

## DEVELOPMENTS IN TICKETING ACROSS NATIONAL RAIL

### Introduction

- Until recently, ticketing on National Rail had remained largely unchanged since the 1980's. The familiar **orange and yellow magnetic stripe ticket**, augmented in some cases by the larger airline ATB2 format, remains the mainstay of ticketing on the railway in Great Britain.
- It has been estimated that since their introduction, **over eight billion** of these credit card sized tickets have been issued. This ticket stock is provided to the train operating companies through ATOC's central supply contract.
- Recently, however, several **new forms of ticketing** have been either trialled or introduced on National Rail. This paper provides an introduction to those developments.

### Smart ticketing

- **Smart ticketing** uses cards similar in size to bank cards and allows 'touch in, touch out' style travelling. A chip in the card stores the travel rights of the customer and confirms these as the card is passed over a reader at a gate or other point of validation.
- The proprietary **Oyster card** system in London is a successful implementation of smart ticketing. Oyster has also introduced the **Pay As You Go** travel principle in the UK where the customer uses monetary credit on the card as he or she travels rather than buying a conventional ticket. Travel expenditure is also 'capped' by the system to ensure the cheapest fare for all the journeys made in a single day is applied.
- Limited use of Oyster has been permitted for some time on certain National Rail routes in London. However, from January 2010, following extensive discussions co-ordinated by ATOC on behalf of the train companies, **Oyster will be extended across all National Rail services within the Greater London area.**
- A different kind of smart ticketing is that based on the **ITSO standard**. While ITSO cards look similar to Oyster, they use an open data standard defined by ITSO Limited, an organisation funded by the Department for Transport (DfT). ITSO has been designed to facilitate a **fully intermodal smartcard** for use on all forms of public transport.
- The first National Rail franchise to introduce ITSO ticketing was the renewed South West Trains franchise in 2007. Since then **all new National Rail franchises have included an obligation to introduce ITSO smart ticketing**, although details vary from one franchise to another.
- In addition to this work, the DfT have also funded an **upgrade to Oyster card readers which will allow ITSO smartcards to be used across Greater London** – the ITSO On Prestige exercise. As with Oyster Pay As You Go, ATOC is co-ordinating train company input into this exercise and it is hoped that by 2011 all TfL and National Rail Oyster readers will be able to accept ITSO based travelcards along with Oyster and magnetic stripe.

- Work is underway to allow an **ITSO card to be loaded to a mobile phone** as an application and trials have taken place in the North West and London. Used on phones which have an **NFC (Near Field Communications)** capability, this enables the phone to act as an ITSO smartcard and remove the need for physical cards. However, NFC capability has to be designed into a mobile phone from the outset, and further developments will depend on how quickly such phones penetrate the market.

## EMV

- A quite separate ticketing development is the extension to transport use of **contactless bank cards** using the international **EMV standard** (Europay-Mastercard-Visa). Such contactless cards are increasingly being issued by banks in place of traditional Chip and PIN cards, and permit small value transactions to be carried out via a single touch to a validator rather than needing the entry of a PIN. In transport terms, customers literally pay at the gate as they begin their journey.
- **Successful trials** of such cards have been carried out by **transport authorities across the world**, and their introduction in London is being planned by TfL for early in the next decade.
- ATOC is currently contributing to the international standards work which is seeking to **extend EMV to handle the additional requirements of longer distance rail travel**, for instance multi-leg journeys and tickets bought in advance that include seat and train reservation details.

## e-ticketing

- This term includes **self-print ticketing**, which follows the airline model by allowing customers to print their own tickets at home, and **ticket to mobile**, which is similar in concept but sends the ticket to a customer's mobile phone. ATOC has developed standards in these areas to ensure that consistent formats are in place as train companies adopt these new approaches.
- These forms of ticket are currently restricted to advance ticket purchases linked to a specific train and seat booking, hence fraud opportunities are limited. They also contain enough information to allow visual inspection by railway staff. However, any extension of the format to season or anytime tickets requires additional controls, and the **initial ATOC standards offer the facility to include a barcode** to assist with this.
- **Barcodes** can be used in two ways – in isolation, where they provide a quick way to read and validate the ticket using a hand-held reader, and as a way of checking the ticket against a database of valid tickets. This latter approach would make fraud very difficult.

## Other mobile phone developments

- As well as the quite separate developments of NFC and e-ticketing mentioned above, modern mobile phones also **offer a platform to allow the purchase of tickets**. This would be especially useful for buying last minute travel, and train companies are working together with ATOC to develop this capability.