

# Works-In-Process for El Dorado National

## Background

El Dorado National is the largest volume producer of commercial buses in North America. Their assembly process is split across dozens of stations that make up multiple lines.

Until recently, they were tracking how long it took to complete a bus by having employees manually punch a date and time stamp on time cards as they started and completed tasks at the various stations. This data was then manually keyed into an Excel database that they used to track their projects. El Dorado keeps track of how long a bus spends at each station within a line so they can monitor how long processes such as welding and painting factor into the total time to complete a bus. They also track how many hours employees spend working at each station and on each bus in total.

## Problem

El Dorado was looking for a solution that would cut down on the amount of manual data entry they had to do on a daily basis, which included employees having to walk over to the punch card station in between jobs. In addition, someone had to manually enter all the data from those cards into a spreadsheet (a major source of error). They also wanted a system that would prevent errors in their data by employees forgetting to punch his/her card at the beginning and end of each job. Finally, there was a need to being able to view the data in real time as opposed to waiting until it had all been manually entered.

## Solution

MSS Software developed a cloud-based application for them called Scan-Tracker incorporating barcode technology. Scan-Tracker make use of barcode readers to collect and store time records of employees, job stations, and buses in an online database. Daily and weekly reports can be displayed and printed regarding the amount of time spent by employees on a particular job, at a station and bus on completing tasks related to the buses.

The application is cloud based so users can access their data and reports from any browser with internet access. As mentioned before, barcode readers were used by outfitting their facility with dozens of CipherLab model 8200 mobile barcode computers. The devices come with a built in barcode scanner, LCD screen and WiFi radio that are used to connect to El Dorado's WiFi network in order to transmit data to the cloud-based Scan-Tracker database.

There are several factors in the system which allow it to function and provide timely and accurate data for management:

1. El Dorado tagged each Station and Bus with a unique barcode. Additionally they have given out unique barcoded ID cards for each of their employees. Employees are able to scan barcodes for Station, Bus and Employee Number from any of the handhelds they have employed in their environment.
2. The mobile barcode devices (8200s) are able to communicate over WiFi with the Scan-Tracker database in real time preventing an employee from starting a new job before stopping another. It

also prevents a stop if there is not a start for a job in the database. This verification process prevents erroneous data from being collected.

3. The functionality of the system is such that if their WiFi network ever goes down, the 8200s are able to collect scans locally in batch mode. These scans can then be uploaded via a USB cradle and imported into Scan-Tracker later.

## Reports

Several reports are possible and can be viewed online or printed out as needed. These reports provide management with much needed information regarding the process of manufacturing buses and warns them of any issues they face in their manufacturing process. Below is a short list of reports that can be processed.

- **Bus Reports:** The Bus reports allow admin users to view a detailed log of the work completed on the bus. The report displays how long the bus was at each line and station along with what employees worked on the bus and for how long. They can choose to view data over a specific date range or for the entire lifespan of the bus.
- **Employee Reports:** The Employee report shows what Buses, Stations and Lines an employee worked on over a particular date range and shows total time spent in that process.
- **Station Reports:** The Station report displays what employees and buses were worked on and for how long over a specified date range.
- **Exception Reports:** The Exception report displays any data over a specified date range that has a missing start or stop time for a particular job. This report is generated so they can quickly view any erroneous data.

As pointed out earlier, admin users can view all of the data currently in the Scan-Tracker database in real time. The grid that this data is displayed in can be grouped and sorted for quick analysis. For example, if an admin wanted to see how many employees were currently clocked in to a particular station they could quickly view this data.

In addition, Scan-Tracker allows data to be imported from an outside source such as Excel, Text or CSV file formats. This provided El Dorado the ability to import their previous data they had from their existing Excel file where they had been tracking data using punch cards over the years.

## Summary

The whole project has provided El Dorado much better control over their processes as well as real-time verification of what is happening on the manufacturing floor with their employees, processes, and buses. Management is able to make more timely and informed decisions backed up by the real time data collection system.

MSS Software is a Barcodes Solutions Company and reseller of CipherLab Barcode Equipment located in Fairfax, VA. For more information on this application, please contact us at 800.428.8643 or visit us on the web at [www.mss-software.com](http://www.mss-software.com)