

He Picks Berries With A Cherry Picker



Malcolm mounted the boom from a bucket truck on a trailer. "Works great to reach out over a thick patch of berries," he says.

"It's perfect for picking berries on our 20-ft. tall elderberry shrubs," says Sandra Wright about her husband Malcolm's 30-ft. rebuilt cherry picker that mounts on a trailer. "It's

great for getting into big blackberry patches, too."

When a local sawmill was replacing their bucket truck, he bought the old one for just \$650. Rather than fixing up the truck, he chose to remove the boom and mount it on a trailer.

"I didn't want to deal with insuring and licensing the truck and dealing with all of its maintenance," says Wright. "By making a trailer for it, I eliminated all that. Plus, I put a long hitch on it, so I can back the trailer into ditches and places I might not want to take a truck."

Compared to the many commercial sawmills and other projects that Wright, an electrical engineer, helped design and build over his 50-year career, his cherry picker was simple.

The key feature is a 2 1/2-ft. tall trapezoid with about a 5 by 5-ft. base. It narrows to 32 by 32-in. at the top. He fabricated it from 3/16-in. steel plate and welded the base to 3/16-in., 3 by 6-in. steel tubing crossmembers that frame out the trailer.

"The trapezoidal shape is super strong," says Wright. "I welded a 6-in. wide, 1/2-in. thick steel plate rim around the top and bolted

the bucket boom base to it."

The front end of the frame extends out another 2 ft., and then narrows for 6 ft. to a ball hitch. A platform ahead of the trapezoid holds an 8 1/2 hp. Briggs and Stratton engine with a 2-stage hydraulic pump. He bought them secondhand, although they were brand new. They had been purchased originally for use with a log splitter.

"I can control the boom with the valves in the bucket, or if there is a problem, someone on the ground can control it from below," says Wright.

At each corner of the trapezoid base, Wright devised a swivel system with 5-ft. long outrigger legs that rotate 90 degrees. He fabricated the legs out of 3 by 4-in., 1/4-in. steel tubing. Feet made of 12 by 12-in., 3/8-in. steel plate pivot at the end of the heavy legs.

"The weight of the legs adds to stability," says Wright. "Originally, I planned to fill the inside of the trapezoid with concrete, but I found the trailer was heavy enough without it."

Whether used for tree trimming or picking berries, Wright encourages others to put old bucket booms to work. "I had wanted to



Boom is bolted to a 2 1/2-ft. tall, trapezoid-shaped frame equipped with a 5-ft. square base.

build a bucket boom trailer like this for a long time," he says. "Used booms are pretty cheap. I thank God for the ideas he gives us."

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Flow Thru Harvester is designed to pick up crates filled by ground-level pickers. As it moves down the row, crates are gradually carried up an incline.

Harvest Platforms Speed Apple Picking

The Flow Thru Harvester (FTH) and the Hi Lift Bin Hauler from Precision Manufacturing are designed to speed harvest in orchards of 200 acres and less, in particular for those that have shifted production to high density planting.

"Our platforms are designed for smaller orchards, farm-to-market, and pick-your-own operations," says Mario VanDyke, Precision Manufacturing. "They make it easier to recruit labor and increase picker efficiency."

The self-propelled FTH is designed to pick up crates partially filled by ground-level pickers. As it moves down the row, bins are gradually carried up an incline. As many as 8 pickers can stand on platforms at multiple elevations, gathering apples at up to the full 13-ft. tree heights. Bag holders beside each picker let them concentrate on picking. Once filled, the bags are quickly dumped into the nearest crate. When the bin at the highest level is full, the operator lowers it to the ground, making room for the next bin.

The 5-ft., 4-in. wide FTH expands to a 10-ft., 4-in. width when picker platforms are fully extended. The work stations are flexible with moveable railings, foot pedals and controls.

If the \$65,000 price is too much for smaller orchards, VanDyke offers a simpler picking platform. The \$15,000 Hi Lift Bin Carrier is towed by a tractor that supplies the hydraulic lift. With its picker platforms, it is a step up from the company's bin haulers designed to place and remove bins from the field. Those bin haulers are also tractor pulled (or pushed). Available in 3, 4 and 5-bin models, they start

at \$8,900.

Empty bins are loaded before entering the orchard. Once bins are filled, the carrier leaves the field and returns with more empty bins.

"Starting out within 3 in. of the ground, the carrier raises bins and picking platforms to allow picking 12 to 13-ft. trees," explains VanDyke. "We have one customer who has 2 units. As one set of bins is filled, the second is there with a fresh set of empties."

The current system requires an operator on the tractor; however, VanDyke hopes to have a remote control unit on the tractor for next season. Giving control of the tractor to a picker on the carrier is just the first step.

VanDyke notes that the Hi Lift Bin Carrier requires only 25 hp. motive power. Eventually, it may have a dedicated power unit on tracks to power it through orchards.

Both the FTH and the Hi Lift carrier are designed for apple harvest. However, VanDyke points out year-round potential use, especially for the 4-WD FTH. Jobs include hand thinning, trellis work, pulling wire and hanging pheromones.

"We have pick-your-own operators who like to use the Hi Lift Bin Carrier," says VanDyke. "They pick the apples higher in the trees to discourage pick-your-own customers from climbing into trees and breaking branches."

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"Destemmer" uses a section of flighting inside a hardware cloth drum to destem clumps of elderberries, which are fed into a hopper on front.

A New Way To Harvest Elderberries

After 20 years of harvesting elderberries, Mike Breckel realized there had to be a better way to separate the berries from the stems. He estimates his "destemmer" lets him do from 50 to 100 times as many berries as any other method he has tried. With around 900 elderberry bushes, it's a tool he needed.

"If you just want the juice, you can simply crush them, but if you want the berries, it's time consuming," says Breckel. "I tried rubbing clusters of berries across hardware cloth to separate the stem from the berries. That was my 'aha' moment," he says.

Breckel needed a mechanical way to replicate his rubbing action. What he came up with was a section of flighting inside a hardware cloth drum. The entire unit is about 4 ft. long and around 17 in. wide.

"The challenge was to get the flighting less rigid so it wouldn't crush the berries," says Breckel. "It had to push them in a soft brushing way. I had to get the right bend in the flighting. The first one I made was from salvaged stuff I had in the basement."

Once he had a prototype, his son-in-law and a friend who are engineers went to work on the project. They made a working model with food-grade materials. It has been powered by hand crank and even by bike pedal.

This fall, Breckel mounted it on a small wagon and took it to the field to destem berries as they came off the bushes. The mobile version is powered by a small DC electric motor that runs off the tractor's battery.

"I can do 75 to 100 lbs. an hour when it's

set up stationary feeding it clusters of fruit," says Breckel.

While destemming the berries in the field was not as fast, it left the stems behind, and only the plump berries were carried home. As Breckel drove down the 10-ft. high row, a picker to each side clipped clusters and dropped them in the feed hopper at the front end. Stems were expelled out the other end, and berries dropped through the drum into flats underneath.

Breckel has high hopes for the destemmer, which is practically silent. He hopes it encourages small farmers to begin growing the fruit. He has been selecting cultivars for the past 20 years. He estimates having around 40 to 50 different lines of elderberries in his 1-acre orchard.

"I have some that are very resilient to shattering and much more determinant than wild varieties found on roadsides," says Breckel.

With the destemmer, Breckel has eliminated one of the major bottlenecks in production. Picking them by hand is another, but that is one reason he believes they can work with small farms and plots like his.

"I am very enthusiastic about it," he says. "I have worked out an arrangement with an area business to manufacture the destemmer." Peter Berquist of Oppen Works will build them. Breckel expects that both he and Berquist will distribute them.

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