physical Fall Protection

Before any alternative systems you might want to use will even be considered, you must “demonstrate a commitment” to using Conventional Fall Protection Systems whenever possible. There is a whole range of physical fall safety steps you have to take on most job sites.

Protection from falling objects. The standard deals not only with the risks of people falling: Physical safeguards are also required to keep tools or materials from falling on workers below.

For instance, hard-hats are the rule whenever an overhead hazard exists. Even though I know that my framers are careful, I require my employees to wear hard-hats at all times on site — it’s the simplest way to avoid head injuries and OSHA fines.

Contractors should also take steps to keep objects from falling from the work area. Establish a zone 6 feet in from the perimeter of floor and roof decks, and keep that area clear of materials. Try to limit the amount of work your people do in this hazard zone, and avoid setting up cut stations there.

Materials stacked on roof decks should be secured. Use a railing or toe board to keep anything from being knocked over the edge.

Any openings in walking or working surfaces must be fitted with protective covers. This includes not just large openings, such as skylights and duct chases, but any surface opening 12 inches or more in diameter. The covers should be capable of supporting at least twice the weight that is likely to be placed on them by workers, equipment, or materials. Also, they must be fastened down, to prevent them from being removed, and be clearly labeled “hole” or “cover.”

Marking covers with the word “hole” may sound a little silly, but I know firsthand why it’s so important. Years ago I told a new laborer to sweep off a second-floor deck so that I could snap out the walls. I had laid plywood over the stairwell to make it safe. The first thing this young man did was to walk over to the plywood sheet. He placed both hands under the edge and proceeded to lift up while stepping forward. He fell 10 feet onto a concrete slab, breaking an arm. An old hand might have been more careful, but for an inexperienced worker, it’s not so obvious.

Guardrails. Railings are the conventional answer to most fall protection problems (see Figure 1). They are required on all open-sided working or walking surfaces, including all floor and roof decks, stairs, landings, ramps, and runways. Windows with a sill height of less than 39 inches through which someone might fall 6 feet or

more, as well as openings through which someone might fall 6 feet or more, must also be protected.

If a floor opening is used for access, it should be protected on three sides by rails. Use a chain or movable section of rail as a gate.

Planning for railings is worth the effort: A good railing system can remain in place throughout the life of the project. The longer the railing stays up, the more protection it provides.

One way to make a railing that won’t interfere with drywall work is to use specially designed guardrail post bases (see “Sources of Supply”). These devices allow you to position posts on top of the floor deck and far enough away from walls so that the railing doesn’t lap over the rim or tie into the wall (Figure 2).

Remember also that a 42-inch rail comes up short for drywall subs on stilts. Once these guys come on site, you’ll need to extend your railings high enough to make up for the height of the stilts.

Safety nets. Although they are covered in the standard, safety nets are used primarily in heavy construction like high-rise buildings or bridge projects, to protect cars and pedestrians from falling debris.

The OSHA official who cited me mentioned safety nets as a possible fall protection solution for my site. But when I researched the subject, I found that the nets need 25 feet of vertical space to work — they are designed to gradually slow a person’s fall by stretching. Even on high-rise jobs, they are only deployed when workers

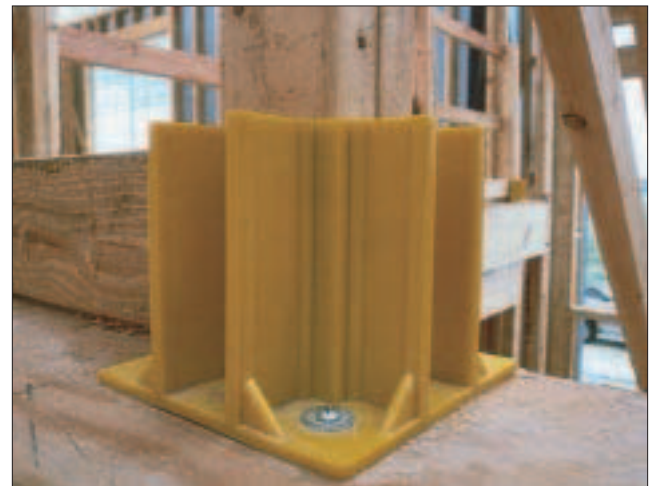
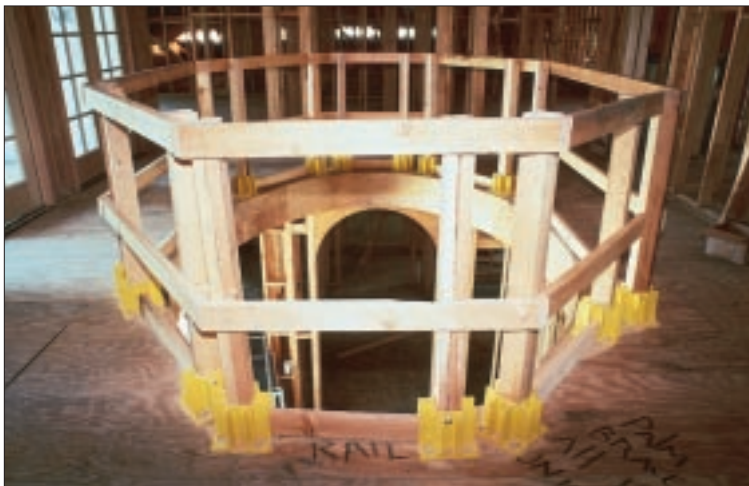


Figure 2. This reusable railing post base from Safety Maker (left) is designed to conform to OSHA requirements. It attaches to the floor with wood screws. Double 2x4 posts and 2x4 rails complete a railing system that won’t interfere with drywall work. Slots at the base (right) allow for easy installation of toe boards.

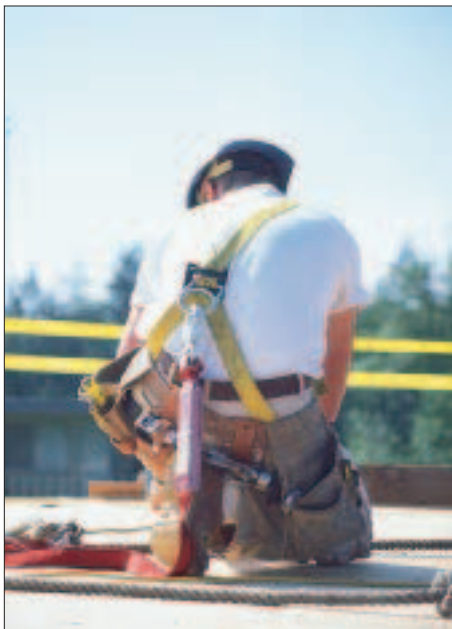


Figure 3. Contractors on commercial jobs are familiar with fall-arrest harnesses and lanyards. For residential framing, these complicated devices generally are unfeasible or create a greater hazard. But once you have a secure anchoring point, as in roof work, you must consider them.

are 30 feet up or more. On the house I was framing, any carpenter who fell into a net would have hit the ground before the thing took up its slack. But in any case, there was nothing to attach a net to. I consider these systems to be impractical for use in residential construction.

Personal Fall Arrest Systems (PFAS). In situations where guardrails are impractical and where solid anchorage exists, OSHA rules call for tying workers off with "Personal Fall Arrest Systems" — anchors, lifelines, lanyards, body harnesses, and various deceleration devices (Figure 3). The December OSHA directive removed the tie-off requirement for low-pitch roofs or roofs close to the ground, but anyone working on a steep roof (over 8 in 12 pitch), or a roof whose eaves are 25 or more feet above the ground, is usually going to need this gear.

An article in JLC's *Tools of the Trade* magazine (Fall '95) covered PFAS technology in depth. For a free copy of that article, send a SASE to Fall Arrest, JLC, RR 2, Box 146, Richmond, VT 05477.

Alternative Systems

As a framing contractor, nearly every project I'm involved with lends itself to an "Alternative Fall Protection

System," or AFPS. Floor, wall, and roof framing are specifically mentioned in the standard as areas where alternative plans are permitted, and with good reason: Trying to use railings, staging, or body harnesses would not work and would even make things more dangerous. So for house framing in particular, an alternative plan is the way to go.

If you go that route, you must write a detailed "Alternative Fall Protection Plan." This is in addition to your standard plan, which is part of your company's Safety/Haz-Com plans. In your alternative plan, you must explain why CFPS will not work and why an AFPS will result in a greater level of safety for your employees.

OSHA originally wrote the new standard to require a separate plan for each job site, meaning that contractors who frame lots of houses would have to constantly rewrite their plans. But the agency has since backed off, and a single policy for using alternative systems, written into your fall safety plan, is all you need. Under the December OSHA directive, you may be able to simply reference safe work practices agreed upon by OSHA and NAHB.

Making the case for alternative systems isn't easy, though. Arguments like "it takes too long" or "it costs too much" mean nothing to OSHA — your time and your costs are not the agency's concern. Many things that you ordinarily would consider too costly are "feasible" if you spend enough money.

However, for most house framing in progress, OSHA accepts that alternative systems are the way to handle fall hazards. The first requirement for the use of any AFPS is that the location where it is used must be designated as a "Controlled Access Zone" (CAZ). Only authorized personnel are allowed to enter the CAZ (see "Establishing the Controlled Access Zone").

A "Competent Person" must be charged with responsibility for monitoring the CAZ. It is his or her job to keep unauthorized people out of the zone. If other workers have to pass through the area, the Competent Person should stop the work briefly.

A CAZ must be clearly defined. Post signs instructing unauthorized personnel to keep out. You must establish

a way to identify authorized personnel (issuing a distinctive color hard-hat to trained personnel is one option).

Watch Out

A final note of caution. A few days before OSHA issued its latest compliance directive, just before this article went to press, I was cited again by OSHA for a repeat fall protection violation. My men were setting trusses, and there was no feasible way to tie off or use scaffolding. I was in full compliance with the new standard, though — all my men were trained, we had our CAZ set up, and the Competent Person had everything under control. Didn't matter: Although the compliance officials were using the new standard, they weren't even considering alternative fall protection systems.

My problems may be caused by differences between our state OSHA and federal OSHA policies, or by individual officers not getting the word. I'm thrashing it out right now. But the lesson I'm learning is, you can't take anything for granted. ■

Mike Davis is the owner of Framing Square Construction, a residential framing company in Albuquerque, N.M.

Sources of Supply

Sample Safety Plans and Training Kits

National Association of Home Builders (NAHB)
1201 15th St. N.W.
Washington, DC 20005
800/223-2665

American Subcontractors Association (ASA)
1004 Duke St.
Alexandria, VA 22314
703/684-3450

Railing and Scaffold Systems

Safety Maker
P.O. Box 842014
Houston, TX 77284
800/804-4741

U.S. Pro-Tech Corp.
P.O. Box 54441
Cincinnati, OH 45254
513/624-8123