

Field Evaluation of Electronic Fee-Collection Machines for Forest Service Recreation Sites



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Introduction

Fees have been collected at USDA Forest Service recreation sites and parking areas for many years. Traditionally, the Forest Service has relied on staffed entrance stations or self-service fee depositories (fee tubes or “iron rangers”). More recently, daily and seasonal passes or permits have become popular methods for fee collection.

In 1996, Congress authorized the Forest Service to initiate the Recreation Fee Demonstration Program (Figure 1). The aim of the program is to collect recreation fees for the use of a specific facility, to experiment with different fee-collection systems, and to evaluate public acceptance of new fees. With the Fee Demo Program, up to 95 percent of the fees remain with the field unit for site maintenance and improvement, rather than being deposited in the U.S. Treasury’s general account. Although acceptance has been varied, the link between fees paid and improvements made at a site has helped sell the Fee Demo Program in some parts of the country.

The need to collect more revenue and sometimes increase fees at recreation facilities has prompted Forest Service managers to look beyond conventional collection techniques, especially in heavily used areas. The costs of collecting fees, concerns about the safety of employees who handle money, vandalism, and the need for detailed record keeping are some reasons for considering different methods.

To help those considering investing in electronic collection equipment, the Missoula Technology and Development Center (MTDC) was asked to document onsite use of fee-collection machines.

MTDC looked at two electronic fee-collection machines used by the Forest Service, the Lexis 901 Pay Station and the VenTek Pay Station. This report includes information about the machines and installations at Vancouver’s Stanley Park, the Cave Creek and Tonto Basin Ranger Districts of the Tonto National Forest, and the Mt. Baker Ranger District of the Mt. Baker-Snoqualmie National Forest. Contact information and machine specifications can be found in the appendixes at the end of this report.

The fee-collection equipment hasn’t been used long enough for a thorough assessment of its strengths and weaknesses. MTDC made field visits to equipment installation sites and reviewed specifications provided by manufacturers to evaluate the Lexis 901 Pay Station and the Ventek Pay Station. MTDC has not tested the equipment.

Another electronic fee-collection machine, the QBS Pay Station, has recently come to our attention. It is distributed by Dominion Self-Park Systems, Ltd. We didn’t have a chance to review the machine under field conditions. However, this report includes technical specifications and contact information for the Dominion equipment.

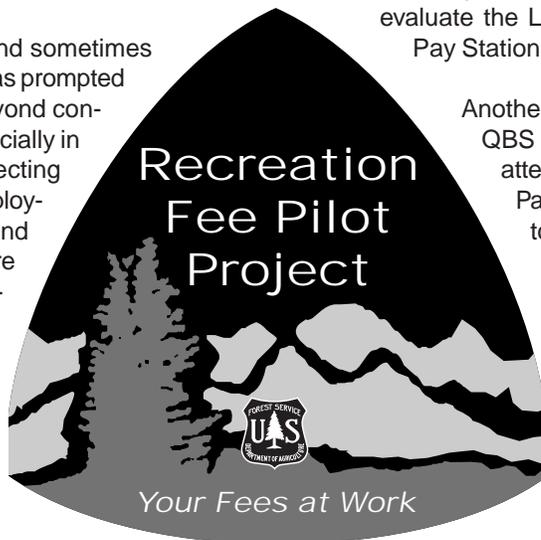


Figure 1—The Fee Demonstration Program was authorized by Congress in 1996 as a test in which fees generated at a site could remain there rather than being deposited in the U.S. Treasury.



Is Electronic Fee Collection Right For You?

Before deciding on an electronic fee-collection system, recreation managers need to carefully consider these factors.

Amount of Revenue to be Generated

Procuring, installing, and servicing electronic fee-collection machines can be expensive. Most successful electronic fee-collection systems generate revenues of \$16,000 to \$300,000 annually.

Risk of Vandalism

The machines are vandal resistant but not vandal proof. They are probably a poor choice in remote areas known for vandalism. In such situations machines can be leased with a service clause included in the contract.

Availability of Power

All of these machines require power. The initial cost of power lines and maintenance may be prohibitive at remote sites. Batteries can power some systems, and are used as a backup power source in other systems. Expect additional costs for a solar-powered (photovoltaic) option.

Climate

The capabilities of electronic fee-collection machines may vary as the temperature and humidity fluctuate. Building and maintaining shelters for the machines adds to their cost. Investigate the temperature operating range and the effect of moisture on any electronic system before purchasing it.

Fee-Collection Plan

Electronic fee-collection machines may be the best option at sites that receive very heavy use or at sites where the machines can supplement staffed fee-collection booths during the busiest periods and replace paid attendants during slower times. They may also be the best option when the detailed records provided by the machines can reduce fraud and theft, or when a package of service options, signs, collection, and marketing can be provided by a single vendor.

Operating Personnel

Some machines require substantial computer knowledge to program them. Does your staff have the needed skills?

Finally, an electronic fee-collection system makes sense when it can provide better customer service than other alternatives.

Lexis 901 Pay Stations

Lexis Systems, Inc., is a member of the Universal Group of Companies (Universal Parking) headquartered in Vancouver, British Columbia, Canada. When Universal Parking designed an electronic fee-collection machine, it established the Lexis Systems' manufacturing division. Prototypes were field tested for 2 years. Lexis Pay Stations are currently used in Federal, State, county, and city parks, campgrounds and boat launches, and at universities, hospitals, and hotels.

Features

The Lexis 901 Pay Station accepts all denominations of coins and bills and provides change. It also accepts credit and debit cards. The Lexis 901 Pay Station has many security features, including the ability to generate an audit report. Every payment transaction is recorded in a Microsoft Access data base, allowing for customized reports. Custom reports can include time of purchase, ticket value, and additional information. Data are retrieved using a notebook or palmtop computer. Other security features include a stainless-steel crossbar to frustrate potential thieves and a double-key system. All cash is fully secured in a locked cash bag inside a locked vault. Even fee-collection personnel have no direct access to the money.

The casing of the latest version of the Lexis 901 Pay Station is stainless steel, reducing the likelihood that humidity or salty ocean air might corrode it. The unit is firmly sealed, minimizing effects of sand and dust on internal components.

Lexis Systems is developing a wireless communications feature to allow remote communications and data retrieval by cellular telephone or satellite links. An alarm system will automatically report tampering, the need for more change, and the need to empty the cash bag. The wireless communications feature will reduce the labor needed to monitor the machines. This labor-saving feature may lower the amount of revenue needed to justify installing a machine at an economically marginal site.

Procurement Alternatives

The most comprehensive option for purchasing Lexis 901 Pay Stations is a turnkey collection package that includes machines, installation, signs, maintenance, fee collection, and compliance enforcement. Typically, Universal Parking receives a percentage of the revenues collected from the machines as part of the contract. According to company representative John Hollo, about \$300,000 in annual gross revenues is needed to justify a turnkey operation. Contract bid prices reflect the number of machines, maintenance costs, and the projected amount of use.

Lexis Pay Stations may also be purchased, leased, or rented. Customized service is based on specific needs and requirements of the site. Contact Universal Parking for more information.

Installations at Vancouver's Stanley Park

In June 1995, Universal Parking was awarded the contract to install 65 electronic fee-collection machines and to provide fee-collection and compliance enforcement services at Stanley Park in Vancouver, BC (Figure 2). This contract is one of Canada's largest single-area parking management contracts.



Figure 2—Signs tower above the Lexis 901 Pay Station at the entrance to the zoo in Stanley Park at Vancouver, BC.

According to the company, compliance is over 90 percent. Most of the machines are located in secluded areas of the park and vandalism is a major problem. More than 200 transients live in over 1,000 acres of parkland. Police patrols end at sunset. Improvements to the Lexis Pay Stations since 1995 have strengthened the machines and reduced the damage caused by vandalism and break-in attempts. These improvements are reflected in the current 901 model.

Installations at the Mt. Baker Ranger District

The Glacier Public Service Center and Heather Meadows Visitor Center in the Mt. Baker-Snoqualmie National Forest each have a Lexis 901 Pay Station. In July 1999, I visited the Glacier Public Service Center with Christina Martin, Fee-Collection Coordinator for the Mt. Baker Ranger District, and Information Specialist, Debra Paul. Both sites are within a 2-hour drive of the Seattle metropolitan area. Heather Meadows is on a National Scenic Byway that accesses Mt. Baker. During the summer, Heather Meadows Visitor Center is open from 10 a.m. to 4 p.m., 7 days a week. Fee Demo

revenues fund 12 seasonal and volunteer staff members at the Center. Heather Meadows was still snowed in, so I did not visit the Center.

In the fall of 1997, two Lexis 901 Pay Stations were purchased for \$17,000 each. Tastefully incorporating a fee-collection machine into the historic Glacier Public Service Center (Figure 3) was a challenge. Luckily an existing sign frame was a perfect fit for one machine. This machine is powered by standard 120-volt AC power. It allows visitors to purchase the required passes 24 hours a day. Passes can also be obtained inside the converted Ranger Station, listed on the National Register of Historic Places.

Forest Service employees maintain the fee-collection machines at the Glacier Public Service Center and the Heather Meadows Visitor Center. They also provide compliance enforcement.

Universal Parking provided free initial training. Two District employees traveled to company headquarters in Vancouver, BC, to learn how to clean the machines. Each machine's internal components must be cleaned with cotton swabs and alcohol at the beginning of the visitor season. The machine at the Heather Meadows Visitor Center operates on a nonrechargeable lithium battery and two rechargeable automobile batteries. The charge on the automobile batteries



Figure 3—A Lexis 901 Pay Station is installed at an information board at the historic Glacier Public Service Center in the Mt. Baker-Snoqualmie National Forest.

is indicated by a monitoring light, but the lithium battery does not have a monitoring light. A low lithium battery has caused the other batteries to work inefficiently in the past and important accounting information was lost. The company now advises changing the lithium battery once a year. PC Charge, a program developed by Go Software, is used to process credit cards. This credit card process works in conjunction with the Lexis software, which stores all of the payment information until it is downloaded. When there have been problems downloading data from the machines over a modem, Lexis computer programmer, Tina Rowe, has helped. Computer knowledge is necessary to operate the system. A service call for the two machines costs about \$170. In 1999, Universal Parking installed new chips in the control boxes to make the units year 2000 compliant, performed general maintenance, and cleaned the machines.

There have been no significant security or compliance problems. Money has been collected from once a day to once every 5 days for both machines, depending on the need to process credit card payments by hand. The machines have double-lock and double-key systems.

Newer versions of the Lexis 901 Pay Station have eliminated some earlier problems. The first-generation machines used at the Mt. Baker Ranger District have sometimes been difficult to keep in operation.

The Mt. Baker staff has found electronic fee machines to be helpful. The machines can collect fees when no employees are around, accept credit cards for payment, and provide an alternative to visitors waiting in line at entry booths. There have been disadvantages, particularly when electronic fee machines have been used alone. Areas around the machines can become congested. If one visitor decides not to wait to use the machines, other visitors will follow that trend. Also, some visitors feel overwhelmed by machines and have a difficult time when employees are not available to assist them.

Installations on the Tonto National Forest

The Salt and Verde River Complex of the Tonto National Forest includes eight developed recreation areas on the Cave Creek, Mesa, and Tonto Basin Ranger Districts. Within these areas, 50 recreation sites are included in the Fee Demo Program. The reservoirs and rivers are in a Sonoran desert setting and provide recreation opportunities for 3

million people who live within a 1-hour drive of the complex. More than 8 million people visit the Forest annually.

Contract Features

As part of a large 1998 Southwestern Region contract with Universal Parking, 38 fee-collection sites were identified for Lexis 901 Pay Stations. Additional needs included concrete pads, ramadas (shaded picnic pavilions), and signs.

A new contract was awarded to Universal Parking in 1999 after the company successfully bid to place machines on three Ranger Districts. Universal Parking receives 17.5 percent of the predicted gross annual revenue and 50 to 75 percent of any increase in predicted gross annual revenue (to a certain level) through the end of the contract period, September 30, 2001.

The Tonto Basin and Mesa Ranger Districts originally planned to have the contractor implement the failure-to-pay option of the contract. This option would have allowed the contractor, instead of the Forest Service, to issue a failure-to-pay notice and charge a penalty fee to visitors who did not pay the required parking fee. After many weeks of discussion and negotiations, the Forest Service decided not to implement this option, due to internal concerns about personnel outside the agency being responsible for compliance.

Cave Creek Ranger District Site Visit

Fee Demo sites on the Cave Creek Ranger District include the Horseshoe Lake, Bartlett Lake, and Needle Rock Recreation Areas. In 1998 when the Cave Creek Ranger District switched from fee tubes to Lexis 901 Pay Stations, annual gross revenue increased from \$350,000 to \$700,000. During June 1999, I visited several of these sites.

The Horseshoe Lake Recreation Area was the first site Fee Demo Coordinator, Nancy Myers, and I visited. A bright yellow sign 14 miles from the site announced that **All Areas Bartlett Lake** required a parking fee (Figure 4). Two additional signs alerted visitors to the required payment for parking. All signs are the responsibility of Universal Parking as part of the contract. Specific contract requirements, including Forest Service approval of prototype signs, are

Lexis 901 Pay Stations

one way to ensure overall sign quality, and to avoid confusing wording, gaudy colors, flimsy supports, or improper placement. The road is paved to the Horseshoe Lake Recreation Area fee machine and then graveled for the next 10 miles to the site. The machine is a drive-up version, although it cannot be reached easily through a vehicle window (Figure 5).

from Fee Demo funds. Other Fee Demo fund improvements at the three recreation areas are contract refuse collection service, cleaner rest rooms, new picnic tables and grills, litter pickup, graffiti removal, replacement of shot-up signs, and other vandalism-related repairs.



Figure 4—Universal Parking furnished signs for the Cave Creek Ranger District of the Tonto National Forest. This sign, 14 miles from the recreation site, alerts visitors to the parking fees.

Vandalism to this machine has been a problem. Vandals have used a blowtorch to steal money, have shot the bill receiver, and have pushed worms into the coin entry. When the machine is disabled, a sign tells visitors that the machine is temporarily out of order and that they should pay on their way out. Universal Parking employees are stationed at Bartlett Lake Vista on the weekends and holidays.

The most serious problems have been verbal abuse and nonpayment. More serious problems (such as physical attacks) have not occurred. Vehicles found without passes on the dash receive a warning or a \$50 citation. Because the Needle Rock Recreation Area has been associated with gang activity, Law Enforcement Officer, Bob Shields, also covers noncompliance matters. Part of his salary is paid



Figure 5—A drive-up model of the Lexis 901 Pay Station is 10 miles from the Horseshoe Lake Recreation Area in the Tonto National Forest. This machine is set back from the curb, forcing motorists to step outside their vehicles to pay the fee.

Bartlett Lake is the most popular of the three District sites. A drive-up version of the machine is located on a large covered median. Although it can be reached from a vehicle, a first-time customer needs to get out to read the operating instructions, some of which are on the back of the machine. Because customers do not tend to read signs, the fewer signs the better. Any signs must be easy to understand. Multilingual signs are available at this site.

Originally, the daily fee covered a 30-hour period from 12:01 a.m. to 6:00 a.m. the following day. The additional 6 hours (12:00 a.m. to 6:00 a.m.) were added to accommodate overnight anglers. The 30-hour period confused visitors. Customer consensus was that a daily fee for 24 hours from the time of purchase would be easier to understand and improve compliance. The Lexis 901 Pay Station was reprogrammed to print the recorded time of purchase on the ticket, creating a 24-hour pass.

I accompanied Nancy Myers to the Needle Rock Recreation Area at the end of the day. Several Forest visitors made abusive comments as they drove by without purchasing passes. The complaints may have been in response to the fee-collection machines, her uniformed presence, or both.

Some changes have already been made to improve the Lexis 901 Pay Stations. A crossbar was added to prevent vandals from opening fee machines illegally (Figure 7). Another improvement is a larger display screen that is easier to read. Tina Terrell said that new informational signs with large lettering would be placed next to the machine. Although the upgraded machines were scheduled to be operational by Memorial Day weekend, they were not operational until the first week of August 1999. This delay was due to installation problems and extra time needed to acquire customized signs.

Tonto Basin Ranger District Site Visit

Recreation Planner, Dave Killebrew, and District Ranger, Tina Terrell, were my hosts on the Tonto Basin Ranger District. The District's Fee Demo sites generated over \$500,000 in 1998. The District Interpretive Specialist calls local radio stations on Saturday morning to let the public know where space is available for recreation. The Tonto Basin Ranger District has 22 recreation sites; five are free.

The Burnt Corral Recreation Area is on Apache Lake. Campsites close to the water and natural shade make it the favorite campground on the District. With 79 campsites, this location was a logical choice for a fee-collection machine.

The Cholla Recreation Area has one of the largest solar-powered campgrounds in the United States. The campground has received a Department of Energy award and attention in several magazines, including *Solar Today*. Fee Demo funds pay to train employees who operate the equipment and maintain the facility (Figure 6).



Figure 7—A stainless steel crossbar may help prevent thieves from illegally breaking into Lexis 901 Pay Stations.



Figure 6—Universal Parking employees install a Lexis 901 Pay Station next to information boards at the Cholla Recreation Area in the Tonto National Forest.