



Run Block Optimizer

Get the best vehicle schedules that work for your operators and your agency.



Delivering an efficient and reliable schedule while making the most of finite resources requires balancing many, competing requirements. Run Block Optimizer enables schedulers to optimize an existing blocking solution and iterate and produce a solution that meets operational limitations and optimizes blocks for efficient runcutting.

Using an improved multi-piece algorithm and applying complex restraints, RBO produces more efficient “cut from scratch” run solutions and optimizes the number of blocks and runs to realize greater operational and cost efficiencies.

Overview

Relink Trips While Scheduling Drivers

- Moves and re-links trips in blocks as they are runcut
- RBO block scenarios enable schedulers to experiment with multiple combinations of parameters to find the most efficient block results and compares totals to help determine the best solution
- Enables user to view relief points assigned to a block at any time during the relinking and runcutting process
- Compares previously saved block scenarios with the RBO-created new scenarios
- Re-cut the blocks and compares the pay components of the previous one to choose a higher quality runcut

Efficiently Assign Vehicles to Garages

- Uses constraints to automatically assign garages that add the least cost when generating runs
- Enables restriction on depots where an operator can sign on or off
- Balances the number of buses by depot
- Balances the number of buses by vehicle class used from depots during peak period

Produce and Optimize Blocking, Runcutting in a Single Pass

- Performs various checks to ensure a legal solution based on selected parameters (e.g., garage, safety, driving and break requirements)
- System checks for any data issues, parameter, or constraints validation before giving an error message that explains why legal solution cannot be created; error needs to be resolved before a runcut can be produced
- Produces a minimum number of runs at the first attempt; only one runcut needs to be performed using Run Block Optimizer to get the best result for the selected parameters
- Parameters do not have to be altered if RBO produces successful runcuts even if relief opportunities change (change in union agreements needs review)

Agency Benefits



Reduced Operating Costs

An efficient vehicle schedule maximizes revenue hours while minimizing deadhead distance and layover time. Significant cost savings are realized by optimizing vehicle utilization, fuel efficiency, maintenance schedules, and the capacity potential of depots.



Minimized Deadheads

Cut down dead mileage, reduce dead hours, and improve operational efficiency by reducing the number of vehicles used and reassigning buses to depots for best pull-in and pull-out times.



Increased Operator Satisfaction

The algorithm finds the best solution to optimize platform hours while accommodating agency rules and contractual labor agreements, creating the best working conditions for operators.

Passenger Benefits



Impactful Service to Meet Passenger Needs

- Optimizes efficiency of limited resources; cost savings can be allocated to other service improvements
- Facilitates better planning for future vehicle and staffing requirements



Reduced Passenger Wait Times

- Optimal vehicle scheduling reduces friction throughout the passenger journey by facilitating better timed transfers, reducing passenger wait times



Increased Passenger Comfort

- Minimizes passenger transfers with better interlined routes



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