

Case Study Regional Transportation District (RTD) of Denver, Colorado

How AssetWorks Integrated Product Suite Helps the RTD Maintain Their Bus, Rail, Facilities and Maintenance of Way Operations



Nestled at the base of the Rocky Mountains is the bustling city of Denver, Colorado. With an average of 300 sunny days per year, Denver is located in the heart of an outdoor adventure land and home to many major corporations. With so much to offer, it is no surprise that Denver is one of the fastest growing cities in America.

Created in 1969 to serve the Denver area, the Regional Transportation District (RTD) services this broad area that covers 2,337 square miles throughout eight counties in the Denver-Aurora-Boulder area. With over 1,000 buses, RTD offers a variety of transportation services to a population of 2.7 million including 140 local, express, and regional bus routes servicing more than 12,000 bus stops, six light rail lines providing 35 miles of light rail service, and nearly 80 Park-n-Rides. In addition, RTD offers Access-a-Ride demand response paratransit, free mall shuttle service, and transportation for many of Denver's special events.

AssetWorks fully integrated Enterprise Asset Management (EAM) software product line—FleetFocus, RailFocus, EquipmentFocus and LinearFocus—has been RTD's solution for total asset and maintenance management since 2007. RTD uses the AssetWorks solution in all of its maintenance facilities to manage bus, paratransit, support fleet, and light rail operations as well as its maintenance of way, rebuild, body, and electronics, treasury, and facilities operations. RTD tracks all aspects of its operation on AssetWorks' single database, including real-time labor capture, work order management, materials management and fuel and fluid data to ensure that it is tracking real-time operating costs.

RTD also requires private contractors who are responsible for the maintenance of over 400 of RTD buses to track their activities within FleetFocus. The inclusion of commercial vendors allows RTD to review performance measures and efficiency for the entire fleet in a consistent manner while ensuring that RTD 'best practices' are enforced at all levels.

Quality Data In = Quality Data Out

Reports are only as accurate as the information that is put into the system. Since implementing FleetFocus in the Bus Department, RTD has become a paperless shop. Daily tasks performed by several hundred supervisors and technicians are now captured in real-time by FleetFocus including recording labor, processing work orders, ordering and issuing parts. The ease of use offered by FleetFocus ensures that all employees, regardless of computer-skill level, utilize the system comfortably and consistently.

“ FleetFocus offers a happy balance between how much time a technician needs to spend at a kiosk entering information and his time performing work on the shop floor. It allows them to enter information and get information out of the system very efficiently in a short amount of time. ”

*Dean Shaklee
General Superintendent
of Maintenance*

“Based on the inspection items that require follow-up repairs listed on the report, the supervisors and I are able to identify effortlessly which segments or equipment are in need of work and send the appropriate staff to handle the job. The reports that we get from LinearFocus are an important tool for us managing our workload.”

*Terry Emmons
Acting Manager,
Maintenance-of-Way*

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Dean Shaklee, General Superintendent of Maintenance, notes that productivity has increased since moving to a paperless shop. "FleetFocus offers a happy balance between how much time a technician needs to spend at a kiosk entering information and his time performing work on the shop floor," says Shaklee. "It allows them to enter information and get information out of the system very efficiently in a short amount of time."

FleetFocus, along with all of AssetWorks integrated products, provides RTD with sophisticated reporting and trending information. RTD relies heavily on these reporting capabilities to manage their daily workload. In addition to AssetWorks' out of the box reports, based on the specific needs of different departments and managers, RTD has created upwards of 100 custom reports, which are generated automatically and then emailed directly to the appropriate recipients. Reports can also be executed on an "as-needed" basis. These reports are tailored to provide specific information to help RTD's management make daily and long term decisions.

Staying on Top of Inspections

Daily reports are an example of how technology can help supervisors and directors manage through facts. By reviewing accurate and dynamic data, RTD is able to proactively manage staff and workload which increases operational efficiency and translates into increased equipment availability.

RTD's Maintenance-of-Way (MOW) department relies on this same reporting capabilities provided by LinearFocus. Tracking inspections and PM information is critical to this department, which must provide detailed inspection information for every mile of track to the Colorado Public Utilities Commission and the Federal Railroad Administration (FRA).

Terry Emmons, Acting Manager of the MOW department, relies on a Service Request Report to manage his department's workload. "Based on the inspection items that require follow-up repairs listed on the report, the supervisors and I are able to identify effortlessly which segments or equipment are in need of work and send the appropriate staff to handle the job", says Emmons. "The reports that we get from LinearFocus are an important tool for us managing our workload."

In another sector of operations, RTD's Rail Department uses RailFocus for compliance and audit reporting as well as to manage inspections and PM appointments. Railcars undergo many inspections each year, with some as frequent as every two weeks. To maximize efficiency, the Rail Department lines up PM appointments with inspections so the rail car experiences less downtime for maintenance.

Each day, Lou Cripps, Light Rail Maintenance Supervisor, runs two reports: Scheduled Activity by Equipment; to show which cars are due for multiple inspections, and Scheduled Activity by Meter; to show the miles until inspection is due. He uses this information to schedule work orders and maintenance activities. As required by the Public Utilities Commission (PUC) and Federal Transit Administration (FTA), both of whom who oversee the operation, inspections and defect reporting must have a paper trail. RTD performs its inspections using both RailFocus and on paper and then manually inputs defects found into RailFocus as work orders with specific tasks to address the inspection items. RTD has found this to be a quick and accurate process which has improved their audits from the PUC and FTA.

"Inspections and audits are an important part of our maintenance practices," comments Lou Cripps. "Prior to using AssetWorks an audit from the PUC or FTA may have taken several days. AssetWorks software now helps us organize all the inspection and maintenance data. It's very easy to access when we need it."

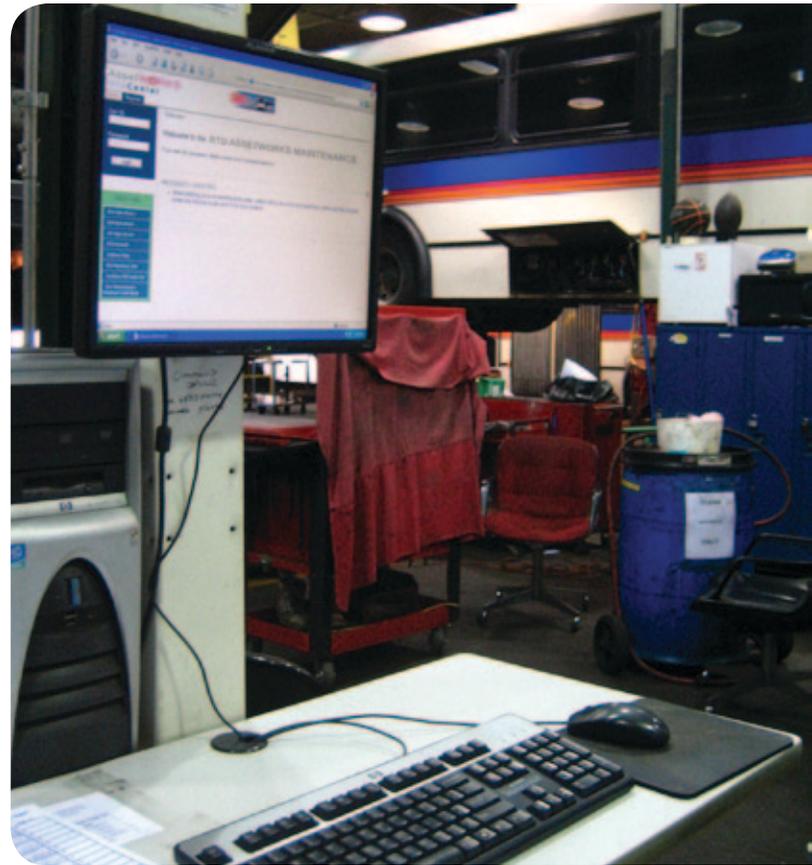
Smart Coding

Symptom codes, sometimes called complaint codes and task codes, are an important part of the maintenance process because they are what direct the subsequent action and solution for a particular issue. The challenge that transits face with coding structures is that if they are too general, then the reports that reference them don't provide enough detailed information to be useful. If, however, a transit fleet uses a coding structure that is too granular, it can be both confusing and time-consuming for the technician. The key is to strike the right balance that keeps both the shop floor running smoothly and gives management the data they need.

Prior to going live with the FleetFocus system, RTD invested a great deal of time creating smart codes that were very well thought-out and logical. Working as a team led by both Dave Ober and Dave Richardson, RTD personnel created codes that captured and described virtually anything that could go wrong with a vehicle in an intuitive, logical and manageable list of codes. This complete list translates into very good reporting. It also allows RTD to track comebacks for the same complaint code with much greater accuracy.

Keeping Track of Serialized Components

Trains are designed so that most major components, such as the HVAC, motors, gear boxes, and pantograph, can be removed and swapped out. This methodology enables maintenance to bring a railcar into the facility, remove the questionable or broken part, replace it with a working part, and then send the train back out into revenue service. This can happen in as little as four to six hours.



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*Lou Cripps
Light Rail
Maintenance Supervisor*

A major part of RTD's ability to get such efficiency out of the AssetWorks integrated software was its investment in setting the system up to meet its needs from the beginning. Much like the smart coding, RTD personnel were diligent about setting up all their serialized components within the AssetWorks system. The Serialized Components functionality is an extremely effective tool for managing these parts. It keeps track of components and parent units silently behind the scenes so that technicians can focus on the work of keeping railcars running on the track.

When a railcar comes in for service and a component is to be swapped, the technician uses a drop down list to select the part to be removed. AssetWorks then changes the status of that component from "installed" to "needs rebuild" and places it into the Production Planning queue. When the technician replaces the component with a new one, AssetWorks tracks the component from "In stock" to "installed." As the component needing to be rebuilt is worked on in the Rebuild Shop, AssetWorks continues tracking the work orders, labor and parts associated with its repair. As soon as the work on the component has been finalized, AssetWorks changes its category to "In Stock" so that it is ready to be installed when needed.

"It took a great amount of effort to set up all the components the way that we wanted, however it was worth the time. Now that the system is running full steam, the Serialized Components tool is extremely useful. I am constantly amazed by how powerful the system is," asserts Lou Cripps.

The Serialized Components function is also instrumental in determining the lifecycle cost of the trains. The costs associated with purchase and upkeep travel with the serialized components and the rail cars. This allows RTD to understand which rail cars paired with which components are the most economical to operate.

Production Planning

RTD operates a Unit Rebuild Shop, a Body Shop, and an Electronics shop. The system RTD used prior to implementing AssetWorks was unable to track parts or labor costs on rebuildable or fabricated parts. As a result, these costs were not accounted for prior to the implementation of the AssetWorks software suite. AssetWorks' Technician Portal solved this problem for RTD by giving RTD the tool it needed to track all costs associated with a unit rebuild or parts fabrication, including real-time labor and parts costs. This portal allows RTD to accurately capture the costs of their rebuild or fabrication operations which allows RTD to account for these costs when the parts are put on an asset or into inventory.

In addition, the system has the ability to track rebuildable parts and components throughout their lifecycle, from the time a rebuildable part is:

- Removed from a parent unit
- Transferred to a rebuild center
- Throughout the stages of the rebuild process
- Placed back into inventory
- Installed on a new Parent Equipment Unit

AssetWorks Production Planning functionality allows RTD's Unit, Body, and Electronics shop supervisors to monitor and schedule incoming production requests. Generated by the Inventory Control department, these requests alert the Unit, Body, or Electronics shop supervisors that stock is needed on a rebuildable or fabricated part. These production requests appear in a central repository called the Production Management portal. From this portal, the supervisor has visibility into the number of pending and active production requests as well as the number of open work orders for part and component rebuilds or fabrications. With a single click, the supervisor can drill into the Production Management screen and view the details of each request or work order. Supervisors may also create new work orders from an incoming production request and release rebuilt or fabricated items into inventory as they are completed without having to navigate out of the Production Management portal.

Overview

Customer
**Regional Transportation
District (RTD) Denver**

Industry
Public Transit

Fleet Size and Facilities
**1,048 Busses
(611 operated by RTD,
437 by private contractors)
118 Rail Cars
12,685 Bus stops
426 Shelters & Stations
35 Miles of Track**

Number of shops
**4 RTD shops
4 private contractor shops
2 light rail shops**

Number of Technicians
359

Product
**FASuite:
FleetFocus™
LinearFocus™
RailFocus™
EquipmentFocus™**



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998 Old Eagle School Road, Suite 1215 | Wayne, PA 19087

www.assetworks.com | 610.687.9202