Simple New Way To Handle Small Square Bales

By Bill Gergen, Senior Editor

Conrad Keddie makes about 5,000 small square hay bales a year to feed horses. He was tired of handling the bales twice – in the field and back at the barn. He couldn't justify the cost of an automatic bale wagon so he came up with a nifty new "palletizing" bale cart that leaves perfectly stacked piles of bales in the field on wood pallets. Once bales are stacked on the pallets he never has to handle them by hand again.

Keddie's "pallet" bale cart tows directly behind the baler. It's equipped with 4 forks and metal sides that wrap around a wood pallet that holds 40 bales. He built the rig from the ground up.

"I wanted something that required at most one additional person because it can be difficult to hire a crew at baling time," notes Keddie.

There's a horizontal wooden platform running across the open front of the cart for the operator to stand on. A sun shade over the top provides some comfort in hot weather. A pair of swing-out doors on back are closed for loading. Forks at the base of the cart are hydraulically raised or lowered. A pair of extra pallets store on the sides of the cart.

The cart's two fixed sides are slightly wider at the back and also at the bottom to make it easier to unload stacked pallets. The forks that carry the pallet are attached to a common cross pipe with a hydraulic cylinder on each side to raise and lower the forks.

To operate, one man stacks bales 4 high onto the pallet. Once the stack is complete, the baler stops. Then the bale stacker manually opens the back doors, lowers the pallet and the driver pulls away. Two men then grab an empty pallet from alongside the cart, lay it on the ground to be loaded onto the forks, and then close the doors.

Later on, a loader tractor equipped with bale forks is used to load the bale pallets onto trailers or wagons for the trip back to a storage shed.

"I've used it for 4 years and it works great. Once bales are stacked onto the pallets the entire process is automated," says Keddie. "Having 2 empty pallets on the cart means I can usually make a full round in the field. I stack empty pallets around the field and throw them onto the cart as I go by.

"In the evenings and mornings I haul the pallets of bales to my shed with two wagons, one behind the other, two pallets per wagon. In the shed I double stack the bales, staggering the top row so the top pallet straddles two lower pallets. My Deere 4020 front-end loader with forks can comfortably handle the 2,000-lb. plus loaded pallets. Another big advantage of the pallets is that the bales are held off the ground allowing air to flow underneath."

Pallet slips over 4 long forks to form cart's floor. After bales are loaded, Keddie lowers forks to ground, then drives forward to leave pallet in the field.

Keddie used 2 by 6's and 4 by 4's to build the pallets. "I built 100 pallets which is enough for 4,000 bales. Customers usually return some of the pallets during the baling season so I always have enough on hand. Occasionally a pallet gets damaged and has to be repaired but just about all my original pallets are still good. If I was making 20,000 bales I probably wouldn't use this system because it would require so many pallets it might not be practical.

"I found that 4 rows of 10 bales works best. I build the stack from the back, completing the fourth tier as soon as possible so I don't have to reach over the top of bales to complete a row."

Keddie found that the forks weren't strong enough to keep the tips up with a fully loaded pallet, so he added a spreader bar and chain with a light chain hoist on back. It holds up the tips of the forks and also holds the doors closed.

After building the cart he made one major change. "At first I had a solid tongue, with the bale cart more or less balanced on two main wheels, but I found that during the bale loading process the cart pushed up or down on the baler so I added a single front caster wheel and moved the main wheels back," says Keddie. "The tongue now is hinged and only pulls and steers the cart, which works better."

Keddie says if anyone is interested he has CAD drawings of the cart and pallets he could make available.

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