

present, we are loading containers with grain products without taking them off the flatcars.

AUTOMATIC INVENTORY SYSTEM  
AT THE  
SP INTERMODAL CONTAINER TRANSFER FACILITY  
BY  
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In August, 1986, In-Terminal Services was chosen as the contractor by the Southern Pacific to operate the newly created Intermodal Container Transfer Facility (ICTF) in Long Beach, California. This modern, fully automated, state of the art facility was built by the SP in conjunction with the Ports of Long Beach and Los Angeles in response to the growing needs of their many international customers. The ICTF is the largest rail container facility in the world.

As this was a totally new and untested facility in almost all operational aspects, many challenges arose in the first two years of operations, not the least of which was inventory control. To illustrate the magnitude of this challenge, consider the following factors. The ICTF currently operates on approximately 230 acres, has 5 working tracks each about 1 mile in length, has 2,300 numbered parking slots, handles 36 double stack trains per week (varying from 6 to 28 cars) and 42 conventional trains per week also of varying sizes, does in excess of 360,000 lifts annually and will have an average of 2,500 containers on chassis and 4,000 bare chassis in the yard at any given time. Ownership of these containers belong to many varied customers utilizing the ICTF.

The dynamic parking scheme of the ICTF was designed to be operated with a real time computerized inventory system, conceived by the SP to utilize their existing TOPS/TCC systems integrated with slot monitors and a mobile inventory system.

There are several key elements that combine to make this a highly effective and efficient operation. First, the drivers delivering the containers or picking them up, must ensure that the container and chassis numbers they give the pre-checker are correct and that they park their container in the assigned parking slot.

The second, is our pre-check clerk working with the slot monitor, communicates directly with the driver and must ensure proper data input as this drives the slot assignment by the slot monitor. The slot monitor maintains a real time inventory of available parking slots. A daily plan is laid out based on the day's projection as to what destinations and/or blocks will be loaded on which tracks. The slot monitor is then programmed with this information, so that when a container comes in for a particular destination, it will provide the pre-check clerk with the next available slot in the area designated for that destination.

The third element is the mobile inventory system. With all elements meshing, the ICTF has the most state of the art, real time inventory system found in today's rail industry. The key to maintaining this real time inventory is the data entry of inventory movement by yard hostling personnel through the use of mobile data terminals.

At the ICTF, all hostling tractors and yard check vehicles are equipped with mobile data terminals. These mobile data terminals (MDT's) are radio linked to a control unit located in the ICTF tower. Data is sent via micro-wave to the central computer located at SP's headquarters in San Francisco.

The need for accurate inventories is critical because:

- Reporting inventory with MDT's results in an accurate inventory.
- Reporting the inventory provides management with a tool to gauge ramp personnel activity and productivity.
- Inventory moves reported via MDT input updates a real time visual monitor used by the ramp manager to monitor hostler activity.

All inventory moves are recorded and stored in a file that provides a historical record to monitor hostler productivity.

The ramp manager is responsible for coordinating all the activity and ensuring that the plan is carried out. He provides the direction and computer input for the ramp crews.

With all elements and systems now functioning we feel that the SP's terminal inventory system at the ICTF sets the industry standards for maintaining a real time inventory and a managerial resource.

#### SEMI-AUTOMATED CONTAINER/TRAILER CRANES

BY

JIM RALSTON

Provincial Crane Inc.

In order to handle today's cargo at a competitive cost and in good time, new ways of handling the container had to be found, not only in the method of handling the container/trailer itself, but in utilizing the available yard area to the maximum efficiency.

The use of automated machines have been the mainstay of the auto industry, and only in the last 10 years has the automated function been considered in the Intermodal Facility. Automation involves the automatically controlling the operation of an apparatus or system powered by electricity.

What does automation do for the Intermodal Terminal?