



Campbell with his Big Bud and DMI 21-bottom plow model.

300 Scale Models And Counting

Don Campbell has brought his and others' farm equipment memories to life as 1/5 and 1/2-scale models more than 300 times. Many of his models have been custom-made, mostly based on personal memories, while others resulted from machinery he saw on trips.

His creations have appeared in FARM SHOW over a dozen times, and he has gathered more than 15,000 members in his Don Campbell Model Maker Facebook group. He has uploaded over 500 videos to his YouTube channel, which has 16,000 subscribers. His videos explain how to do what he does.

Recently, he shared with FARM SHOW that he's cut back on his model building.

"I'm now 73 years old and slowing down," says Campbell. "I still love the toy building hobby, but I no longer build special toys for other people. The last couple of years, I've been adding to my personal collection."

Campbell's past work includes 20 1/2-scale working models based on garden tractors. Some were equipped with plows, others with push blades or other attachments.

"I loved our 4020s the most," says Campbell. My first mini was a 4020 based on a Deere 430 diesel riding mower. I loved

it so much, I built a mini 4010 from a 110 riding mower and then another 4020 from a 140 riding mower. Those three were the beginning of five years building minis."

Campbell also built hundreds of 1/5-scale models of farm equipment, construction equipment and even locomotives.

Many were based on equipment he remembers from his boyhood farm or that of neighbors. Others were built for friends, like the Big Bud with a DMI 21-bottom plow. His friend owns the real thing.

"The plow alone consisted of 2,000 pieces," says Campbell.

The Deere B, D and a recently added 530 were based on farm memories, some of the earliest he can recall. In the case of the 530, he still owns the original full-size version.

Other memory-based models include a Minneapolis-Moline corn sheller from his home farm. A Case 1200 was based on one a neighbor owned when Campbell was a boy, and they still own.

"Most of my toys had a special memory for the collectors I built them for," says Campbell. "Even the old corn sheller had precious memories for me."

A year ago, Campbell sold two of his remaining minis. One was a Deere 9630 equipped with a Degelman four-way blade. The other was a Deere 730. The 9630 was based on a Steiner 430 Max compact tractor.

"I still have seven minis along with three



Campbell has more than 15,000 members in his Model Maker Facebook group.

trailers and a scooter," says Campbell. "I decided I needed to cut back on the number, as it's hard on stuff when it isn't used or driven."

Although he no longer creates custom work or builds models to sell, Campbell invites new members to join his Facebook group. It's the best place to see his upcoming projects, like the Koehring 1066E excavator.

"I'm currently building a Mack truck and an IH Payhauler truck," says Campbell. "I hope to keep building machinery. It's been such a wonderful hobby, and I've met so many great people."

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When the machine was designed, the horses were smaller, probably 1,300 to 1,500 lbs. Today, they weigh around 1,800 lbs. each.

HP Drive Rebuild Had Unforeseen Twists

When Dale McLaen and the Fort Ransom Sodbusters decided to restore a Dingee-Woodbury Horse Power sweep unit, they bit off more than they expected. A simple restoration got complicated fast.

"It had been used pretty hard," says McLaen. "Draft poles had broken or rotted off. Other parts had broken, and attempted repairs just made things worse. The drive keys in three of four gears on the main shaft and counter shaft were missing. It was being operated with one gear, instead of four, on top of the spur gear. The last time it was used, the main shaft and counter shaft twisted, which we didn't realize until we started putting it back together."

The Dingee-Woodbury Horse Power sweep unit was built by Case in the early 1900s to power large, stationary equipment, like Case threshing machines. This unit was sold to a Nebraska farmer around 1904. In 1976, it ended up at a threshing show in Minnesota. In the early 1990s, the Sodbusters bought it and moved it to Fort Ransom State Park in North Dakota, where it was part of demonstrations of old farm machinery.

With a penchant for mechanical challenges, McLaen brought the Dingee to his shop. Other members helped whenever they could, disassembling, painting and reassembling. New shafts were milled. An operator's platform was recreated with new oak and more.

McLaen gives extra credit to Jim Rutland, who machined several parts, and to Jim Briden at Larson Welding, who made the shafts.

"No way could we have done it without them," says McLaen, who dedicated hundreds of hours to the project himself.

As the group reassembled the machine, things often didn't go right. They had no manual to turn to for answers, or so they thought.

"The only reference we found was 'Science of Successful Threshing' by Dingee-MacGregor, published by J.I. Case Threshing Machine Co. in 1904," says McLaen. "It had only one chapter devoted to the horse power machine. I think I read it 20 times without understanding what I read."

Part of the problem was the difference between the terms Dingee used and the

common terms for the same thing today. Also, the way it was before disassembly was not necessarily the way it was supposed to be.

With all the parts laid out before him, McLaen found what he was searching for in the adjustments section of the chapter.

"Neatly tucked away in those few paragraphs was everything on how it was originally assembled," says McLaen.

Once the machine was back together, McLaen made a tool to turn the main shaft by hand to check the gearing. The vital chapter in the book also aided in recreating the exact 12-ft., 8-in. length of the draft poles.

The machine was reinstalled at Fort Ransom and connected to a threshing machine. New draft poles were installed, horses were hitched up, and the gears started turning. It had been a year and a half since the task began, and more surprises were ahead.

"It took a few seconds to get the horses up to speed. The threshing machine was howling like a jet engine," says McLaen. "A front axle broke off due to the stress. The desired speed of the input shaft was 230 rpm or 2.4 revolutions of the horses per min. When we

counted, they were making 4.16 revolutions per minute for 416 rpm. It was running at twice the speed designed for."

The issue was the size of the horses. When the machine was built, the horses were smaller, probably 1,300 to 1,500 lbs. Now, they weigh around 1,800 lbs. each.

"The shear mass pulling on the gears was probably 50% more than anticipated when the machine was built," says McLaen.

The group's solution was to reduce the output shaft speed by about 35% to match the desired threshing machine speed. While everything was soon working, one more change was needed.

"Jim Rutland pointed out that there was no shear pin in the entire works," says McLaen. "That likely led to the twisting of the shafts. He went to a metal shop, and they devised a place for a shear pin at the output shaft. It has two holes, one for a 1/4-in. pin and one for a 5/16-in. if needed."

The big question in his mind is what other surprises or discoveries are yet to be found.

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McLaen brought the Dingee to his shop. Members helped with disassembling, painting and reassembling.