



By Allan Heydorn

Symphony Screed, Electronic Controls Focus Attention on Mauldin 1750-C Paver

The challenge for Frederick Hand Paving was fairly typical of the work the small family-owned contractor performs: Pave a 4,500-sq.-ft., L-shaped residential driveway for a half-million dollar new home that fronts Chesapeake Bay in Maryland's Chesapeake Ranch Estates. A 160-ft.-long section from the two-car garage was 20 ft. wide, narrowing down to 13 ft. before it curved 166 ft., and 10 ft. wide around the front of the house and yard. And it included a steep uphill turnaround.

"We had no trouble pulling any of that with the Mauldin 1750-C," says Frederick "Mike" Hand, Frederick Hand Paving. "[The 1750-C gives us] more power to help push our trucks up the many hills that we have in this part of southern Maryland."

Martin Paving, a family operated paving company in Ephrata, PA, faced a challenge of its own, according to estimator Delmar Weaver: Pave a wearing surface on a 1,500-sq.-yd. barnyard and driveway on a local farm. The project required about 90 tons of PENNDOT Type ID-2 mix placed 1 in. thick. The longest pulls, according to foreman Gerald Hoover, were no more than 300 ft. long and 10 ft. wide, with many passes between 8 and 10 ft. wide and from 25 to 50 ft. long. Martin Paving handled the chopped up job without a problem, finishing the work in half a day and crediting the maneuverability of the 1750-C paver with a large part of their success.

"We looked at quite a few small pavers for our driveway crews that were not built that way before we made our final selection," says Leon Roy Martin, vice president, who with his brothers Jerold and Galen agreed

to start the business with their father Leon Martin in 1974. Today Martin Paving serves an area of about 50 miles from its headquarters, though according to Jerold Martin they have done work as far as 150 miles away.

"The majority of our work is with residential and small commercial projects," Jerold says. "Two of our crews do driveways and parking lots that may go up to 400 tons large. The other paving crew works primarily for private developers."

Redesigning for the high end

Wayne Calder, executive vice president, Calder Brothers, Greenville, SC, says the 1750-C is the company's high-end paver, which features numerous upgrades and uses the Symphony Screed.

"The original model 1750 had been on the market for years, but three years ago we redesigned the paver based on contractor comments and to upgrade the technology," Calder says.

He says the 1750-C features dual operator's stations, electronic instead

of hydraulic controls, an enclosed engine for quieter operation, and extension controls and handles that allow the operator to align extension height to the main screed and to adjust extensions to either flat or angled positions. Calder adds that the engine on the 1750-C was moved forward so its weight sits over the tracks.

He says the paver's Symphony Screed extends from 8 to 13 ft. and can be fully extended to 16 ft. It paves to a depth of 6 in. and features four propane burners on the main screed and an additional burner on each extension.

"The Symphony Screed weighs 4100 lbs., which is the heaviest in its class," Calder says, adding that most screeds on the market weigh about half that. Hand says the screed really has an impact on the finished work. He says the family started Frederick Hand Paving, Prince Frederick, MD, several years ago to supplement the family income, relying on a Mauldin power box paver without a conveyor system or any automatic controls.



"The 1750-C is the only mid-size paver on the market featuring a screed with highway class controls," says Wayne Calder, executive vice president of Calder Brothers, manufacturer of the Mauldin machine.

Mike and two sons, Walter and Joe, drive hot mix asphalt delivery trucks for Prince George Asphalt Co. in the morning while Mike's wife, Alice, and a third son, Chris, prepare their own paving jobs. The contractor subs out the initial subgrade work but performs final profiling with a skid steer loader when the job has been brought up to grade.

"That way we know that our mat is going to be put down on a proper surface to support it. Then when we have them ready for the asphalt, we call my husband and sons they then bring us the asphalt and help finish the job," says Alice, who does most of the compaction.

Hand says his crews work within a 40-mile radius from the office, the company's largest project being an 800-ton parking lot and mini-storage facility in Mechanicsville, MD. The largest driveway they've paved was 800 ft. long, roughly 7,000 sq. ft., and required about 125 tons of asphalt. He says the smallest job they would consider is a 3 to 5 ton turn-around in existing driveways.

"The new 1750-C's screed really is a symphony in steel in that it orchestrates a host of factors into laying an award-winning mat," Hand says. "That gives us a major advantage: It puts down a mat that we can be proud of with far less effort and handwork."

Some specs

Description: Mauldin 1750-C Super Paver hot mix asphalt paver with crawler track

Screed: Free-floating Symphony Screed paves 0-6 in. deep and features 4 main propane burners and two extension propane burners

Weight: 15,700 lbs.

Paving width: 8 to 13 ft. standard, 16 ft. with extensions

Material delivery: Two 9-in.-diameter, fix-mounted augers and two extendable augers

Hopper: 7.5 ton capacity

Speed: Paving speed, 0 to 140 fpm; travel speed, 0 to 290 fpm

"It allows us to pave out seamlessly to any width," Hand says. "The quality of the mat is, after all, what most people see when we are finished with a job. In many cases the quality of a mat is also what gets us paid faster and generates those all-important word-of-mouth referrals."

Martin Paving's philosophy has been to combine skilled and experienced paving crews with top-of-the-line paving equipment for a particular application. It is company doctrine that there are no unnecessary members on a Martin Asphalt crew. A typical small project paving crew consists of a paver operator/foreman, another screedman, a laborer, and a roller operator. Company truck drivers understand their responsibility to assist the paving crew whenever hand

work help is needed. On larger parking lots the extra truckers bringing additional asphalt make up the supplemental men needed to service the paving operation.

Martin continually upgrades its pavers to take advantage of every opportunity to lessen the amount of handwork a project requires.

"We don't run our machines to the point where we need to do an extensive overhaul on them. Our goal is to move them on and purchase a new paver before that time. That's false economy to keep it a long time. We plan on an eight-year lifespan for small pavers. That's about five years as a frontline machine and three to four years of occasional use as a back-up paver. Then it's replacement time," Jerold says.

Features to reduce labor

Both contractors say the paver's conveyor system is equally important, enabling the crew to go up and down local hills without having to stop and shovel asphalt to the augers.

"Almost every major asphalt contractor today has the power extendable screed. Not all that many appear to get the power-extendable augers, too," Leon Martin says. "We find this feature on our new Mauldin 1750-C gives us a more uniform mat while again reducing the handwork for the crew, especially when we have to go very wide. The asphalt comes out to the end quick and evenly."



Contractors say the 1750-C helps reduce the amount of handwork required on each job.

Calder says the unit features two sets of 9-in.-diameter augers. The first set is mounted in a fixed position in the center of the screed. The second set is mounted to the extensions, enabling the paver to feed material smoothly to a 16-ft. width.

"The extra set of augers is a big selling point for contractors because it enables them to perform seamless paving to 16 ft. wide," he says. "And the slope handle allows the operator to slope the extensions to improve runoff at the pavement edge."

Hand says the material delivery system is especially beneficial when paving downhill, where their old power box machine would be level and not dump hot mix to the screed very well.

"Going into narrow hilly driveways is much easier as well," Hand says. "We don't have as much spillage in front of the machine now. Once the truck stops dumping we can pull the asphalt to the augers and, as a result, lower the amount in the hopper so it doesn't overflow."

Wayne Calder says one of the most popular contractor features on the paver seems to be a "pause" toggle switch that makes it easier for contractors to pave a straight mat, and Mike Hand says the "pause" feature has been a real help to his crews.

"The pause feature locks the machine in place. It stops the machine from traveling backward or rolling forward," Hand says. "It stops the screed vibration immediately so no mat marks or striations are made. Then toggle the pause switch once again and the machine resumes where it left off. It remembers what it was doing. That's nice when something comes up quickly and the machine has to stop right then. Get the situation fixed and just hit the switch and resume the paving operation."

Hand says he also appreciates the number of burners on the screed.

"There are four burners on the main screed and one burner on each extension. This gives us a more evenly heated screed with no warping," Hand says. "The 1750-C operation



Martin Paving replaces its pavers every eight years — after five years on the front line and three years as a backup machine.

manual advises you not to heat the screed for more than 10 minutes and they're right. It's that quick."

"One thing I especially liked about the 1750-C is that it is electric over hydraulic as far as its operating systems," says Leon R. Martin.

Calder says that when the company redesigned the paver it made a special effort to reduce the reliance on hydraulics. He says engineers managed to eliminate 42 hydraulic connections in the redesign significantly reducing the number of potential leak points on the paver.

"We also enclosed the engine compartment completely, so if there does happen to be an hydraulic leak the hydraulic fluid will remain in the compartment and doesn't spill on the pavement," Calder says.

Worthwhile for the contractors

Jerold Martin cautions that the new pavers must be maintained more closely than older machines with less complex technologies.

"Proper lubrication is also critical. Our operators are responsible to the oil changing, greasing, and washing of their equipment. If you use them and haven't maintained them well you will quickly find them to fail. The investment of time and money, for us, has proven to be well worth it.

"Once our crews learn what they are doing with the new technologies, they would be lost without them. Things have changed considerably since I started in this business as to what the new pavers can do. The name of the game today is to avoid as much of the physical work in paving as possible and to take advantage of the paver's capabilities," says Jerold Martin. ■

Contractors say the the paver's conveyor and auger system ease paving up and down hills.

