Back to Basics

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The H-brace

A fence is no better than its corners and braces. Jack Walther, a longtime rancher from northeastern Nevada, should know. He has dug more than his share of postholes in his 60-plus years of ranching. He has also repaired many fencelines and corner posts that were improperly constructed to begin with. In this month's issue of "Back to Basics," I'll examine basic corner post H-brace construction.

A true triangle

There is nothing stronger than a true triangle. Keeping this simple fact in mind when constructing a brace is the key. Each point of a true triangle supports the other two sides. Most braces are constructed with the crosswire attached to the opposite post at a height above the horizontal cross member (see Photo 1). When constructed in this manner, a true triangle is not formed; thus, strength is lost.

Additionally, most braces are constructed with a second crosswire, which Walther says isn't needed for end braces. If it makes you feel good to put in that second crosswire, twist it separately from the necessary crosswire. Twisting crosswires separately maintains a true triangle. The only time a second crosswire would be necessary is when there is a pull from both sides of the brace, such as a heavy gate pulling one way and the strain of the fenceline pulling the opposite way.

If you examine braces constructed with two crosswires, you will find that the unnecessary crosswire becomes loose over time, while the crosswire that is supporting the fence remains tight.

H-brace strength

Another common mistake is setting posts too close together. For best strength, set posts a minimum of 8 feet (ft.) apart and 2.5 ft. deep, tightly packed.

Placing the horizontal wooden cross brace too high is another common mistake. For maximum strength and longevity, basic engineering and physics principles place the cross member 3 ft. up the post.

Photo 2 shows a properly constructed H-brace. Notice that the diagonal crosswire is at the same height as the horizontal 8-ft. wooden cross brace, which is set at a 3-ft. height. Notice also that there is only one crosswire — it forms the vertical long side of the triangle on the dead end post, not the line post. This makes a true triangle with strength designed to withstand the pressure of the fence over time.

Different conditions require different construction techniques. We do not have room in one article to talk about proper construction of each type of brace for every condition. But, there are a few commonalities with all braces, such as materials. Using treated posts or railroad ties is a must for longevity. Too often we take shortcuts and use nontreated posts only to have them rot after a few years. Thus, we lose our fence anchor. Smooth wire is the product of choice for crosswire material in braces because it will twist evenly.

Walther concludes that the biggest mistake he often encounters in H-brace construction is the unnecesary second crosswire. Twisting this second unnecessary crosswire with the necessary crosswire destroys the triangle effect of construction. Over time, this is destructive to the brace's strength, which causes the post to give and lean.

As always, if you would like to discuss this article or simply would like to talk cows, do not hesitate to contact me at (775) 738-1721 or torellr@unce.unr.edu. Jack Walther can be contacted at (775) 753-6498. He invites ideas from others on the subject of fence construction.

Photo 1: Jack Walther says most braces are incorrectly constructed with the crosswire attached to the opposite post at a height above the horizontal cross member.

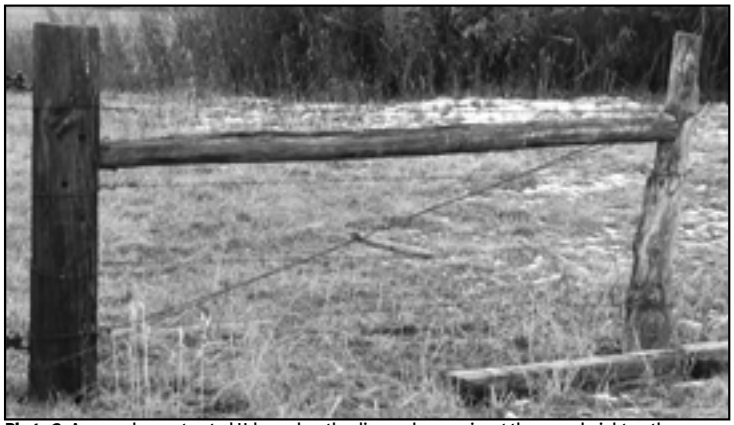

Photo 2: A properly constructed H-brace has the diagonal crosswire at the same height as the horizontal cross brace.