

# Train Tools® Software

**KAM Industries  
Hillsboro Or.**

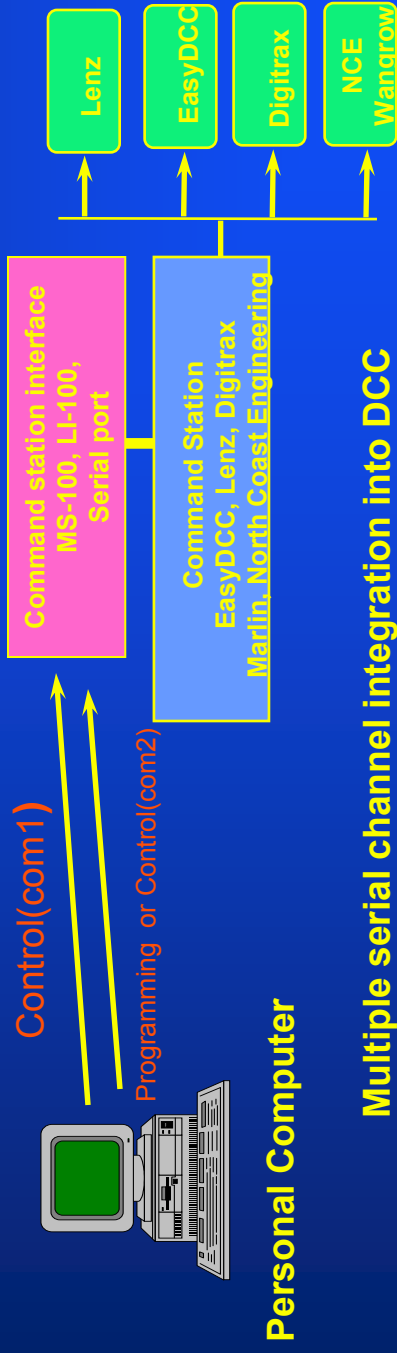


# Train Tools®

- **Train Tools® is a product family**
  - Products include
    - » **Engine Commander®**
    - » **Computer Dispatcher® Lite**
    - » **Computer Dispatcher® Pro (Spring 2000)**
  - **All products use the proposed NMRA API programming interface**
    - » **KAMs Train Server® interface**
- **Product sold in separate packages**



- **NMRA API Compatible**
- **Implements the proposed NMRA API.**
- **Integrates 1 - 10 command stations**
  - Uses KAMs patent pending technology
- **User extensible with Visual Basic, MS Java and C++**



Personal Computer

Multiple serial channel integration into DCC

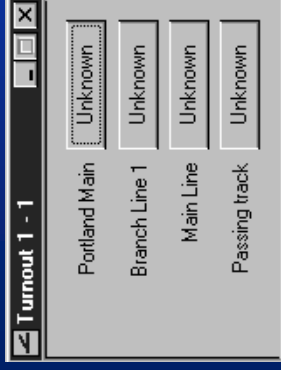
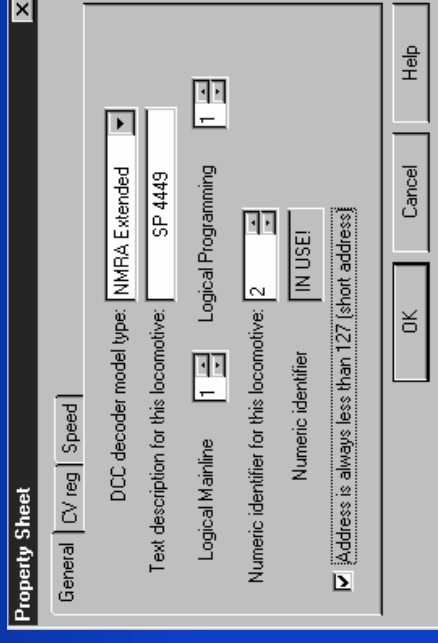
# Engine Commander <sup>TM</sup> 2

- **Supports multiple DCC vendors**
  - Digitrax - LocoNet MS-100 adapter
  - EasyDCC - Computer Interface
  - LENZ - Digital Plus LI-100
  - NCE Corp – Power House series
  - Marklin - 6050/6023
  - NMRA - propose serial specification
  - Wangrow - System One
  - Zimo Ltd.



# Engine Commander®

- **Built on a modular philosophy**
  - Implements all of the API's
  - Simple interface, reduce complexity of task
    - » An accessory through switches..
    - » A throttle run trains..
    - » A sensor displays state



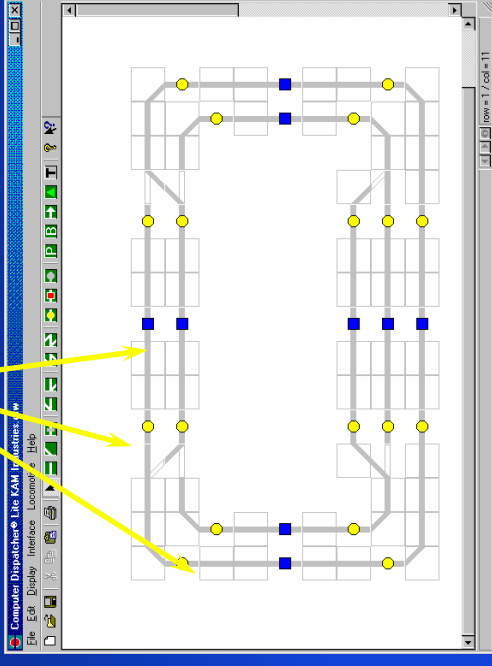
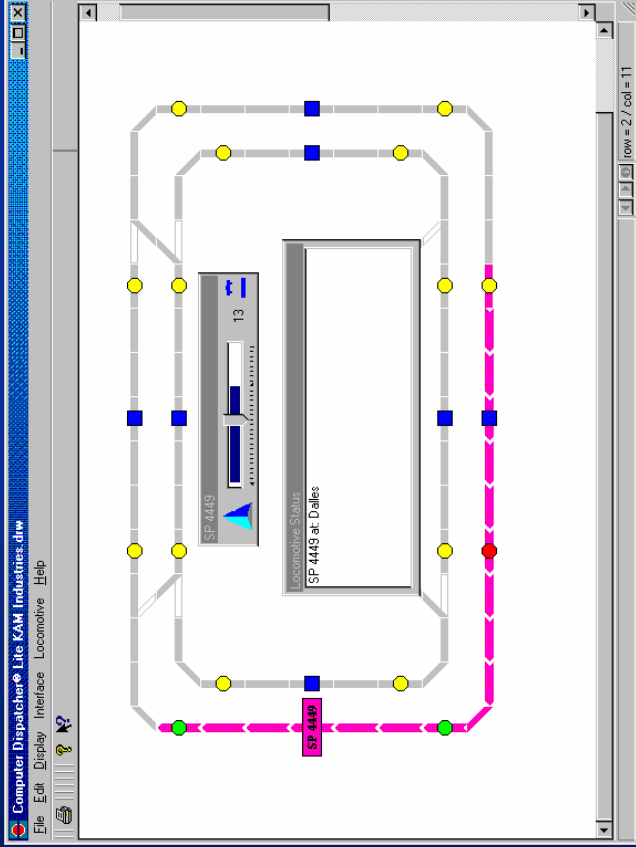
- **All applications can run at the same time**



# Computer Dispatcher® Lite

- Development of a non prototype application for the consumer....

Switches and sensors

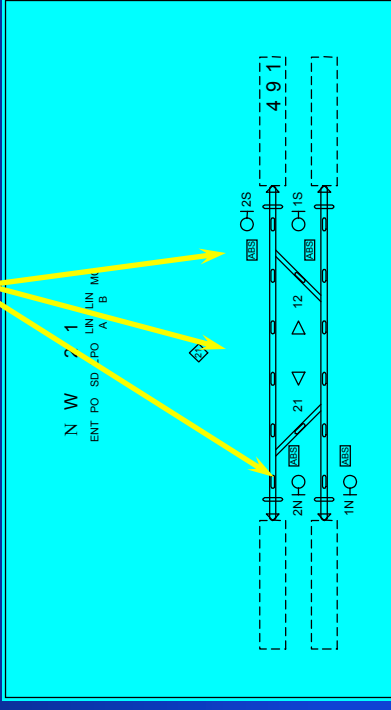
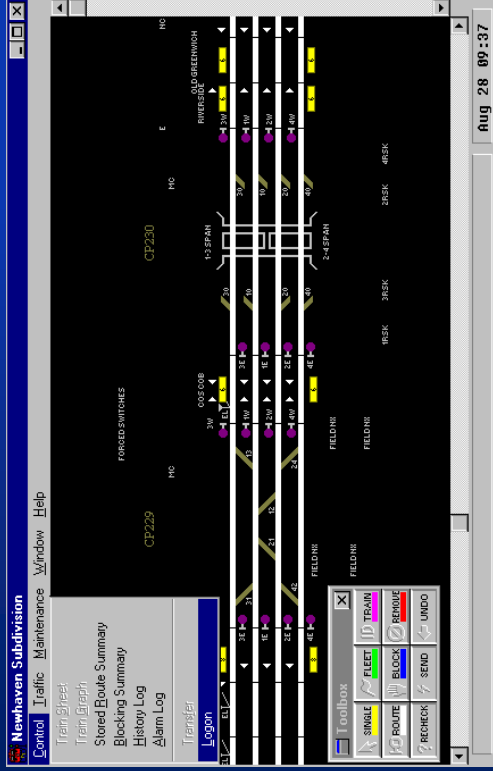


Computer Dispatcher® Lite  
active elements

CTC panel view in Computer Dispatcher® Lite  
with automatic block operation

# Computer Dispatcher® Pro<sup>1</sup>

- Prototype control.. operate like a real railroad



Computer Dispatcher® Pro  
model view of an active element  
with full entry/exit (route) control

CTC Panel view in Computer Dispatcher® Pro  
in use at BNSF, GTC and NS

1. Available in 1H' 2000

# KAM's philosophy

- **Computer monitored**
  - the computer is a tool of the modeler
  - the computer is used to manage events
- **You pick the type of control**
  - Manual
  - Non prototype
  - Prototype operation!

**Train Tools® are the tools for computer based railroad**



# PC hardware requirements

## If your PC runs Windows<sup>1</sup> then you can run Train Tools<sup>®</sup> software

### Supports

- Most computer interface
- Simultaneous command stations
- Proposed NMRA application interface
- Networked clients via TCP/IP and DCOM



# Network support

- **Distributed network support**
  - **Multiple client computers**
  - **Multiple command stations**



## Easy movement between divisions



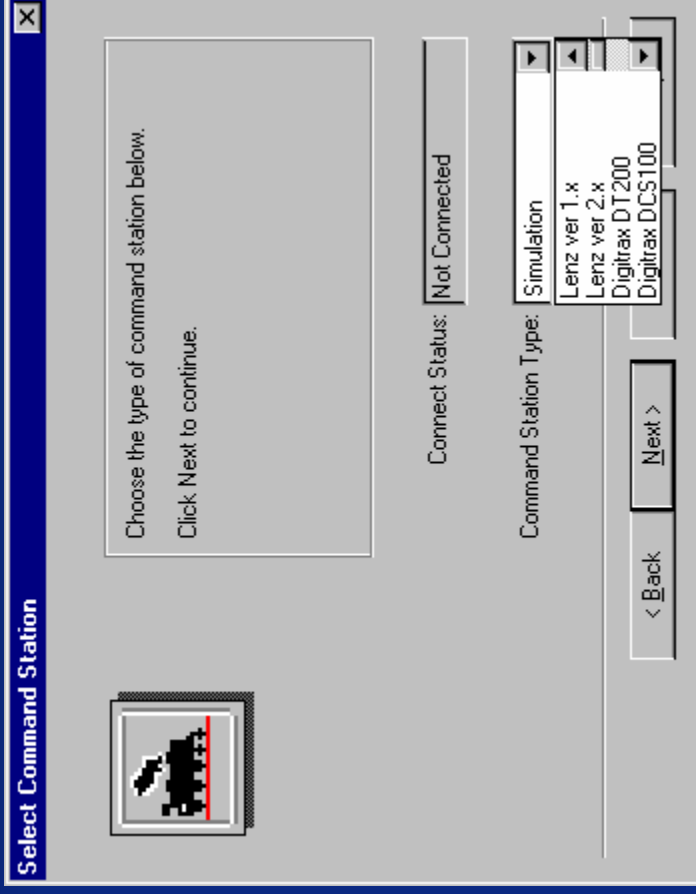
# Configurable decoders

**Easy to use decoder wizards!  
track layout wizards!**

**You decide how to set up your  
locomotive!**



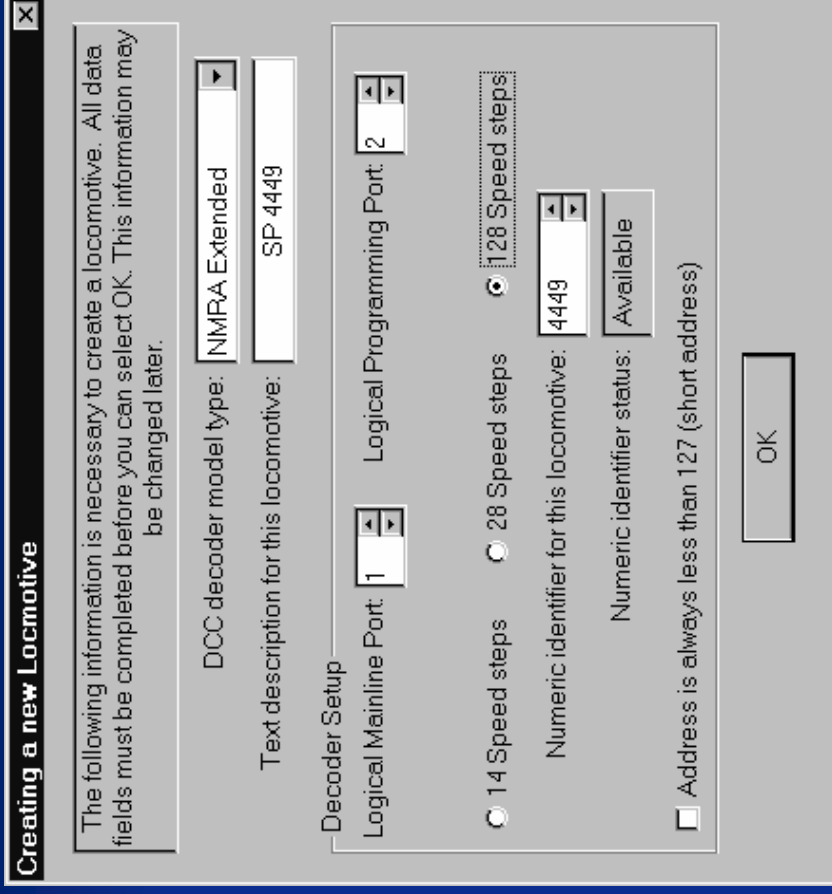
# Fully configurable



## Select desired command station..



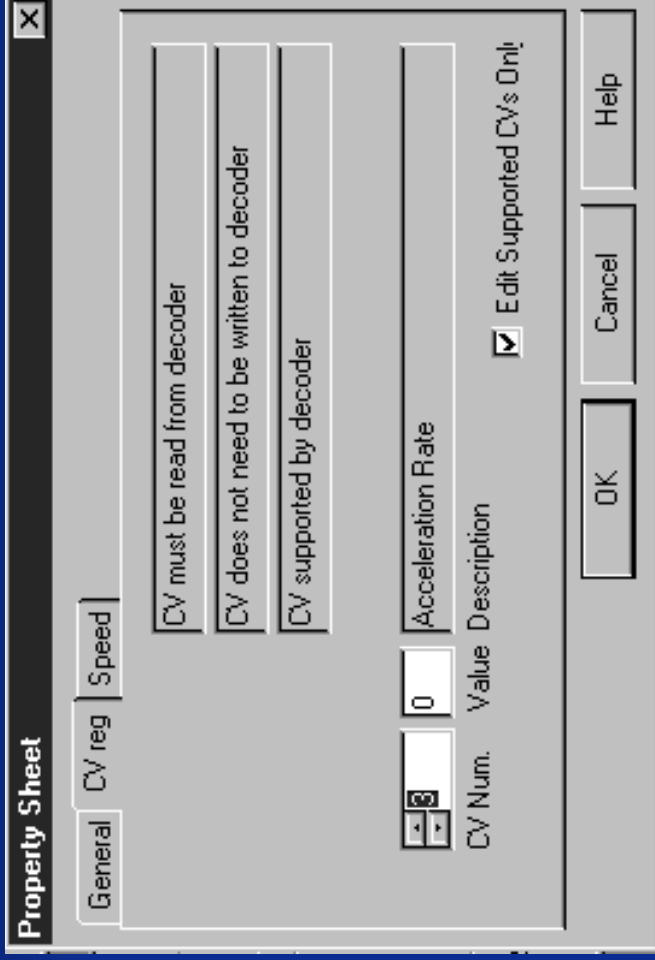
# Set up mobile decoders!



## Download CV's from locomotive



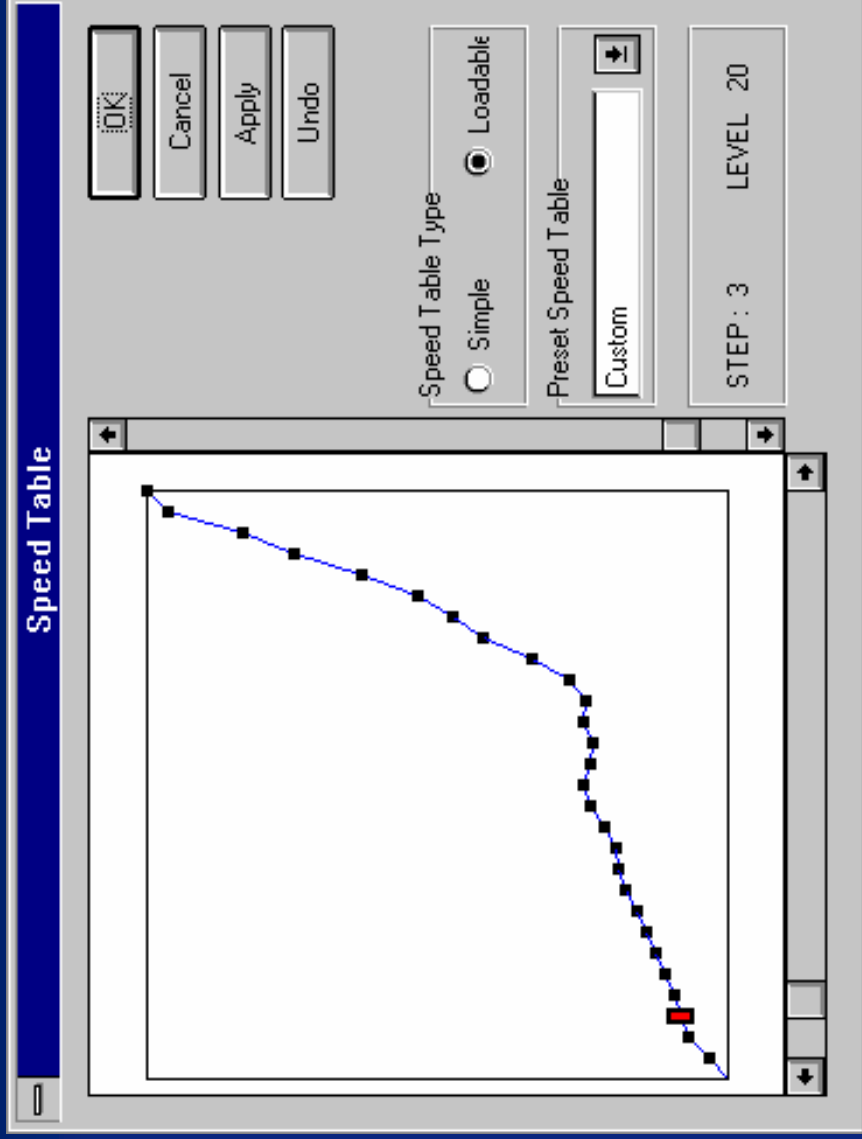
# Complete CV access



## CV's displayed for easy modifications



# Full speed table support



You define the speed table!



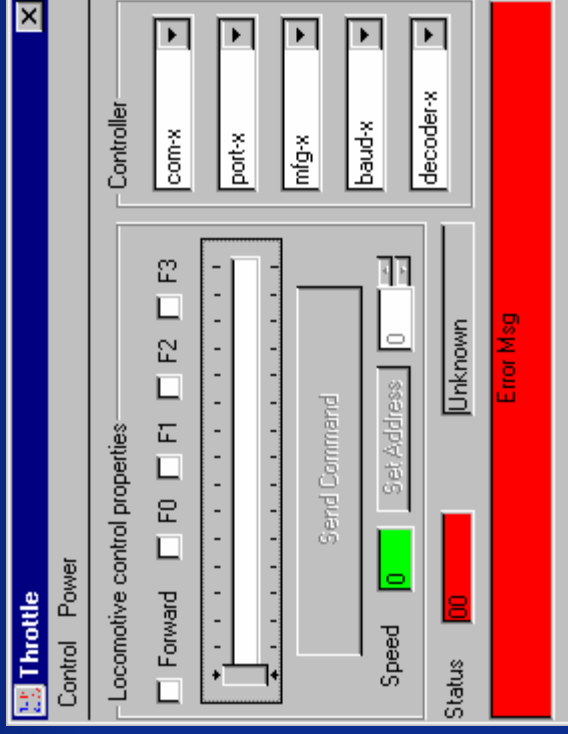
# Programming language?

- Can the software be extended?
  - API extensions?
  - Visual Basic interface?
  - Other languages C++, Java?



- Yes!
  - You can write your own programs!

# Visual Basic example



Easy to make your own software!



# Visual Basic 6 (cont.)

- Step 1: add the object reference

This is the key for all programming languages... create an object reference

```

' This first command adds the reference to the TrainTools Interface object
Dim EngCmd As New EngComIfc
'
' Engine Commander uses the term Ports, Devices and Controllers
' Ports -> These are logical ids where Decoders are assigned to. Train Tools
' Interface supports a limited number of logical ports. You can
' also think of ports as mapping to a command station type. This
' allows you to move decoders between command station without
' losing any information about the decoder
'
' Devices -> These are communications channels configured in your computer.
' You may have a single device (com1) or multiple devices
' (COM 1 - COM8, LPT1, Other). You are required to map a port to
' a device to access a command station. Devices start from
' ID 0 -> max id (FYI; devices do not necessarily have to be
' serial channel. Always check the name of the device before you use
' it as well as the maximum number of devices supported.
' The Command
' EngCmd.KamPortGetMaxPhysical(lMaxPhysical, lSerial, lParallel)
' provides means that... lMaxPhysical = lSerial + lParallel + lOther
'
' Controller - These are command the command station like LENZ, Digitrax
' Northcoast, EasyDCC, marklin... It is recommend that
' you check the command station ID before you use it.
'
' Errors - All commands return an error status. If the error value is
' non zero, then the other return arguments are invalid. In
' general, non zero errors means command was not executed. To
' get the error message, you need to call KamMiscErrorMessage
' and supply the error number
'
' To Operate your layout you will need to perform a mapping between

```



# Visual Basic 6 (cont.)

- Step 2: add the control language

```

|*****|
| Send Command
| Note:
| Load the state of the decoder first, then send the command
|*****|
Private Sub Command_Click()
'Send the command from the interface to the command station, use the engineObject
Dim iError, iSpeed As Integer
If Not Connect.Enabled Then
' TrainTools interface is a caching interface. This means that you need to set
' the CV's or other operations first; then execute the command.
iSpeed = Speed.Text
iError = EngCmd.DccEngSetFunction(lEngineObject, 0, F0.Value)
iError = EngCmd.DccEngSetFunction(lEngineObject, 1, F1.Value)
iError = EngCmd.DccEngSetFunction(lEngineObject, 2, F2.Value)
iError = EngCmd.DccEngSetFunction(lEngineObject, 3, F3.Value)
iError = EngCmd.DccEngSetSpeed(lEngineObject, iSpeed, Direction.Value)
If iError = 0 Then iError = EngCmd.DccCmdCommand(lEngineObject)
SetError (iError)
End If
End Sub

```

With KAM products you can build application like  
**Engine Commander® or Computer Dispatcher®**  
**software**



# New products in 2000

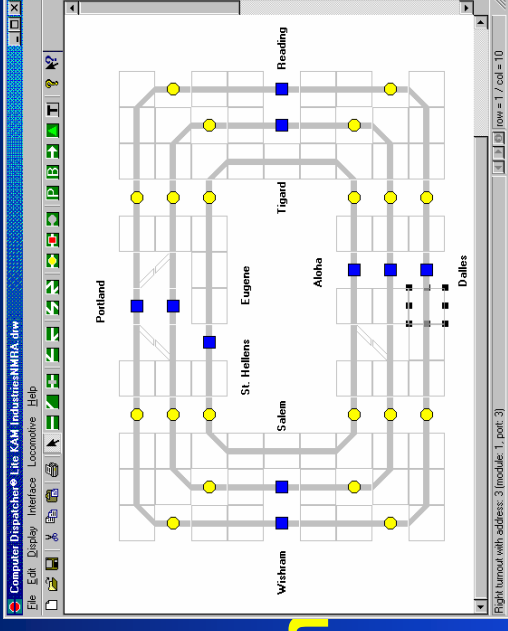
- **Computer Dispatcher® Pro..**  
provides full prototype operation
  - Product is licensed from Train Tracks Inc. TDPPro
  - Runs on 20 Class 1 railroads world wide
  - Integrated with Train Server® technology
- **Train conferencing server on line**  
for internet dispatching.

Why play with toys when you  
can use the prototype<sup>ISM</sup>



# KAM product family

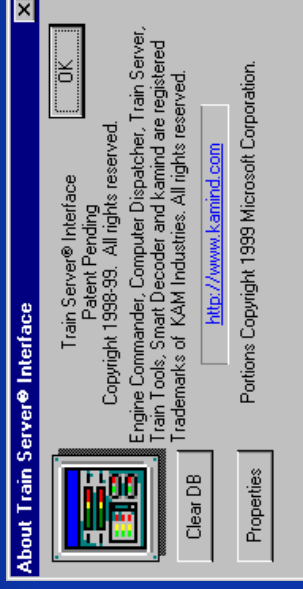
- **Manual operation**
  - Engine Commander® software
- **Non prototype operation**
  - Computer Dispatcher® Lite
- **Prototype Operation**
  - Computer Dispatcher® Pro (available in 2000)
  - In use at BNSF, NS, GTC



**With KAMs products, you have a choice!  
Pick the product that solves your problem**

# Train Server® technology

- Train Server® technology...
  - Supports the proposed NMRA programming Interface
  - Implements KAMs patent pending technology
  - Provides a universal interface across all command stations
  - One or more patent pending

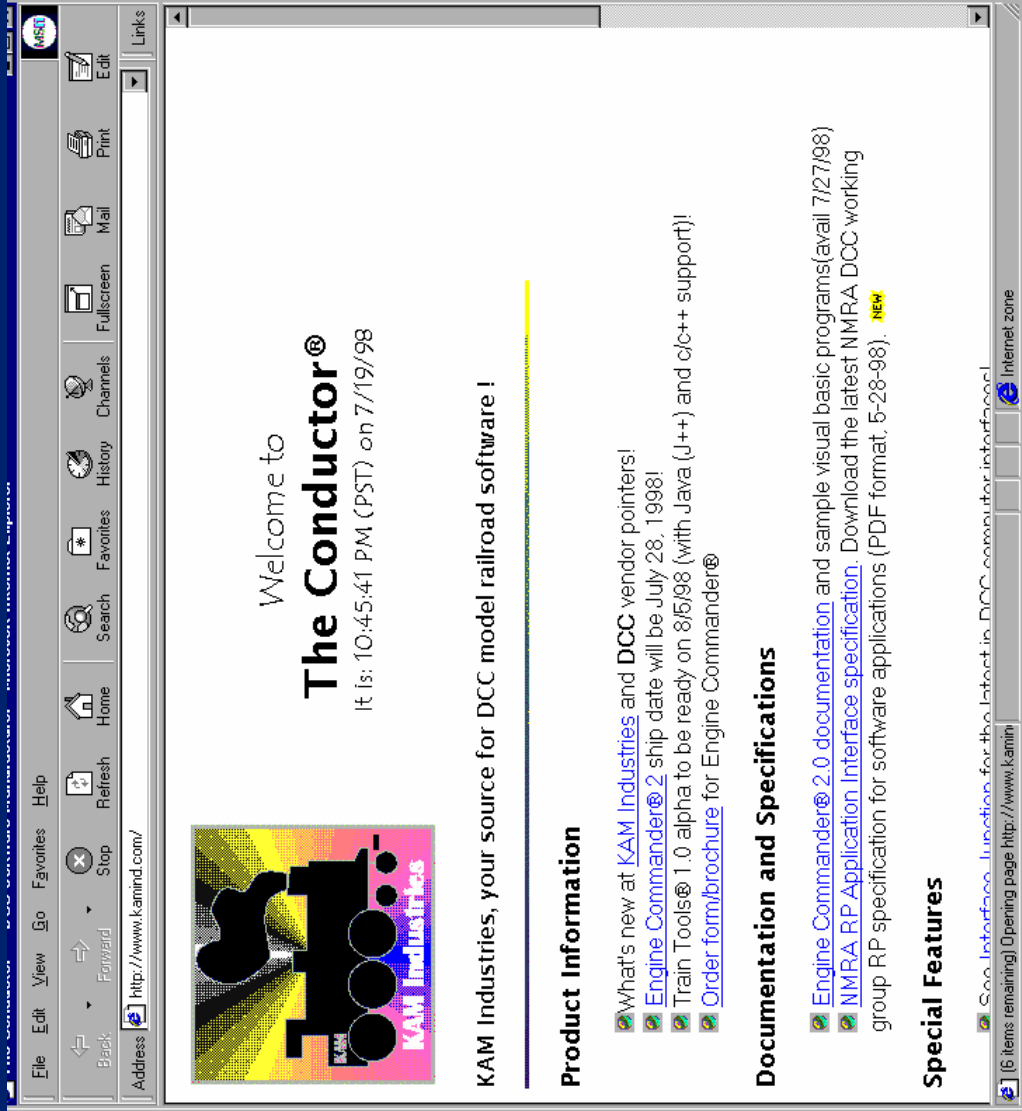


# How do I get support?

- **What about updates?**
  - Where can I get speed tables?
  - Where can I find new decoders?
  - Where can I find samples applications?
  - Where can I exchange layout interchange information?



<http://www.kamind.com>



# Thank you for visiting KAM

