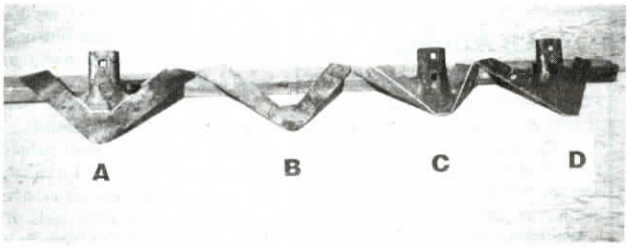
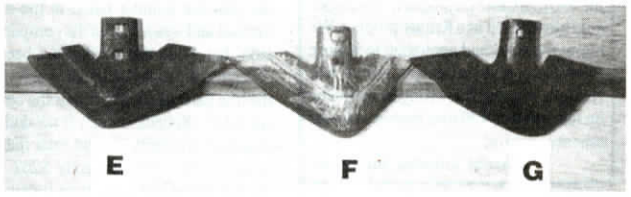




He Rebuilds Old Cultivator Shovels

You can save money by making one cultivator shovel out of two old used shovels, says Marvin Hagen, Etzikom, Alberta, who rebuilds cultivator shovels in his spare time in the winter.

"It costs me only about $2 to make each shovel. I find they actually last longer than new shovels because they're wider than most new ones," says Hagen. "I can rebuild 10 to 12 shovels in one afternoon. I rebuild the shovels on my field cultivator, but shovels on row crop cultivators could also be rebuilt this way. I don't do custom work. I just make them for my own use."

Hagen uses one 18-in. wide shovel for the outside and a 16-in. wide shovel for the inside or top. "Shovels that are worn out too much aren't worth rebuilding. You need to have 18-in. wide shovels for the outside cutting edge because a 16-in. wide used shovel will be only about 14 1/2 in. wide when finished. You can also use two 18-in. wide used shovels."

A. Begin with a used 18-in. wide shovel. Mark as indicated. Use a square to make a straight line that's square with the heel of the shovel. Use a cutting torch to cut straight across the front. Don't "V-cut" across the front because the point will be too short. Your result will be B.

B. Trim B with a grinder or angle grinder.

C. Take a 16-in. wide shovel (C) and lay B on top of C, then mark and cut with torch. The result is D.

D & E. Trim D with a grinder or angle grinder. Place D on top of B and weld together with a low hydrogen welding rod. Spot weld on bottom sides.

F. Cut the heels off D so they're even with B.

G. The new finished shovel. Painting the shovel isn't necessary.

Contact: FARM SHOW Followup, Marvin C. Hagen, Rt. 1, Etzikom, Alberta Canada T0K 0W0 (ph 403 666-2244). **Reprinted from Grainnews**

Recycle Cultivator Shovels For 60¢ Each

"New cultivator shovels cost about $4.00 apiece but I've figured out how to rebuild old ones for just 60 cents," says Kirk Deardorff, Hale, Mo.

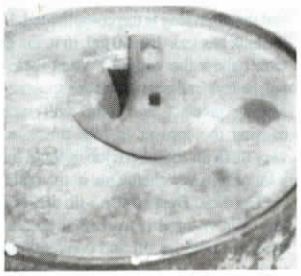
"I buy 1 1/2-in. wide, 1/4-in. thick flat iron for about 58 cents a foot. That's about how much iron it takes to rebuild a worn-out shovel to like-new condition," says Deardorff.

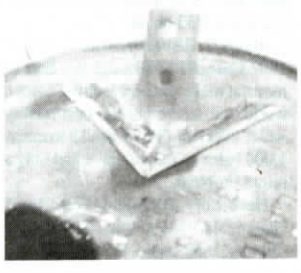
"Most cultivators have a 35° wing angle and an 8° up slope. Take two pieces of flat iron and cut off the ends at a 35° angle, the same length as the sides of the original shovels when new. Then weld two of the ends together, propping up the back edges to get an 8° slope.

"The next step is to clamp the worn shovel in position on top of the new wings and weld them together at the point. Heat the old shovel and hammer it down for a flush fit to the new wings. Then finish welding all along both edges and use a hand-held grinder to put a sharpened edge on the new wings.

"One problem is that the new mild steel wings will wear away quickly unless temper hardened. Here's how you can harden them:

"Immediately after welding and grinding, the wings and the sharpened edges will be very hot. Quickly immerse the entire shovel in water for 3 sec., remove for 3 sec., and then immerse again for 3 more sec. Then very lightly touch up the sharpened edges with a grinder to remove the burnt purple color."





Contact: FARM SHOW Followup, Kirk Deardorff, Rt. 1, Box 164, Hale, Mo. 64643.

Buried Railroad Tank Car Provides Air-Tight Seed Storage

By C.F. Marley

Two issues ago we told you about a Michigan farmer who made a state-of-the-art, giant capacity dump pit by burying a railroad box car near his grain storage bins (Vol. 16, No. 1). After that story ran we heard about Illinois farmer Joseph Burt who buried a railroad LP tank car on his farm to provide air-tight, temperature controlled seed storage.

Burt, who farms near Flora, is a commercial grass seed producer. He needed a way to store seed that would retain germination for up to 30 months. In the past he experienced a rapid fall-off in germination with conventional storage. He likes to sell his pasture seed direct and needed to protect the quality.

"I needed more even temperature and a way to control humidity," says Burt, noting that the tank is air tight and he modified it so he can fit it with a vacuum pump so seed can be kept in a vacuum.

The tank is 65 ft. long and 10 ft. in dia. It'll hold 20,000 lbs. of bagged seed.

The bottom of the tank is about 15 ft. below ground level since the tank is covered by about 6 ft. of soil. He selected a hillside location with drain tile running to it. "I wanted to avoid any chance of ground water floating the tank out," says Burt, who just buried the tank last fall and is still in the initial stages of his "experiment".

"What I'm shooting for is a year-round interior temperature of from 50 to 60 degrees with a humidity of 50 percent or less," he explains.

The tank was delivered to the farm on a flatbed trailer and unloaded by two large cranes.

Contact: FARM SHOW Followup, Joseph Burt, Rt. 1, Box 232, Flora, Ill. 62839 (ph 618 662-4040).

Railroad Tank Car Stores Liquid Fertilizer

Old railroad tank cars work great for storing liquid fertilizer, says Jack McGregor, Clinton, Ontario, who stores up to 10,000 gal. of 28% liquid nitrogen in a junked-out tank car.

McGregor paid $500 for the tank car which he bought from a neighbor. He hired a crane to place the tank car in his farm yard.

"Having on-farm storage lets me buy liquid fertilizer in bulk when prices are low," says McGregor, who uses a truck-mounted tank for broadcast application and a cultivator for sidedress application in the spring. "For example, I was able to buy 28% liquid nitrogen a year ago last fall when it sold for $118 per ton compared to $160 per ton last spring. I had been using anhydrous ammonia, but when I switched to ridge till it wouldn't seal in properly on my heavy soil. Also, I wanted to dribble in liquid nitrogen behind my ridge-till cultivator.

"Liquid nitrogen generally costs more than anhydrous, but being able to take advantage of price savings lets me cut the difference. Having large storage capacity also saves trips to my local supplier. The tank car has heavy 1/2-in. thick steel so it won't rust out for many years."

McGregor piled up two long mounds of sand and laid the tank car between them. He installed a 3-in. dia. valve on one end for unloading, as well as a sight gauge. The tank car loads from the bottom.

Contact: FARM SHOW Followup, Jack McGregor, Rt. 5, Clinton, Ontario Canada N0M 1L0 (ph 519 233-9955).