

## 16.0

# Working in attics

The two most important issues in working in attics are travel and safety. Travel is discussed below and safety in **subsection, 16.2**.

### 16.1 Travel and Working in Attics

**Walk lightly.** If the ceiling framing members are bouncy you need to walk gently to avoid flexing them which could cause cracks in drywall ceilings (especially at tape joints) and/or cause drywall texture to fall off or crack plaster. Most ceiling finishes are brittle and fragile. The advantage of installing bottom horizontal braces first is that they will help distribute your weight over several ceiling members (a large area) and reduce deflection on a single member. If you do not install horizontal braces on the floor right away, you may want to set them crosswise on the attic floor framing members. Crosswise 2x4s will reduce the chance of causing cosmetic damage to ceilings. Still, one should tread softly. If any boards or plywood are already in place, then be sure it is secured so it does not slide from under foot or flip up when you walk on an unsupported end.

**How many people?** One person can do all the work efficiently **if** they have a horizontal brace jig. Without the jig, one person can install upper horizontal braces alone, but it is certainly more difficult.

**Getting materials into attics:** There are four ways to get lumber into an attic. 1) directly through an attic access, 2) through a gable end vent, 3) through a temporary hole you make in the gable end and then patch (not too practical), or 4) through a gable end whose siding you have decided to replace with new stronger sheathing. Even if there is not much headroom you can usually feed at least 8' long lumber through the opening. You might be surprised to find that you can feed 14' long lumber into just a little more forgiving access. It may take some weaving but it may well be possible. The advantage of being able to feed long lumber in is that the long lumber is ideal for making walking paths should you decide to make them. For gable ends that require long retrofit studs it will save a lot of effort if full length studs can be used because that will spare having to make splices. Splices are easy to execute, but they do take time and additional materials.

Another option for getting boards and lumber into the attic is through a gable end vent that you can remove. This requires an investment in time to remove and then replace the gable end vent. However, it may be worth doing when the option is traversing an attic with materials in hand. It may be especially worthwhile if the gable end vent is to be blocked as described in **Section 13**. Making a temporary hole to feed boards and lumber into an attic likewise requires an investment in time and requires patching afterwards.

**Travel in Attics, a Walking Path:** Air conditioning or heating duct work, air conditioning equipment, possessions, collar ties, webs of trusses and diagonal braces can all compound the problem of accessing a gable end. You may find 1x4 boards or pieces of plywood that carpenters used during the construction of the house, and you will find that these boards do make it a lot easier and less risky to walk. You will especially appreciate them when you are carry tools or lumber. A common term used for 1x4 or 2x4 walkways in attics is rat runs. If the rat runs are not loose you will find them even easier and safer to walk on than just the framing. Be extremely careful when walking near the ends of rat runs, because they may be not have support under them so you may find yourself at the end of a diving board about to fall through the ceiling. It is worth taking the time to secure loose rat runs. They are a lot easier to walk on than the 1-1/2' edge of attic floor framing members and they reduce the chance of your foot slipping off.

**Making a walking path:** If you are going to make a lot of trips into an attic that is not easy to walk in, you should consider adding walk boards. You should use walk boards in areas that are hard to walk in like around air conditioning ducts. If you expect to have to walk back and forth a number of times, you might want to consider having the path two boards wide instead of single width staggered boards. A walking path two boards wide also means you won't have to balance yourself so carefully. However, making a path is not inexpensive and takes time. Nevertheless, if you have to carry a lot of materials to a far end, you may find it well worthwhile. A path made of 1x4 boards is strong enough and wide enough for most people in most situations.

Each end of a walk board should rest solidly on a framing member so that it will not slip off. When adding walk boards, one end of them will likely have to be trimmed so that it doesn't extend past the last framing member. Lay the 1x4s along a path in line with each other. If you do this, we recommend that you add a 2x4 member to the side of the roof framing member where the two pieces meet so that each end of the 1x4s are well supported by a 1-1/2" wide support. Aligning the boards will minimize and the chances of putting your foot or worse.

Although 1x4 boards may not seem very thick, they only have to bridge about 2' so they should be strong enough unless someone jumps on them is particularly big. You can use 2x4s, but they cost more, are heavier to transport and usually their additional strength is not required. However, 2x4s could be worthwhile if the floor is particularly bouncy or you are big. When you have finished retrofitting a gable end you can leave them in place for future use, salvage them for use on another path or salvage them for other purposes. Be sure to secure any existing loose walk boards and plywood to minimize the chance of their slipping under foot. When carrying things it is fairly easy to slip off. The chances of damaging ceilings below will be reduced if screws, are used to secure the boards. Just a few fasteners are sufficient to secure the boards and using just a few makes it faster to salvage the boards for another use. A disadvantage of using 1x4 walk boards is that they will not distribute one's body weight over as many ceiling members as 2x4 would. However, unless one walks with a heavy foot this probably would not be an issue. An advantage of using screws to anchor walk boards is that it is easier to salvage the boards for other purposes.

**Carrying materials in the attic:** A plastic carrying tray is handy to carry tools and fasteners and straps. Having such a container where you are working will give you a place to store tools without having to put them on the floor where they can get lost in insulation. See the discussion in Section 15 about how to make a tool carrier.

When carrying boards or lumber through an attic with obstructions that force you to climb over things, it might be helpful to have a place to set the lumber down. If there are truss webs nearby, you might be able to make a resting place by adding screws or nails that would serve as stops to restrain boards and lumber so you have two hands free to maneuver over obstructions.

Be respectful of AC ducts that you may have to climb over or under because the ducts and their joints can be fragile. If you create leaks by moving them around it will cost you in electric bills unless you find and correct the leaks.

## 16.2 Safety

Attics are places to use caution while working because of heat, falling and tripping hazards, protruding nails and electrical shock hazards. Other hazards include head bumps, head scratches from nails from roof decking, fatigue, wear and tear of knees and puncture wounds from pneumatic nailers. A little caution and awareness will go a long ways to minimize these hazards. Bear in mind that if you get into trouble in an attic it may be very difficult for people in the remainder of the house or even in another part of the attic to hear your call for help. A cell phone or cordless phone is a valuable safety device should you need help. Another technique for seeking help from someone else in the house is to repeatedly tap or rap on something.

**When to do retrofit work:** In the summer or on an overcast day, it is likely that one can work in attic only until about 10 a.m. when temperatures can reach the mid 90s or higher. Working in such temperatures for very long will cause fatigue. By 3:30 p.m. in the summer temperatures can soar to be in the 125 degree range. It's best to plan to get work done early in the day or to work in cooler seasons. However, even in spring and fall, attics can be oppressively hot in the afternoon on a sunny day. For homeowners doing retrofit work, it is not impractical and maybe even desirable to work just a few hours every day or on weekends.

**Heat Hazard:** Heat exhaustion can be a real danger and a serious health threat that you should not ignore. When working in an attic, especially when starting when it is cool, one may not fully appreciate the cumulative effect of heat and dehydration. When the attic is cooler one tries to get just a little more work done, to not take breaks to cool off and to not hydrate adequately. These can be dangerous tendencies that you should be on guard against. There are two aspects of heat in attics that affect you. One is the temperature that registers on a thermometer, and the other harder to measure is that of radiant energy that can add another 20 degrees to your body.

**Heat stroke:** Heat stroke can make you very sick and can affect your balance and ability to think clearly. Water does not replace the electrolytes lost through perspiration and missing electrolytes are a key issue in heat stroke. You should hydrate before going into the attic and stay hydrated by drinking sports drinks with electrolytes. You should take breaks out of the attic. Try to complete retrofits before hurricane season so that you do them in a cooler season, or budget time to work in the mornings. If you are working in the summer, stop working by roughly 10 or 11 am at the latest.

**Ventilation:** Ventilation can do a lot to make it more comfortable but it does not solve the hydration issue. Strangely we have found that a fan does not need to blow directly on one to help make one more comfortable. Just air circulating in the general vicinity makes a big difference.

**Fall Hazard:** The likelihood of falling can be reduced by being careful. Having good walk paths and having good lighting reduces the risk.

**Electric Shock Hazard:** Shock hazards can come about because of frayed wires, wires damaged by vermin, nicked or frayed extension cords, open electrical boxes, existing staples or nails that have penetrated wiring and your moving wires. Caution and prudence are the keywords when around wiring.