AVL OCC TRAINING SIMULATOR

User Instruction Guide

For trainers, trainees, controllers and demo users

Purpose
Practise real-time service control without affecting live operations.

Focus
Headway, EWT, disruption response and dispatcher logging.

Audience
OCC trainees, trainers, managers and external visitors.

1. Quick Start

Follow this sequence every time you run a demo, self-training or classroom exercise.

1. Select City Pack

Choose the real route/city, for example London - 25, Dublin - 39A, Riyadh - 8 or Manchester - 192.

2. Read Scenario

Check the scenario title, difficulty and target. Confirm the objective before starting.

3. Press Start Demo

Start the simulation and allow the route to move before applying interventions.

4. Monitor AVL

Use the route diagram, Live EWT and live tables together.

5. Select Bus

Click a bus or use Controller Action to apply a control decision.

6. Log Decision

Record the action, location and reason in Dispatcher Log.

7. Review Impact

Watch whether headway, EWT, gap and bunching improve.

8. Debrief

At the end, discuss decisions, final EWT, lost km and logging compliance.

GOLDEN RULE

On high-frequency routes, protect even headways. A slightly late but evenly spaced service is usually better for passengers than buses running in bunches followed by long gaps.

2. Main Screen Areas

Use this page to introduce the screen before asking trainees to make decisions.

Screen area	Purpose
City Pack	Selects the real route and route number used by the simulator.
Stand A / Stand B	Shows buses recovering at each end and their next departure/headway condition.
Sim Clock	Shows simulated service time. In demo mode this is faster than real time.
Live EWT	Shows current Excess Wait Time performance against the target.
AVL Route Diagram	Shows bus positions, route points, stands and direction.
Live Table	Shows bus-by-bus operational data, including actual time, headway and status.
Controller Action	Opens commands such as hold, run light, curtail and depart now.
Dispatcher Log	Records manual or selected-bus actions for compliance and debrief.

WHAT TO POINT OUT TO NEW USERS

- The route number badge confirms the selected real route.
- Outbound A -> B and Inbound B -> A are displayed separately on the AVL diagram.
- The EWT panel is the main passenger-waiting-time indicator.
- The live tables explain the AVL picture in operational detail.

3. Reading the AVL Diagram

The route diagram is the controller view used to decide what needs attention first.

Colour	Meaning	Controller response
Yellow	Bus is on a good or acceptable headway.	Monitor, usually no action.
Red	Bus is too close to the bus ahead.	Consider hold/recovery if safe.
Green	Bus is too far from the bus ahead; a gap is forming.	Consider depart now or recovery action.
Grey	Bus is at stand, recovering, curtailed, held or inactive.	Check whether it should wait, depart or be used for recovery.

HOW TO INTERPRET A BUS

- Bus label shows the bus number and current headway, for example HW 6m.
- Route points show key stops/control points. Stands are separate from passenger stops.
- A red bus close to another red bus usually means bunching risk.
- A green bus may be creating a passenger gap behind it or may need support ahead.

4. Live Table and Full Schedule

Use the tables to confirm what the AVL diagram is telling you.

Column	What it tells you
Bus	Vehicle/simulated bus identity.
Duty	Duty or work allocation.
Trip	Current trip reference.
Sched	Scheduled time for comparison.
Actual	Current simulated actual time.
Early/Late	Shows whether the bus is early, late, adjusted or on time.
Headway	Time gap from the bus ahead; the key high-frequency metric.
Last Loc	Last route point, stop or stand.
Status	Good, too close, too far, at stand or not logged on.

BEST PRACTICE

- Do not rely on the AVL diagram only. Always check the live table before applying a major action.
- Use headway and status first; use early/late as supporting information.
- Look at both directions before deciding which bus to control.

5. Controller Actions

Apply the smallest realistic intervention that improves the service pattern.

Hold / Recovery

Use when a bus is too close and a short hold can widen the gap ahead. Avoid creating a new gap behind.

Depart Now

Use when a stand bus must leave immediately to cover a gap or missed departure.

Run Light

Runs out of service between selected points to reposition the bus quickly. This can create lost km and must be justified.

Curtail

Turns a bus short to recover the service pattern. Consider passenger impact and future headway.

Depart At

Sets a planned departure time where controlled release is better than immediate departure.

Cancel Last Instruction

Use only where the last instruction was applied in error or the situation changed before execution.

BEFORE PRESSING OK

- Confirm bus number and direction.
- Confirm the selected start and resume/curtail point.
- Check the expected result panel.
- Decide what will be written in the dispatcher log.

6. Controller Decisions Must Be Logged

Every controller intervention must be recorded so the trainer can review the decision, timing and reason.

ASSESSMENT RULE: If a control decision is not logged, it did not happen for the debrief.

WHEN A CONTROLLER MUST LOG

- Holding a bus or placing it into recovery.
- Running a bus light from stand or between route points.
- Curtailing a bus or changing its normal trip pattern.
- Departing a bus now or setting a controlled departure time.
- Cancelling an instruction or correcting an earlier decision.
- Responding to an incident such as breakdown, police obstruction, passenger illness, driver issue or fare dispute.

MINIMUM INFORMATION REQUIRED

Field	What must be entered	Example
Bus	The bus number affected by the decision.	Bus 10
Action	The control action applied.	Hold / Run Light / Curtail
Location	The stop, stand or route point where the action applies.	Donnybrook / Stand A / OConnell St
Time	Use auto time unless entering a manual historical decision.	07:14
Notes	Short operational reason, not just the action name.	1-min gap, too close; held to rebuild headway.

GOOD LOG WORDING

Poor log	Good log
Hold	Bus 10 held at Donnybrook - 1 min behind bus ahead, short hold to reduce bunching.
Run light	Bus 2 run light Stand A to Ongar - large outbound gap forming, used stand bus to restore service.
Curtail	Bus 18 curtailed at OConnell St - late bus would damage inbound headway if full trip continued.

TRAINER CHECK

- After each scenario, compare the AVL outcome with the dispatcher log.
- Ask the trainee why the action was chosen, why that location was selected, and what result was expected.
- Missing logs should reduce the assessment score even if the bus movement improved.

7. When to Use Run Light, Hold and Curtail

These are the three actions trainees usually need most practice with.

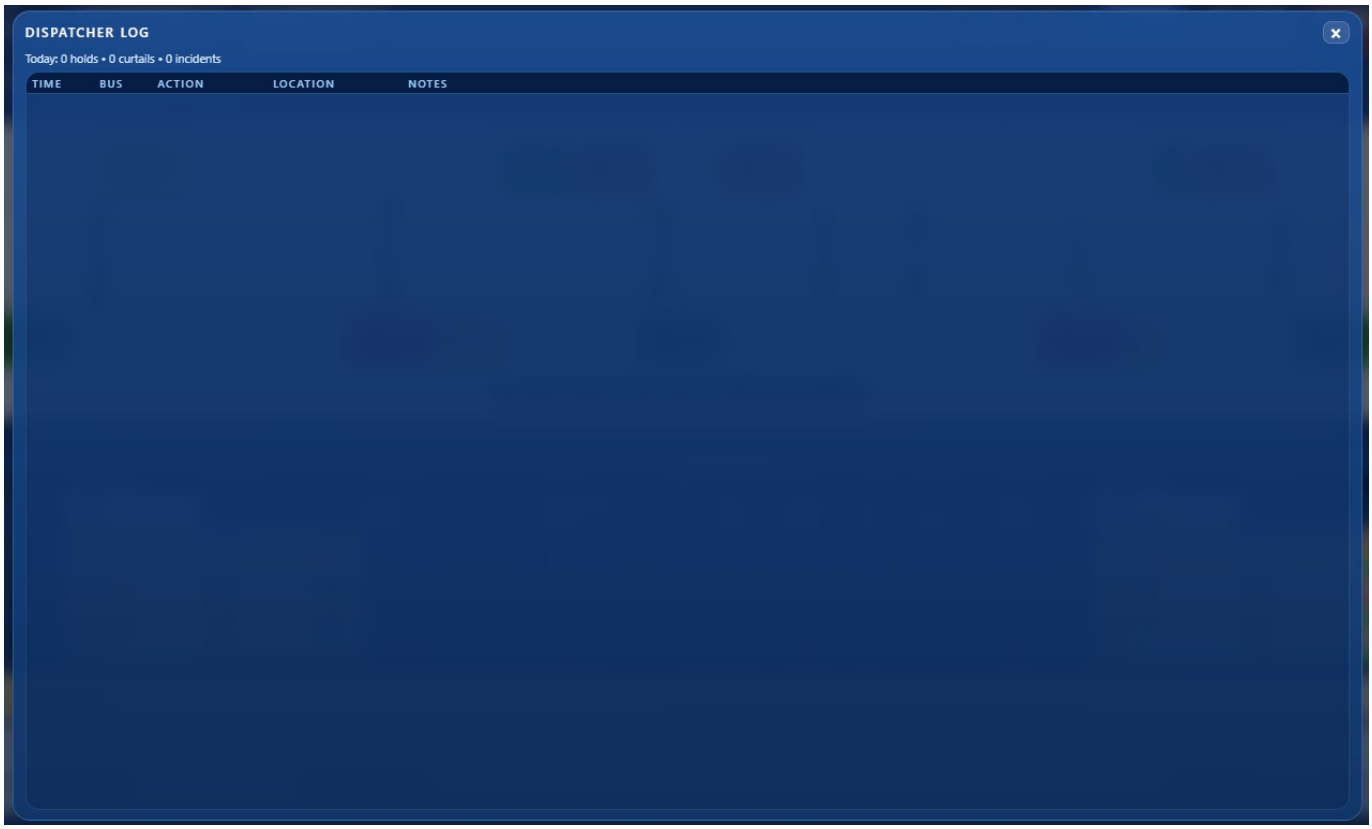
Action	Use when	Avoid when
Hold	A bus is too close to the bus ahead and a short hold can improve spacing.	The bus behind is already close or the hold would create a serious gap.
Run Light	A stand or delayed bus can be repositioned to cover a larger gap quickly.	There is no clear recovery point or the lost mileage is not justified.
Curtail	A very late bus can no longer complete the trip without damaging the opposite direction.	Passengers would be heavily affected and the curtailment will not improve the pattern.

OPERATIONAL THINKING

- Always ask: what happens in front of the bus and what happens behind it?
- Use the least disruptive action first where possible.
- A small early hold is often better than a late curtailment.
- Run light should have a clear service recovery objective, not just because a bus is late.

8. Dispatcher Log

The dispatcher log is used for training compliance and decision review.



WHAT TO RECORD

- Bus number and action type.
- Location or route point.
- Time of intervention.
- Short reason explaining the operational decision.
- Whether the action was selected from a bus or entered manually.

EXAMPLE ENTRIES

Example	Good reason
Bus 10 - Hold - Donnybrook	1 minute headway, too close, short hold needed to widen gap.
Bus 2 - Run Light - Stand A to Ongar	Large outbound gap developing; stand bus used to restore service.
Bus 18 - Curtail - OConnell St	Late bus would damage inbound headway if full trip continued.

9. End of Demo and Scenario Review

The result screen should be used as a debrief, not only as a score.

Live EWT Final and session average waiting-time performance.	**Worst Gap** Largest passenger-facing gap observed.
Average HW Deviation How far the service moved away from target headway.	**Bunching** Number of buses too close together.
Critical Misses Major missed opportunities to intervene.	**Lost km** Mileage impact from run light or curtailment.
EWT Incentive Indicative financial/mileage performance effect.	**Logging Compliance** Whether actions were properly recorded.

DEBRIEF QUESTIONS

- Which problem should have been treated first?
- Was the chosen action the least disruptive option?
- Did the intervention improve EWT or move the problem elsewhere?
- Was the decision logged correctly?
- What would the trainee do earlier next time?

10. Common Mistakes to Avoid

Use this section when coaching new controllers.

Mistake	Why it matters
Only looking at late buses	High-frequency control is about regular gaps, not only timetable lateness.
Holding too long	Creates a new gap behind the held bus.
Sending buses together from stand	Creates immediate bunching and later passenger gaps.
Run light without purpose	Adds lost km without solving the service problem.
Curtailing too late	The recovery opportunity may already be gone.
No dispatcher log	Good action cannot be properly reviewed or evidenced.

TRAINEE DISCIPLINE

- Observe the whole route first.
- Identify the passenger risk.
- Choose the smallest effective action.
- Record the decision.
- Watch the result for several simulated minutes.

11. One-Page Quick Reference

Keep this beside the simulator during training.

Signal	Meaning	Likely action
Red bus	Too close / bunching risk	Consider hold or controlled recovery.
Green bus	Too far / gap forming	Consider depart now, run light or other recovery.
Grey bus	Stand, recovery, hold or inactive	Check if it should wait or be inserted.
High EWT	Passenger waiting is worsening	Prioritise the biggest passenger-facing gap.
Worst gap increasing	Service spacing is failing	Act before the gap becomes unrecoverable.
Action taken	Training evidence required	Log bus, action, location and reason.

FINAL MESSAGE

The simulator is not about pressing buttons. It is about thinking like a real OCC controller: protect the headway, manage disruption, reduce passenger waiting time and make decisions that can be explained afterwards.