

On-Board Technology for Rail

Scalable, modular on-board hardware and software that easily integrates with the back office.

Trapeze offers a full range of on-board solutions for Streetcar, Light, Heavy, Commuter, Intercity and High-Speed Rail operations.

The Trapeze TransitMaster In-Vehicle System includes a PC-based, on-board computer with a full complement of built-in functions, multiple discrete inputs and outputs, and interfaces to ensure that near-term and future vehicle system operational specifications are accommodated.

IN-VEHICLE EQUIPMENT

- Mobile Data Terminals (MDTs)
- Next stop and connections
- Health monitoring
- Automatic Passenger Counters (APCs)

COMPUTER AIDED DISPATCH (SIGNS) AND AUTOMATIC VEHICLE LOCATION (CAD/AVL)

- Voice and message control
- Schedule adherence and headway management
- Incident reporting
- AVL playback

USER FEATURES

Operators log into TransitMaster at the start of their shift. Their supporting technology includes the onboard MDT and mobile radio. After entering their pre-trip vehicle inspection into the system via the MDT, they check the operation of their lift/ramp and deadhead to start revenue service. The vehicle begins to send location messages and adherence status back to the central system. If any of these activities do not complete successfully, an alarm triggers in the dispatcher's Intelligent Decision Support (IDS) queue requiring dispatcher action.

Operators listen for distinct audible tones and monitor the MDT to get automated transfer instructions, feedback on schedule adherence, or instructions for schedule changes. Operators can send a selection of canned service messages to dispatchers when common service problems arise, or request voice communications to report unusual service disruptions.

As Operators continue in revenue-producing service, on-board stop announcements automatically play, external head signs change on route or direction change, passengers are counted as they board and alight, and fare set information is updated.

PRE / POST TRIP INSPECTION

The TransitMaster system provides the capability to define a customized Pre-Trip/Post Trip inspection screen. IDS incidents can be set up in dispatch to capture this data and create a vehicle service request.



Define a customized Pre-Trip/Post Trip inspection with TransitMaster.

The creation of the vehicle service request may be sent automatically or as an action by the controller managing the incident.

EMERGENCY ALARMS

The Trapeze ITS IVLU enables both overt and covert emergency alarm functions. Covert Emergency Alarms are given the highest priority status in the Trapeze ITS



If pre-trip vehicle inspections do not complete successfully, an alarm will be triggered in the dispatcher's Intelligent Decision Support (IDS) queue to promote further dispatcher action.

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data communications system. Dispatchers have the capability to listen in while a rail vehicle is in emergency mode and may downgrade an emergency based on agency policy.

An Overt Alarm is selected for emergencies in which passenger or driver distress can be openly communicated or described. After pressing the Overt Alarm, a priority “canned” message list is available for the driver to transmit to the Dispatch Center quickly. The system administrator configures the list of overt emergency messages that meet authority operating procedures for use on all rail vehicles.

SCHEDULE ADHERENCE

The main (home) page for the Vehicle Operator provides the basic information to support the on-time performance of the vehicle including:

- Schedule Adherence Status
- Operating Advisories
- Next Timepoint Display
- Message Receipt Indicator

DATA MESSAGING

A pre-programmed, user-defined message set is stored onboard. Upon selection by the vehicle operator, these are transmitted from the vehicle to the Dispatch Center. Up to 16 different categories of 16 messages, for a total of 256 messages, can be stored in the system. For safety

purposes, the MDT display of the Message page is available only when the vehicle is under a user-defined operational threshold, speed for example.

Dispatchers can send canned data messages to the MDT. The MDT supports receipt of free-form text messages generated from dispatch consisting of up to 256 characters. The text messaging system works on a “first-in, first-out” (FIFO) basis for newly received messages.

INTEGRATED VOICE COMMUNICATIONS

The MDT provides the Operator with the necessary tools to manage the audio capabilities of the onboard TransitMaster system. This includes voice communications with the dispatch center for private handset calls, fleet announcements over the driver’s speaker, and the onboard public address system.

The Operator can initiate a request to talk with the dispatcher and in the case of matters that are more urgent request to talk is available. The Operator has direct access to Public Address via the MDT for:

- Volume Control
- RTT and PRTT Access
- On/off control of amplifiers
- Volume control for external announcements
- Volume control for internal announcements



Dispatchers can send canned data messages to vehicle operators via the MDT.

CUSTOMER STORY

Sun Link provides streetcar service to Tucson’s downtown core. To deliver real-time information, Sun Link selected Trapeze Group’s TransitMaster, the only solution equipped with Intelligent Decision Support (IDS), to maximize and automatically prioritize events, decide workflow for scenario management, and deliver external data. This seamless integration allows Sun Link to monitor ridership, deliver real-time information and increase dispatcher efficiency.

“Monitor ridership, deliver real-time information and increase dispatcher efficiency.”



TRAPEZE GROUP

Trapeze Group works with public transit agencies and their communities to develop and deliver smarter, more effective public transit solutions. For more than 25 years we have been Here for the Journey, evolving with our customers around the world to helping them move people from point A to Z, and everywhere in between.

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