

LETTERS



Tension or Compression?

To the Editor:

I have just seen Harris Hyman's article, "Removing Collar Ties" (4/92), for the second time. I did not write after the first publication because I felt sure that someone else would express the same surprise that I felt. Since no one has, here I am.

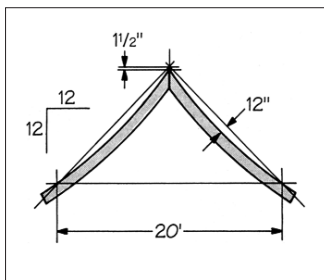
In conventional "stick" construction, it is the job only of the attic floor joists to act as ties to prevent the spread of the sidewalls. Clearly, if the sidewalls are firmly tied by the joists, then any sag in the rafters will put a collar in compression. This is the true function of the collars; to prevent a swayback ridge. The "real effect" of removing collars in a structure with properly fastened joints and rafters is to promote sag in the roof. Without collars, the rafters shown in your Figures 1 and 3 will surely sag if they were sized by conventional standards.

A. M. Devine
Newtown, Pa.

Harris Hyman responds:

What Mr. Devine says is partly true: In the specific instance where the bottoms of rafters are tied into the floor joists (as in Figure 1) and you have a collar, then the collar is indeed in compression. In effect, you have a double collar: The floor of the attic acts as a tension member, and the upper member, the collar, is in compression. It is always true when there's a double collar that the lower is in tension and the upper in compression.

As for the sagging rafters, let's look at a sagging roof, a really bad one. In



the example illustrated above, if the rafters bow in a full foot, the peak sags only 1 1/2 inches. If the building has a 20-foot-long ridge, this is 1:160, which is barely perceptible. Perhaps if the rafters are 2x4s you might get this kind of sag, but in rafters "sized by

conventional standards" this is unlikely. Wherever you do see a noticeable swayback ridge, the sag in the roof will be accompanied by a bulge in the sidewalls — caused by the absence of restraining tension members, whether floor joists or collar ties.

As long as the rafters are securely fastened to the floor joists, as in Figure 1, no collar tie is needed. However, where the rafters rest on platform-framed kneewalls, as in Figure 3, the collar tie is necessary to resist the spread of the roof, since the kneewalls have no strength to do so. These were the main points of my article.

Yankee Basics

To the Editor:

As a builder in New England, I have become accustomed to the increase in source material from faraway places in what is billed as your "New England Edition." But what has happened to some of our Yankee basics? Gill "The Thrill" Gueth's article "When the Cut Goes Beyond 45" (5/92) shows a five-step method that, after Step 2, becomes increasingly unsafe and more time-consuming. What happened to the good old hand saw? This time-honored tool, which every carpenter should still have, will make fast work of Step 5 by avoiding Steps 3 and 4 and at the same time reduce the risk of injury.

A properly sharpened handsaw will do a quick, superior job. In addition, I hope when the seat cut is made on the hip jack that the birdsmouth notch, if used, will not be overcut with the circular saw, but trimmed out with a handsaw. Overcutting the mark will weaken the rafter tails.

Lastly, the article fails to mention that the plumb cuts should be made before marking the seat and tail cuts, as Step 2 shortens the rafter length by the distance between the long and short points made in the first bevel cut in Step 1.

William Anthony
William Anthony Construction
Woodbury, Conn.

America Bashing

To the Editor:

I was interested to hear that someone else is outraged over the exorbitant cost of minor parts in the machines that keep our

business making sawdust (M. Felix Marti's letter, 5/92).

I own a Delta 10-inch Contractor's Saw and recently had to replace the cam in the locking mechanism of the saw's stock fence. The part I needed was a soft steel disk, 1 1/2 inches in diameter by 5/8 inch thick with two holes drilled in it, one of which was tapped.

The part cost me \$60 with almost no markup from my dealer. \$60 is more than 10% of what I paid for the saw brand new and complete less than five years ago. I could have had the part made at a local machine shop for about half of what the mass production version cost.

By contrast, I recently had to replace the chain and gears that drive the feed rollers on my Makita 15 1/2-inch surface planer. The three nicely machined gears, retaining rings, and drive chain cost \$56. That is about what I would expect and what I think they are worth.

American manufacturers can cry all they want about unfair trade practices, but as long as they treat their customers like this, I'm going to buy Japanese.

David Barker
Farmingdale, Maine

Slab Foundations

To the Editor:

We have always known, as J. D. Ned Nisson points out (Focus on Energy, 5/92), that the easiest and most effective way to eliminate moisture problems in basements is to eliminate the basement from your house plans.

As a builder of superinsulated homes, I have found only one foundation worthy of this type of construction: an insulated monolithic slab on a well compacted gravel base. We install a sealed air/vapor barrier very neatly under the entire foundation, which all but eliminates the moisture and radon gas entering the home. Properly constructed, this slab foundation is dry, energy efficient, provides a low-cost "medium" for radiant floor heating, simplifies and speeds up construction, and substantially lowers costs in a variety of ways. If you can find a better value in the construction of a home I'd like to know what it is!

Greg Roberts
Design Concepts Co.
Fairfield, Maine

Engineer's Complaint

To the Editor:

I assumed when I received the April issue of *The Journal Of Light Construction* that the cover photograph was a "What's Wrong With This Photograph?" quiz. The points that I noticed were the following:

1. Neither carpenter is wearing a hard hat. While I can concede that the upper carpenter has nothing above him and may not really need head protection, the lower person on the ladder is in danger of being hit on the head.

2. Both employees are wearing tennis shoes. To compound this problem, the upper carpenter appears to be wearing low-cut shoes, which offer absolutely no ankle support or protection.

3. The upper employee seems to be wearing sunglasses rather than safety glasses.

4. The upper carpenter is wearing shorts. While I must concede that this is cooler, there is more risk of being injured through cuts and scratches when wearing shorts rather than long, comfortable jeans.

5. I would expect that the height of the eaves is approximately 12 to 13 feet above grade. While the upper carpenter is not in violation of a height restriction for being tied off or having guard rails installed, I would suggest that he either have a safety belt or be tied off in some manner when leaning over the edge to complete the nailing of the sub fascia.

6. While the carpenter on the ladder is not standing on the top step, I can very easily imagine that he will step on the top platform to assist in the positioning of the sub fascia. A longer step ladder would be preferred.

Andrew K. Davidson, P.E.
President, Engineered Construction
Verona, Wis.

Correction

The correct address for Flannery, maker of specialty drywall trims ("Drywall Trim: Beyond Cornerbead," 3/92) is 13291 Paxton St., Pacoima, CA 91331.

Keep 'em coming.... We welcome letters, but they must be signed and include the writer's address. *The Journal of Light Construction* reserves the right to edit for grammar, length, and clarity. Mail letters to JLC, RR2, Box 146, Richmond, VT 05477.