Vol. 49, No. 6, 2025

Editor and Publisher
Scott Geyer *(scott@farmshow.com)*
Editor Emeritus
Mark Newhall (*mark@farmshow.com*)
Founder
Harold Johnson *(2006)*
Contributing Editors
Jim Ruen (*edgecom@acegroup.cc*)
Lorn Manthey *(redoakridge@mac.com)*
Lydia Noyes *(lprunner58@gmail.com)*
Bruce Derksen *(dbksen39@live.ca)*
Circulation (*circulation@farmshow.com*)
Maddie Kammerer, Jenn Wetschka

FARM SHOW (ISSN #01634518) is published bi-monthly (6 times/year) for $30.95 per year ($39.95 in Canada) by Farm Show Publishing, Inc., 8500 210th St. W, Lakeville, Minn. 55044. Periodicals postage paid at Lakeville, Minn., and additional post offices. POSTMASTER: Send address changes to FARM SHOW, P.O. Box 1029, Lakeville, Minn. 55044 (ph 952-469-5572; fax 952-469-5575; email: circulation@farmshow.com; website: www.farmshow.com). Single copy price is $6.95 ($8.95 in Canada). Publication No. 469490.

In Canada:
Publications Mail Agreement No. 40032660, Return Undeliverable Canadian Addresses To: Dycom Mail Svcs.,495 Berry St.,Winnipeg, MB R3J 1N6; Email: circulation@farmshow.com

FARM SHOW does not accept advertising and focuses exclusively on new products and product evaluations in regular issues.

FARM SHOW does not charge for new products or services featured in the magazine. Anyone with a new product or service of interest to farmers - whether inventor, manufacturer, marketer, distributor or whatever - is invited to contact FARM SHOW regarding possible publication. Products and ideas published in FARM SHOW Magazine may appear in print, online, our newsletters, and or social media accounts.

FARM SHOW Publishing, Inc., has not tested or used any of the ideas or products described in its publications. FARM SHOW Publishing, Inc., does not promote, recommend or endorse the use of the ideas or products described in its publications. FARM SHOW Publishing, Inc., disclaims any and all responsibilities and liabilities in the event of personal injury, death, property damage or losses as the result of the use or application of any such ideas or products. Anyone applying or using such ideas or products does so at his, her or their own risk.

FARM SHOW Magazine respects the privacy of its subscribers, customers and readers. We don't knowingly sell, rent, loan, give away, or otherwise share the name, address or email of anyone who does business with us or communicates with us, if they have requested we not do so.
When you do business with us, we ask that you tell us if you do not want your name and mailing address included on our Special Offers list of people who would like to receive information from other related companies.
If you tell us you do not want to be part of the Special Offers list, we will flag your account so that it will not be used when compiling lists.
If you change your mind, you should contact us and request future inclusion on the list.
If you are on the Special Offers list, you may request removal at any time.
All requests for inclusion, removal or other matters relating to the Special Offers list should be emailed to the Circulation Department. You may also send your request to Circulation Manager, FARM SHOW Magazine, P.O. Box 1029, Lakeville, MN 55044.

Nov.-Dec., 2025

Dilldine sketched out several plans for the drone tender and, during construction, combined those ideas with a previous tender layout he developed for his ground sprayer.

Military Trailer Converted Into A Drone Tender

By Lorn Manthey, Contributing Editor

"When I decided to get into drone spraying, my first thought was getting a trailer set up to tender it, but every trailer I looked at was $70,000 or more," says Arkansas farmer Dalton Dilldine. "I quickly went to Plan B and decided to build one. I searched the internet and located an old 30-ft. military trailer for $3,000 that had $2,500 worth of new tires—a real bargain. In six weeks, we leveled the platform and built it into an efficient two-level tender with tanks, totes, piping and a large battery cabinet, all for less than $35,000."

Before working on the trailer, Dilldine sketched out several tender designs, each emphasizing efficiency. He searched the internet for ideas, talked extensively with a friend in Missouri, and drew on concepts from an earlier trailer he built for his ground sprayer.

"I wanted to haul and fill the drone efficiently, carry enough materials in one load to cover 550 acres, and pull it with a 379 Peterbilt."

People thought he was crazy to pull it with a semi tractor because he wouldn't be able to turn around or back into fields and would probably get stuck. That hasn't been the case at all.

"When people see me now, they want to take pictures, videos and know everything about how we built it," Dilldine says.

His tender has a 500-gal. hot mix tank, a 1,200-gal. water tank, a 40-gal. mixing station, and carries various application products. Liquid is moved through 2-in. hoses by two sets of pumps. One pulls fresh water into the hot mix tank, and another recirculates and fills his XAG P150 drone. Designed for speed and efficiency, the system uses a 2-hp 240-volt pump that can move 20 gal. in 10 seconds. He can fill the drone in 48 seconds, thanks to his drone's 1 1/2-in. fill pipe, which he upsized from the original 3/4-in. size.

Unlike some people whose drones land on the ground for refilling, Dilldine's drone lands and is transported on the tender's 32-ft. long upper deck.

"It's 12 ft. off the ground, so we're not kicking up dust," he says. "It's also close to four 5,000-watt chargers set in an air-conditioned 65-degree cabinet. That's especially important in the 100-degree days we often have in the summer."

He has four sets of batteries and always keeps two charged ones ready for when the drone lands. The charging power comes from a 30 kW diesel generator that Dilldine says is large enough to power two big houses.

"I need that much juice for quick recharges," he says.

It's very efficient, because in one season of work, it used only about half the fuel in its diesel tank.

During his first season of drone spraying, Dilldine covered about 5,000 acres, applying burndown and spraying corn, soybeans, rice and cotton. His operation totals 6,000 acres that he previously covered with a ground rig and aerial application.

"The drone took the place of an airplane and was definitely more efficient," he says. "With its 22-ft. wide swath running about 12-ft. off the ground, I can cover 55 acres an hour."

He uses an iPad to control the drone, which stores digital files for each field.

"I configure each field with GPS coordinates, start the drone in a corner of a field, then let it work. Before starting and during operation, I check wind velocity and direction, and what's growing in neighboring fields. It carries 19 gal. of material and sprays at 40 mph. Loaded, it weighs 280 lbs. and sounds like a helicopter when it's taking off. When its tank is empty, it returns to the tender, setting itself down, ready for refilling."

Dilldine says it took him nearly a year of planning, researching, talking to his buddy in Missouri, building, and setting up his equipment to get the system running smoothly.

"It's definitely a learning process, a lot of trial and error, avoiding obstacles like power lines and poles, and figuring things out. I know it's more efficient than a ground rig or a plane. I'm not damaging crops with sprayer wheels or streaking fields, and I can spray much sooner after a rain than with a wheel rig.

"If this tender-and-drone setup works just as well next year, I might consider building two more tenders, getting two more drones, and selling the ground rig. The biggest issue would be training new operators because it's a whole different job than running a wheel rig, working a game console, or flying a drone for fun."

Contact: FARM SHOW Followup, Dilldine Farms, 540 E. State Hwy. 239, Blytheville, Ark. 72315 (daltondilldinefarms@gmail.com).

Generator, tanks, totes and supplies are located on the main level. A steel staircase leads to the top level, where the drone is transported and lands during field operations.

Made-It-Myself Reach-And-Pull Grapple

Paul Volk burns a lot of wood to heat his house, and he needed help gathering it. His reach and pull grapple piles brush, loads blocks and cordwood, and hauls it to the wood yard for processing.

"I looked at several reach-and-pull grapples, but they all had one feature or another I didn't like, so I built my own," says Volk. "I made my first sample out of cardboard, and it seemed to work, so I made my next one from 18-ga. metal, and the dimensions appeared to be correct. Then I started fabricating individual pieces and welding them together."

With over 40 years of experience in welding and repairs alongside his farming, Volk had the skills he needed. When he needed help, he knew exactly where to find it.

"A local metal fabrication shop broke the bottom U for the tines and also the back plate," says Volk. "The back is just over 62 in. wide and 24 in. high. It's made from 1/4-in. sheet steel."

He purchased the adapter plate from the local Bobcat dealer. The 48-in., bolt-in tines came from Parts4Farm. He used drawn-over-mandrel (DOM) tubing bored out on the lathe for sockets.

"The DOM goes through the U and is welded on both sides with a 1/2-in. bolt through the socket and the tine," says Volk. "Initially, I used conventional tie rod cylinders with an 8-in. throw. I've since replaced them with grapple cylinders from Surplus Center with a 10-in. throw."

The grapple teeth are made from 1/2-in. thick AR400 steel. He sourced the plate for the teeth at the machine shop and had it laser-cut to the pattern he provided.

"The teeth are welded to 1/2-in. plate and have two U-bolts for each tooth," says Volk. "The brush guard is made from 2 by 1 by 11-gauge rectangular tube, covered by 1 1/2-in. #9 expanded metal.

"To my amazement, the grapple worked from the get-go. Other than changing some pin heights on the cylinder attaching points, I wouldn't change a thing."

Volk says the grapple gets a lot of use. It opens 62 in. to reach over and pull in large piles of brush.

"I tip the bucket forward and then close the grapple as I tip it back to pick up the brush," says Volk. "When loading blocks, the tines slip underneath, and the grapple comes down. It holds the blocks so I can lift them away on the tines rather than bending some linkage."

Volk says the grapple gets a lot of use. It opens 62 in. to reach over and pull in large piles of brush.

Contact: FARM SHOW Followup, Paul Volk, 54840 839th Rd., Battle Creek, Neb. 68715 (ph 402-675-1431; volkspec@volkracing.net).