

Transit 101

Outline

- Revenue service
 - Route, route variant
 - Trip
 - Half-trip
 - Time points
 - Running time
 - Dwell time
 - Layovers and recovery time
 - Runs and Blocks
- Nonrevenue service
 - Pull outs/ins
 - Deadheads
 - Interlining
- Performance reporting
 - Headway
 - Schedule adherence

Routes and Variants

- **Route variant** – unique path between two end points
 - Examples
 - 57_0, 57_1 – Route 57 outbound and inbound
 - 57_2, 57_3 – Route 57A short turn to Oak Square
- **Route** – public-facing designation for collection of **route** variants that share most of their path
 - Example: Route 57

Trips and Time Points

- **Trip** – a single round-trip journey of a bus on a **route**, usually combining an inbound and outbound **variant**
 - E.G. the #57 trip leaving Watertown Yard at 7:15 and returning from Kenmore at 7:59
 - Trips are one of the fundamental units of a schedule
 - Each trip has a unique number for the day which is the same across days, good for comparison
- **Half trip** – a one-way portion of a **trip**
 - E.G. the #57 from Watertown Yard to Kenmore
- **Time point** – stops along a **route** with scheduled times for each **trip**
 - Each **trip** has a time when it should be at each time point

Running time, Dwell Time and Recovery Time

- **Running time** – time it takes a bus to complete a **half trip**
- **Dwell time** – the time a bus spends at a stop boarding and alighting passengers
 - Dwell time is often a major factor in variability
- **Recovery time** – time between the scheduled end of a **half trip** and the beginning of the next **half trip**
 - Allows drivers to have a break or late buses to get back on schedule
 - Often **recovery time** is set at difference between 50th and 95th percentile **running time** (meaning 5% of all **half trips** will still be late)
- **Half trip time** = **running time** + **recovery time**
- **Trip time** = outbound **half trip time** + inbound **half trip time**

Runs and blocks

- **Run** – set of **trips** driven by the same driver
 - A run links several **trips** together with time for driver breaks in between
- **Block** – set of **trips** operated with the same vehicle
 - **Block** also includes time to **pull** vehicles out of and into the garage
- **Swing on** – a driver starting a **run** from an in-service station rather than a garage
 - I.E. in the middle of a **block**

Pulls, Deadheads, and Interlining

- **Pull in/out** – movement of vehicle to and from the garage
- **Deadhead** – moving a vehicle without taking customers
 - Either to/from garage or from the start of one **route** to the start of another
- **Interlining** – A **run** and/or **block** that includes more than one **route**
 - E.G. Running a **trip** on the 57 from Watertown to Kenmore, then the 8 from Kenmore to JFK and back to Kenmore, and then the 57 again to Watertown

Performance Reporting

- Headway – the time between vehicles at a point along the route
 - Can be measured at any point along the route
 - Providing an even headway can be more important than keeping to the exact schedule for frequent services
- Schedule adherence – the difference between the scheduled and actual time a bus arrives at a stop
- “On-time” can be measured either based on headway regularity or on schedule adherence

The MBTA's on-time performance standard for bus service

Time Point Test	Origin Timepoint	Mid-Route Time Point(s)	Destination
Scheduled Departure Trips (Headways ≥ 10 minutes):	Start 0 minutes early to 3 minutes late	Depart 0 minutes early to 7 minutes late	Arrive 3 minutes early to 5 minutes late
Walk-up Trips (Headways < 10 minutes):	Start within 1.5 times scheduled headway	Leave within 1.5 times scheduled headway	Running time within 20% of scheduled running time
Route Test	For any given bus route to be in compliance with the Schedule Adherence Standard, 75% of all timepoints must be on-time according to the above definitions over the service period measured.		