Creating a Railroad Route Coverage for use with ESRI ArcView and RAILER

Getting started, Initially, you will need:

1. A populated, or partially populated, RAILER database with tracks names, begin and end stations, and ideally, turnout/grade crossing data loaded. This information serves as calibration points for stations along each route (track).
2. A GIS shapefile of the track centerline for the network.
3. An annotated map that lists tracks extents, turnouts, grade crossings, etc to use for reference.

ODBC Link

Go to Control Panel, Admin Tools, Data Sources (ODBC). Then click on System DSN tab and choose Add. Select "Microsoft Access Driver", click Finish. Type the database Name in the Data Source Name Box and click the Select… button to navigate to the RAILER database to create the ODBC link for.

ArcCatalog Database Connection

Open ArcCatalog. Click Database Connections on the tree on the left. Click Add OLE DB Connection. On Provider Tab, select "Microsoft OLE DB Provider for ODBC Drivers". On the Connection tab, click use data source name, and choose the ODBC link name as defined in the step above. Click OK. You can then rename that database connection to the same name as the ODBC link name.

Creating a calibration coverage

1. Open ArcMap, and add the rail network centerline shapefile into the view. Can also add coverages for roads, aerial photos, etc, to help with establishing reference calibration points.
2. Create a new Calibration shapefile of feature type "Point" through ArcCatalog. After creating the calibration shapefile, add the following attribute fields to the shapefile attribute table:
    a. Name=TRACKID, Type=Text, Length=50
    b. Name=Station, Type=Long Integer
    c. Name=Desc_, Type=Text, Length=75 (optional field to add description about data point)
3. In ArcView, add the newly created calibration shapefile to the active data layer with the rail (line) shapefile.
4. Begin editing the calibration layer, and place data points at each track begin and end location, locations of switches, grade crossings, and any other physical features on the map that correspond to a station location in RAILER.
5. Open up the calibration shapefile attribute table. For each point that was placed on the map, enter the track name, station, and optionally a description that corresponds with that point. A location such as a turnout will have multiple points, one corresponding to the station of the thru track, and one for the diverging track. (Note: It may be helpful to have the spreadsheet track, turnout, and grade crossing reports all printed out from RAILER ahead of this step. This makes for a quick reference in completing this data)

6. After all points and attribute data has been added, save the calibration shapefile edits.

Note: It helps to save all files in a common folder, such as C:\RAILER.GIS\McCoy.

Converting the Railroad shapefile to a coverage.

1. Conversion tools, to coverage, feature class to coverage.
2. Linear Referencing Tools, create routes

Calibrating the route coverage

1. Go to ArcToolbox, choose linear referencing tools, "Calibrate Routes" On the Calibrate Routes box, choose the RR Centerline shapefile for the input route feature. Choose the calibration shapefile as the input point feature.
2. Enter additional fields to specify the route name field (track name) and measure field (station).
3. Click OK and the coverage will be calibrated.

These steps will result in a rail route coverage that can be linked to tables in the RAILER database to spatially display track information.