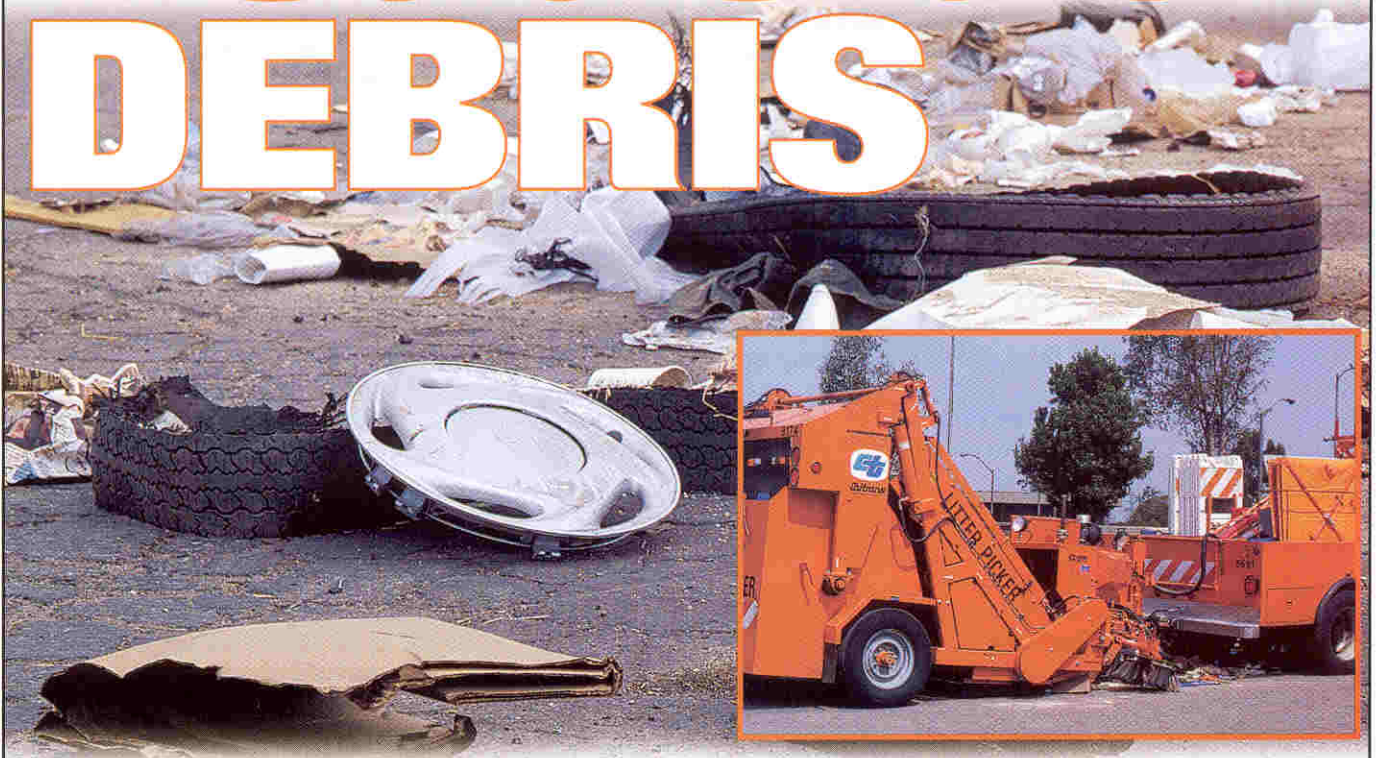


VERSATILE MACHINE

Cleans Roadside DEBRIS



California's Department of Transportation (Caltrans) was facing a growing problem. How could it get rid of an annual litter buildup of 170,000 cu yd from its 15,000 miles of state highway—and, at the same time, improve the safety of the workers who had to do the job?

The task was arduous and dangerous, involving back-breaking, labor-intensive work. The job was enormous, and so was the cost. About a quarter million individual pieces of debris had to be picked up each year at a cost of nearly \$1,000 per mile, more than \$16 million annually.

By 1997, Caltrans was testing various equipment that makers claimed could do the job, but these machines were not proving out. Most could not pick up the larger trash, and many were too difficult to operate even with extensive operator training.

Some were too expensive and unreliable. They required too much maintenance. They broke down.

TESTING THE EQUIPMENT

Caltrans asked Bill Haaker, president of Haaker Equipment in Pomona, whether he knew of anything that could solve its problem. Haaker's firm is a dealer for products made by H. Barber & Sons, a company located 3,000 miles away in Connecticut's Naugatuck Valley. Haaker arranged a demonstration of a Litter Picker (model LP200).

For the demo, the state chose an extension of Highway 210 in San Dimas. A section of that road was closed due to construction. Caltrans brought in a dump truck loaded with two shifts' worth of debris—tires, boards, "rubber alligators" (large truck tire retread pieces), trash bags, milk cartons, mufflers, hubcaps, assorted pieces of metal and plastic, and five-gallon buckets. All of it had been hand picked by workers on the roadways. Workers spread the litter over 500 to 600 ft and watched Barber's Litter Picker pick it up—all of it—in no time flat.

Normal highway litter includes such things as hubcaps and rubber tire "alligators." Inset: Attached to a Caltrans towing vehicle, the Barber LP200 Litter Picker begins its work.

ROADSIDE MAINTENANCE



Left: Barber LP200 Litter Picker safely deposits highway litter in its four-cu yd hopper until dumping. Right: With a dump height of eight ft, the Litter Picker can empty its load into a dump truck or a roadside dumpster.

The demo convinced Caltrans to take a closer look at Barber's machine. The agency worked out a one-year lease so it could compare the machine to other equipment it was leasing at the same time. Caltrans was impressed with the equipment's performance, the lease was renewed for a second year, and Caltrans started the paperwork that ended with the purchase of a dozen LP200s from Haaker's firm in 1999.

EQUIPMENT PERFORMANCE

The Litter Picker gathers, hoists, collects, and dumps litter and debris at a top rate of 18 mph. Caltrans District 7 Highway Maintenance Supervisor Norris Lewis says he runs them at 15 mph "... so the sweepers can keep up with them." The agency generally uses the machine in tandem with a sweeper, although Lewis says it cleans the roadways so thoroughly that, if a sweeper is not available, the LP200 can be used alone.

The machine can be towed by a truck as small as a one-ton pickup at highway speeds up to 55 mph. It cleans an area of pavement eight ft, six in. wide, and is operated by a single worker from the inside of the towing vehicle. It is driven by a 21-hp, water-cooled diesel engine that powers the gutter brushes and a bar flight conveyor fitted with alloy steel tines. The tines lift the debris from the pavement; the conveyor elevates it and dumps it into a four-cu yd hopper that can be raised to eight ft for dumping.

The basic technology for the Barber Litter Picker was developed about

34 years ago when the company's founder designed a beach cleaner called the Surf Rake. Haaker says, "This LP 200 was developed from that original beach cleaner. It's a prime example of a manufacturer modifying an existing technology and hitting the bulls-eye in an entirely new market."

About a quarter million individual pieces of debris had to be picked up each year at a cost of nearly \$1,000 per mile, more than \$16 million annually.

Supervisor Lewis says the machines pick up 95 percent of the debris. "It can go 20 or 30 miles without having to be dumped." He says the LP200 "speeds up the operation, eliminates down time and wasted time waiting for workers who are running around trying to pick things up."

SAFETY CONSIDERATIONS

Both Lewis and Donald Sizemore, Caltrans District 7 superintendent, emphasize that the primary factor in the choice and use of the LP200 is that it keeps workers off the road and away from speeding cars. Company official James Barber said Caltrans "asked us for a number of changes to bring the LP200 up to their safety code." California is a leader in safety regulations for highway equipment, Barber pointed out.

The safety modifications request-

ed by Caltrans included some redesign of the safety lighting, larger tow chains, and installation of a bracket to accommodate a safety arrow sign board. The agency also asked Barber to enclose the control console to prevent vandalism and to redesign the pintel hitch to enable more kinds of tow trucks to pull the LP200.

"Those changes seem minor, but they helped us make the LP200 a more marketable piece of equipment," Barber says. The newly improved machines were delivered by the end of 1999, and they have been running without incident since.

The company has sold LP200s to the states of Nevada, Oregon, and New Mexico. A modified version of the machine, the LP1, has been sold to the states of North Carolina and Alabama, to a county in Florida, and to the Port Authority of New York and New Jersey. The New York Port Authority uses the LP1 at Kennedy International airport to remove debris from runways.

Sizemore calls the LP200 "a wonderful machine." He adds, "We were looking for the least worker exposure to traffic that we could possibly have. The LP200s gave us this economically and efficiently. They are the best solution to safety we've found."

Supervisor Lewis has the last word on the Barber LP200. "They're easy to tow and handle," he says. "Takes about a half day to train someone to use one. I love 'em, and my crews love 'em. Can't tell you more than that." Caltrans officials are requesting funding to purchase more Litter Pickers in the next California budget. **PW**