

# Ending the Paper Chase

Ray Plumbing brings its portable restroom business squarely into the new century with hand-held inventory scanning technology

By Mary Shafer

*"Our guys know they're pioneering a real innovation in our industry. They like their PDA holsters and have taken great care of them. Of four units used by the firm all through the summer of 2001, only one suffered any damage: a screen broke when a technician sat on it."*

Danny Ray

Danny Ray hates paperwork. Seeing a need to make the administrative end of his portable sanitation business more efficient, he sought to eliminate the paperwork that dogged his crews and clerical staff.

Today, Danny's company, Ray Plumbing of Ellsworth, Maine, uses hand-held scanning technology to track inventory and service for his fleet of more than 400 portable restrooms.

After just one year in service, the ScanMan PottieScan™ software, developed by Ray Plumbing and DAT Associates, has dramatically improved inventory accuracy. It has also reduced record-keeping errors and provided better documentation that technicians have performed scheduled service in the field. When Danny launched his technology venture, he had the confidence of a solid company history behind him. His father,

George Ray, founded Ray Plumbing in 1957 and incorporated it in 1961. George's wife, Betty, did the bookkeeping, and by the 1980s, three sons, two sons-in-law and a daughter-in-law were working in the family business, providing high quality plumbing, heating and air conditioning services.

Danny, his brother George, Jr., and brother-in-law Earle Archer bought the company in 1998. With a philosophy that its customers are the sole reason for its existence, Ray Plumbing has grown steadily.

## Opening new territory

Along the way, Ray Plumbing diversified. The company began offering portable sanitation units in the mid-1980s, after George Sr. arranged service for an Ellsworth Chamber of Commerce event.

The company now owns 416 units: 200 heavy-duty construction restrooms, 182 weekend/special event units, six units accessible for people with disabilities, and 18 upscale wedding service units. They service this stock with a fleet of three pumper trucks, one portable pumper and a one-ton rack body truck. Three full-time employees run the year-round service routes; two part-timers help with special events in summer.

The portable toilet division of Ray Plumbing did well enough to outgrow its original location. The fleet recently moved into a new 2,700-square-foot, three-bay garage next to the plumbing and heating business offices. It's easy to see why Danny wanted a less labor- and paper-intensive tracking system.

"We wanted to keep better inventory control," he explains. He needed to

know how many units were available to rent at any given time and how long they would be tied up in service. Danny was also concerned about human errors introduced during manual monitoring. In filling out daily work orders, technicians often made mistakes in entering numbers used for tracking.

"During peak season," Danny remembers, "We were often checking inventory levels two to three times a day, and tying up people each time."



Members of the Ray Plumbing team: from left, co-owner/manager Earle Archer, lead service technician Craig Clement, service technician Garrett Bowden, service technician John Smith, and service manager Wayne Clark (also in charge of dispatch and accounts receivable).

Danny also believed better unit service records would minimize disputes that arose when customers complained that their units were not being serviced as often as technicians claimed.

## Brave new world

Danny knew digital barcode technology was the answer to minimizing data input errors, and he knew he needed software that would track both unit inventory and service maintenance. The hardware would have to be portable and rugged enough to withstand daily use without failing.

It didn't seem too tall an order, until



Craig Clement of Ray Plumbing scans a portable restroom before servicing (note the barcode label in the lower right of the logo). Electronic inventory and record keeping has helped Ray Plumbing greatly improve efficiency and reduce service errors.

## P R O F I L E

### Ray Plumbing, Inc., Ellsworth, Maine

INCORPORATED:	1957
ANNUAL SALES:	\$2.5 Million
EMPLOYEES:	22
SERVICES:	Portable toilet rentals and service; residential and commercial plumbing, heating, air conditioning
MARKET AREA:	75-mile radius from Ellsworth, Maine
WEB SITE:	www.rayplumbing.com

# A Day in the Life

ScanMan PottieScan software uses simple computer technology that easily communicates between desktop systems in the office and personal digital assistants (PDAs) that technicians carry into the field. In brief, here is how the system works:

When a customer call comes in, the Ray Plumbing representative enters customer information into the desktop database and requested unit delivery, pickup or service is scheduled. At the start of the day, the technician uploads the data from the computer to the PDA. The proper number of units are removed from inventory and loaded on the truck.

At each stop, the units are scanned as they are offloaded from the truck. Units are also scanned after servicing. Units returned to the yard are scanned as they go back into waiting inventory. With the route completed, the technician downloads all the updated information from the PDA to the desktop computer, bringing the main database into real-time accuracy.

Features of the software include:

- Reliable proof of service — time and date stamp on each transaction.
- Scheduling of rentals well in advance to ensure that units will be available.
- Inventory forecasting.
- Pick-up prompt, telling which units are to be picked up, and when, so that arrangements can be confirmed with the customer.
- Delivery and pick-up records — what was delivered or picked up where.
- Repair logs — what repairs are needed or have been made.
- Records of extra cleanings and the reasons for them.

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**Danny Ray**

he began researching what was available. After several frustrating months, Danny realized that an easy-to-use, inexpensive system simply didn't yet exist.

“We had looked at traditional barcode scanners, but couldn't find any that cost less than \$1,500, and software that might work was another thousand or two, plus a charge for each additional scanner,” Danny says. “I was thinking we needed a total of five or six scanners, so that kind of cost just wasn't in our budget.”

Meanwhile, he had purchased a Handspring Visor™ personal digital assistant (PDA) to keep track of appointments, and he noticed in the manufacturer's

brochure an accessory for barcode scanning. Through Handspring's web site, Danny located Al Fortuner, president of DAT Associates of Mertztown, Pa. (www.yourdat.com). Fortuner agreed to develop a new application specific to the portable restroom business.

The result is ScanMan PottieScan software, a desktop computer program that also runs on technicians' PDAs. The system is inexpensive and simple to use — there is next to no learning curve.

### Tested in the field

After initial input into the program, Ray Plumbing has spent the last



**Craig Clement services a portable restroom with Ray Plumbing's 2000 Ford 550 Super Duty with Coleman PSB950 body (stainless steel tank, fiberglass body, 600-gallon waste tank, 270-gallon heated wash water tank, 80-gallon heated rinse water capacity).**



**Ray Plumbing prides itself on prompt, professional service, as demonstrated by lead service technician Craig Clement.**

year testing the PottieScan system. Actual fieldtesting began in May 2001. The main function of the software was to create a customer database that would function as the backbone of the inventory and service record keeping process. The system is also designed to reduce human error so that inventory and service records are as accurate as possible.

Under Ray Plumbing's previous inventory/delivery process, all information and instructions were written on a delivery slip. There was no accurate central database to refer to or check against. Numbers would get transposed, dropped entirely or read incorrectly. The result was inaccurate records of which units got delivered where and when, which units were still on customer sites or in the yard, and which units needed repair in the yard or service in the field.

Ray Plumbing was able to use PottieScan to perform a true, year-end inventory for all of 2001. The results included just four delivery errors — all traced to four isolated deliveries in which the software was not used.

Another goal was to make sure the computerized records were kept up to date and would be available to everyone who needed them. With PottieScan, records can be sorted using several parameters, such as date, customer name or unit number — a useful tool for general inventory overviews. This allows dispatchers to spread scheduled maintenance work more efficiently among available crews, eliminating the false urgencies created by a misleading picture of the actual workload.

### Enthusiastic reception

As might be expected, the software still needs some upgrading. For example, it is now being updated to give technicians reminder alerts to:

- Take units out of storage and prep

for upcoming delivery.

- Re-schedule certain unit fleets for recurring events.
- Track incoming calls.
- Log repair needs that exceed what can be performed in the field.

The PottieScan system experienced no resistance from Ray Plumbing technicians. In fact, Danny reports that technicians consider it a point of pride to display their “digital hipness” to their customers and peers alike.

“Our guys know they're pioneering a real innovation in our industry,” he says. “They like their PDA holsters and have taken great care of them. Of four units used by the firm all through the summer of 2001, only one suffered any damage: a screen broke when a technician sat on it.”

### Proof of service

Ray techs have offered ideas for future versions of the software. According to Danny, the best part of using the program from the technicians' point of view is that the pre- and post-delivery scanning effectively logs the call with time-stamping that cannot be forged.

This eliminates the chance that customers will accuse them of failing to service units on schedule, when the real reason units fill up rapidly is that the site has ordered too few units. As soon as technicians began using PottieScan, Ray Plumbing noticed a marked decrease in these kinds of complaints, and the attendant frustration.

With barcode scanning technology, the future looks bright, not just for Ray Plumbing but for other operators who can benefit from Danny's example and his pioneering spirit. Advances in technology can help operators gain better control of their operations and ensure the health and prosperity of their companies. ■