

# STRUCTURAL BUILDING COMPONENTS MAGAZINE

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## Education Saves Lives – The Fire Performance of Wood Trusses Part 3 by Molly E. Butz

*What should the fire service know about the truss manufacturing process? Section 3 of the CSCI program clarifies the process through a series of training videos.*

The dictionary defines fire as, “a rapid, persistent, chemical change that releases heat and light and is accompanied by flame.” It sounds innocuous enough, but the truth of the matter is significantly less scientific for anyone who has lost a business, home or loved one to a fire. Often unpredictable and generally unforgiving, structure fires bring to the table many concerns, including this: What is the structural framework of the building? Trusses are only one type of structural framework, but they are also very misunderstood and often maligned, which causes trusses to be feared by the fire service.

Section 3 of the Carbeck educational program, *The Fire Performance of Wood Trusses*, introduces the first in a series of training videos that the Wood Truss Council of America (WTCA) made in conjunction with the Houston Fire Department (HFD). In this video, the manufacturing process of metal plate connected wood trusses is viewed through the eyes of a firefighter.

Captain Timothy Neal of HFD narrates as the firefighters begin their journey into truss manufacturing. The HFD video reviews the history of trusses, which we explored in Part 2 of this series (see the August 2003 issue of SBC Magazine), and pushes forward to examine the benefits of using metal plate connected wood trusses. The triangle is the strongest shape known to man, and the triangular structural integrity of a truss allows it to take on many profiles and pitches, plus trusses can easily span distances much greater than 80'. And, although individual trusses tend to be priced higher than comparable conventional framing, they lessen the labor costs by necessitating fewer people and fewer hours on the jobsite.

Captain Neal continues with an explanation of lumber grading and tree species, as well as briefly describing some common lumber vocabulary such as warp, wane and crook. Important truss specific terminology is pointed out and diagrams highlight precise words, from heel and clearspan to slope and pitch. (See Figure 1.)

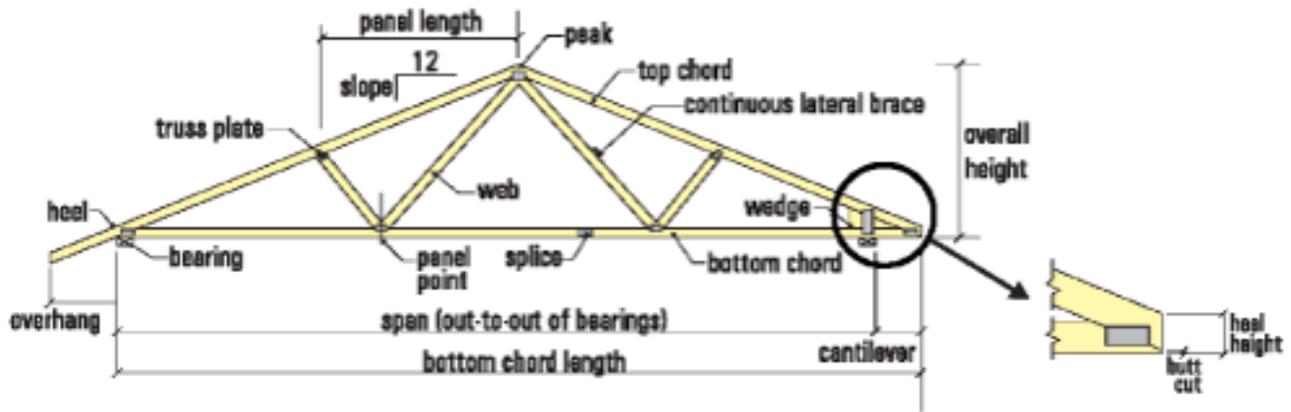
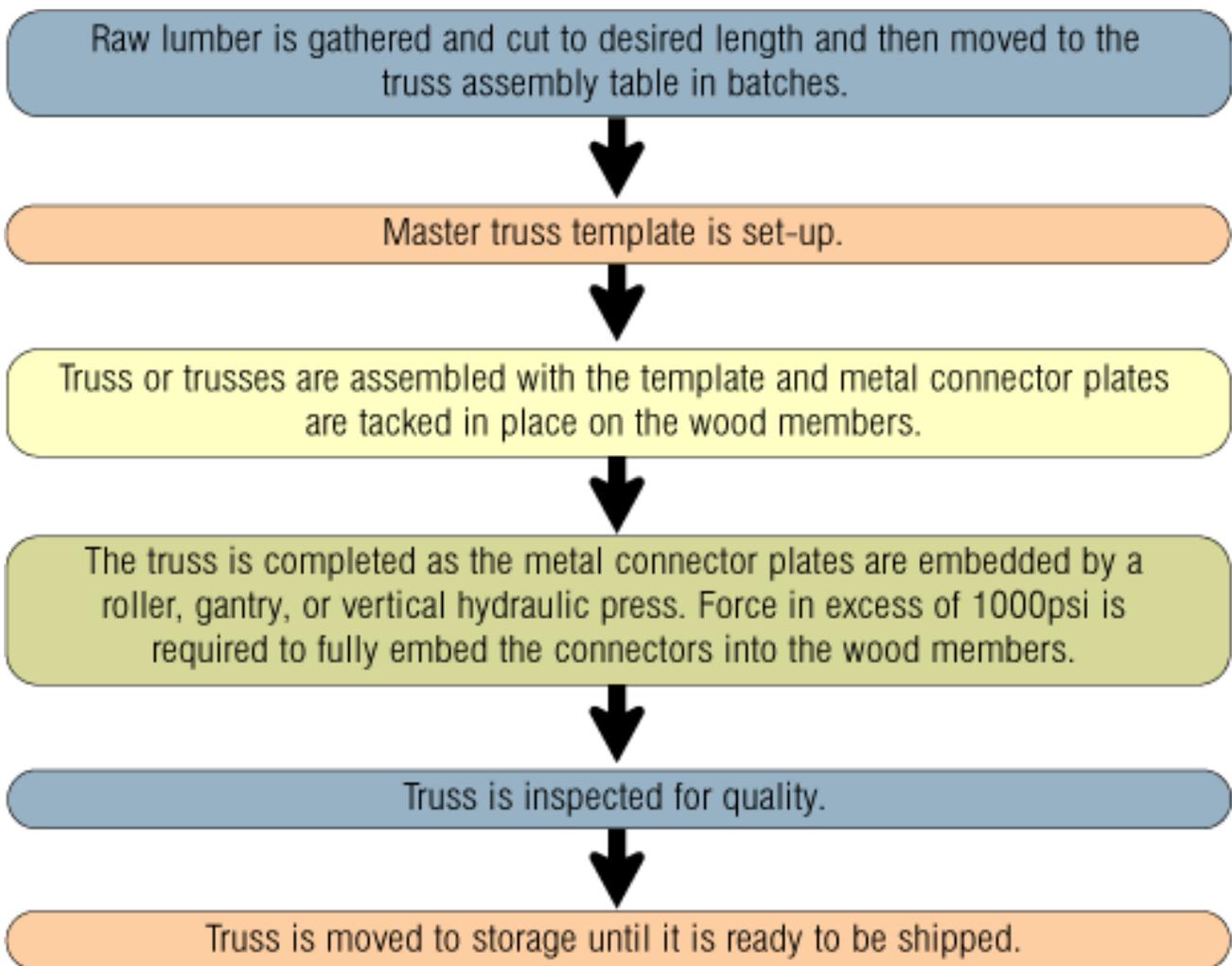


FIGURE 1  
 CLICK ON IMAGE FOR LARGER VIEW

The video also takes a closer look at the truss manufacturing process, and though it is simplified, it is a good representation of how the industry operates. (See below.)



Understanding the structural framework that lies within a building can mean life and death on the fire ground. The quest of the collaboration between WTCA and the HFD as explained by Captain Neal, is not to “endorse” one type of framing over another, but rather to provide a better understanding of trusses and the truss industry and to improve understanding and fireground safety

overall.

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Look for the fourth installation in this series in the November 2003 issue of SBC Magazine which will focus on Section 4 of the CSCI Fire Education Program.

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