Surface System Options

Sandy Galli - GFI Genfare
BUS FAREBOXES
PRESENT OPTIONS

• Mechanical - Non-Electronic
  • Coin and Bill only mechanical “drop boxes”

• Cashless Fareboxes
  • Smart Cards
  • Magnetic Cards

• Full Featured
  • Coin and Bill registering with added features
  • Coin and Bill validation with added features
NON-ELECTRONIC “DROP BOXES”

- Securely accepts coins and bills
- Accepts tokens and tickets
- Easy to install
- Passenger inserts cash and Driver visually counts it
- Cash is removed in secure containers to a counting location
<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small</td>
<td>Manual cash counting</td>
</tr>
<tr>
<td>Inexpensive</td>
<td>Limited amount of cash capacity</td>
</tr>
<tr>
<td>Reliable</td>
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<tr>
<td>Secure</td>
<td>No interfaces</td>
</tr>
<tr>
<td>Easy to maintain</td>
<td>Can not add features</td>
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<td>Well suited for their application</td>
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CASHLESS FAREBOXES

- Smart Card only devices
- Smart Card plus other features
SMART CARD ONLY FAREBOXES

- Read smart cards
  - Period Passes
  - ID cards
  - Proximity-type credit cards
- Change value on smart cards
  - Stored Value Cards
  - Stored Ride Cards
CASHLESS FAREBOXES WITH ADDITIONAL FEATURES

Same Features as Smart Card Only Plus:

- Magnetic Card Reader
  - Transit Passes
- Magnetic Card Processor
  - Stored Value Passes
  - Stored Ride Passes
  - Rolling Period Passes
  - Transfers
- Smart Card Processor
  - Limited Use Smart Cards
CASHLESS FAREBOXES
ADVANTAGES AND DISADVANTAGES

Advantages
• Small – easy to install
• Less expensive than full featured fareboxes
• Can process all types of electronic fare media
• Can interface to other devices
• Reliable
• Configurable - well suited for their application

Disadvantages
• Do not collect cash
• Requires separate device for accepting cash
• Ridership/revenue reports are separate from cash counting/reporting
FULL FEATURED FAREBOXES

Accept all types of fare media AND collect cash

- Electronic Registering Fareboxes
- Electronic Validating Fareboxes
CASH COLLECTION – REGISTERING FAREBOX

- Cash is automatically counted
- Cash counts are verified by driver
- Cash is secured in a large capacity cashbox
- Vaulting of cash is quick and secure
REGISTERING FAREBOXES

HOW DO THEY WORK?

**COINS**

Coins/tokens are mechanically separated

Mechanical device looks at the diameter of the coins

**BILLS**

Bills are mechanically taken into the farebox

Mechanical device looks at the length of the bill
CASH COLLECTION
VALIDATING FAREBOX

- Valid Coins, Tokens & Bills
- Acceptance of higher denomination bills
- No Visual Inspection
- Rejection of Invalid Coins, Tokens, and Bills
HOW DOES COIN VALIDATION WORK?

• Metal “signature” of the coin is determined
• “Bad” coins are returned to passenger
HOW DOES BILL VALIDATION WORK?

- Length of bill is looked at
- Ink on bill is looked at
- Bill is optically scanned
- Valid $1, $5, $10, and $20 bills are accepted
- “Bad” bills are rejected
FULL FEATURED FAREBOXES
ADD-ON FEATURES

- Magnetic Card Processors
  - Transit Passes
  - Credit Cards
- Smart Card Readers
  - Transit Passes
  - Proximity-type credit cards
- Smart Card Processors
  - Limited Use Smart Cards
  - Provide change cards (validating)
- GPS Devices
  - Re-charge magnetic passes and smart cards
- J1708/J1587 Interfaces
  - AVL interface
  - Passenger counter interface
  - Headsign interface
  - Stop announcement interface
## CASH REGISTERING FAREBOXES

### Advantages
- Accurately counts and registers fares
- Takes most of the burden off the vehicle operator
- Quite reliable
- Allows for additional features
- Very secure

### Disadvantages
- Lot of moving parts – maintenance issues
- Registering devices take in everything:
  - Fake bills
  - $100 bills
  - Earrings
  - Chuck E. Cheese Tokens
<table>
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<tr>
<td>• Very accurate</td>
<td>• More fare transaction features on the bus take more time</td>
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<tr>
<td>• More reliable – fewer moving parts</td>
<td>• Bill validation devices will not accept bills with little or no ink left on them</td>
</tr>
<tr>
<td>• Eliminates exact fare – change card</td>
<td>• Rejected “bad” coins can slow the boarding process</td>
</tr>
<tr>
<td>• Allows for more types of fare transactions on the bus</td>
<td>• Still have many moving parts</td>
</tr>
<tr>
<td>• Add value to smart card/magnetic pass</td>
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<td>• Very Secure</td>
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SUPPORT EQUIPMENT

- Data Systems
- Vaulting Equipment
- Ticket Vending Machines
- Ticket Office Machines
- Web-based Ticket/Smart Card Sales
- Merchant Re-Charging Devices
WHICH TECHNOLOGY IS BEST FOR YOU?

- How do you want to collect fares – what types of payment options would be best for your passengers?
- What types of payment options would be best for your passengers in the future?
AMERICAN PUBLIC TRANSPORTATION ASSOCIATION
2011 FARE COLLECTION WORKSHOP

SURFACE SYSTEM OPTIONS

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