



Off Street Car Park Fee Collection Design Consideration & Equipment Options

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Introduction

This literature provides guidance on the Car Park Fee Collection options and the car park design needed to optimise Revenue Collection and customer satisfaction.

The brochure is divided into sections;

- **CAR PARK CONTROL OBJECTIVES**
- **FIXED FEE DESIGN CONSIDERATIONS**
- **PAY ON FOOT SYSTEM DESIGN CONSIDERATIONS**
- **FURTHER LITERATURE**

CAR PARK CONTROL OBJECTIVES

There are usually two main objectives, **Profit Generation** and **Car Park Control**, with systems blending aspects of each depending on circumstances. Obtaining these objectives can be supported by two main system design types:-

Fixed Entry Price = Lower Installation Cost

Length of Stay - Variable Fee Collection = Maximising Profit Return

The size and usage of the car park dictates the type of option that is financially or logistically viable.

Special car park requirements are satisfied by a range of specialist systems.

Fixed Price Entry

Historically this has been by having a coin entry payment to control a car park entry boom gate. The exit is usually a boom gate operated automatically by a loop detector.

More sophisticated control is now becoming popular, including note as well as coin payment, even change giving and optional receipt.

Some car parks are now allowing free entry (loop and boom gate) and a charge is made at the exit.

One means of trying to enforce time limits in a car park is to install the Pay on Entry machines, in conjunction with a boom gate. In this way every driver must make payment to enter, but the ticket must be displayed as on the dashboard of the car. Enforcement of drivers overstaying is by roving attendants. Exit is then automatic by a loop controller boom gate.

Length of Stay - Variable Fee Collection

Three systems are used - Pay and Display
Cashier Controlled Exit
Pay on Foot

Pay and Display

This is usually used in open car parks, where drivers park and pre-pay at conveniently placed machines. The driver inserts a fee for the intended stay and on pressing a button a ticket is issued. This is then displayed on the dashboard of the car, where it can be visually inspected. Roving parking attendants check the tickets to ensure the payment period has not expired and if so (or no ticket displayed) a parking infringement note is issued. This system is open to abuse (and non-use) so that the extra income to be earned from charging a fee dependent on the length of stay is often negated by the non paying or under paying drivers, or the cost of enforcement. An open car park Pay and Display is largely an honour payment system, but has the one advantage that it does not ever 'entrap' a driver should ever there be a system malfunction.

Cashier Controlled Exit

In this system a driver collects a ticket from an entrance driveway stand and on leaving hands the ticket to a cashier in a booth at the exit. The fee is calculated and paid and the cashier activates the exit boom gate.

Usually the entry time is encoded on to a magnetic stripe and the fee calculation occurs automatically when the cashier inserts the ticket into a Desktop Controller.

Much less expensive is to have the entry time printed on a paper ticket (no magnetics) and the cashier enters the entry time onto the Desktop Controller keypad and the fee is displayed. Even less expensive is visual inspection and calculation of the fee without use of a Desktop Controller. Neither of these options are in common use.

Pay by Stay (Pay on Foot)

In this system a ticket is issued at the entrance and on being taken opens the boom gate. When the driver is ready to leave the car park they walk to a Pay Station and insert their ticket, a fee is displayed, depending on the length of stay. Payment is made, the ticket re-encoded and then returned to the driver. At the exit the ticket is inserted into a driveway stand and if valid initiates opening of the boom gate.

It is possible to combine the functions of the Pay Station and the Exit, making payment directly from the vehicle. However as this may cause queues it is usually only done where the car park usage is small or where the predominant use is for a free parking period, such as shopping centre car parks. Another reason may be where there are multi levels to the car park that would necessitate a number of pay stations. Combining the pay station and the exit saves on the extra pay stations, as an upgrade path into the future a pay on exit machine can later be used as a normal pay station and a normal exit machine can be installed.

Pass card, discount payment card and other features can be included at no extra cost.

Pay on Foot systems are more expensive than other systems, but the revenue generated is usually far greater.

Specialist Systems

These comprise any system that is considered “non standard” but can be provided by adapting current technology. Examples are:-

- Ticket on entry, printed with time and date. In a store or a shopping centre the tickets can be swapped for a token to exit, free if within a given period or charged if the stay was extended.
- Plastic ticket issued on entry, redeemed as a token if a purchase is made (ie. at Box office at Cinema) or purchase of an exit token from a note to token dispenser.
- Pay on entry to issue a magnetic card encoded with time and date of entry. Card can then be used to gain access to theme park turnstiles and exit, within the same day.
- Coin pay entry that automatically dispenses a token later used for exit.
- Pay and display machines at a car park entry linked to a boom gate.

FIXED FEE DESIGN CONSIDERATIONS

Fixed price payment is usually positioned to control a boom gate at the entry to the car park, with exit being by a loop detector operating a boom gate.

Some car parks are fitting payment control at the exit, perhaps to allow drivers an opportunity to obtain change for notes at nearby shops, club etc:- to use for exit. If this is done very clear signage that payment will be needed must be placed at the entrance.

One advantage of Pay on Exit in a shop car park is that tokens may be given by the shopkeeper to allow free exit. Coin validators can be made to accept coins and tokens to suit this type of application.

As with all boom gate controlled car parks it is desirable for drivers queuing to have an escape route (if not able to make payment at the entry or the exit).

Coin Only Systems

The most common system is coin or token payment (No notes). Three standard validator types are available:-

1. Mechanical - single coin denomination (usually only for tokens).
2. Electronic - single coin denomination (usually only for tokens).
3. Sophisticated Electronic multi-denominational (the preferred model).

Three housing types are available:-

1. Low security
2. High security.
3. Ultra high security.

The multi-denominational coin validators include a number of additional features such as car counting capability to operate car park full signs, plus audit of coins validated.

It is also possible to fit an intercom to the driveway stands and from the base station the boom gate can be opened by remote control.

Coin and Note Systems

Varying options are available:-

1. Coin and note only.
2. Coin, note and change giving.
3. Coin, note, change and optional receipt.

PAY ON FOOT SYSTEM DESIGN CONSIDERATIONS

The Pay on Foot system is becoming very popular, particularly as system prices have fallen, making their use in smaller car parks more economic. However for the system to operate effectively it should be installed correctly, **must** be maintained and **must** be provided with proper back up support.

System Failure

It must be remembered that a Pay on Foot system entraps drivers in the car park and support must be provided should there be any difficulties. Any system can fail or be put out of action by vandals. When cars cannot leave the car park they need an intercom for assistance or an emergency number to telephone.

Night Time Opening

Some car parks have roving or cashier attendants for day time support, but leave the park unattended at night. If night revenue is negligible, the Exit boom gate can be left open. This ensures that any car arrivals still take a ticket as they enter and therefore if leaving the next day when the boom gate is down they make a payment as normal.

Escape Lanes

If a driver proceeds to the exit without first visiting the Pay Station they will be barred an exit and the display will say "**NO PAYMENT, Use Pay Station**". It is then important that the car can move to a side "escape" bay and not block exit of other cars. This fundamental principle is often overlooked and car parks with long constrained exits **MUST** be redesigned if Pay on Foot systems are to be used.

The entry lanes should also have an escape lane as some drivers wish to abort an entry. In an ideal situation any car aborting should be able to freely join the flow of passing traffic.

Redundancy

If economics permit, it is recommended that extra entry or exits are used. The ideal situation is to have two entrances or two exits beside each other. In this way if one fails to operate it is easy for the driver to move to the other.

Redundancy of Pay Stations is also recommended and preferably in the same location.

Price Structure

It is recommended that the parking fee is simple to understand and to process. Different rates for weekends etc can be accommodated, but should be avoided if possible. It helps if the parking fee, inclusive of GST is charged in whole dollar increments. Since most fees are under \$50-00 any receipt need not itemise the GST on the receipt, which usually says "includes GST".

If the parking fee is always in \$1-00 or \$2-00 increments, giving of change is simplified as only \$1-00 and \$2-00 coin dispensers are needed.

FURTHER LITERATURE

Information on Abberfield's car park equipment can be found in the car park section of our internet site, at www.abberfield.com.au. Included are a number of downloadable files on the different systems available.