Bill Neale added purpose to his HO layout's operating sessions by using plastic sleeves, computer printed labels, and waybills to upgrade his car forwarding system. The large letters on the file match the town codes printed on the waybills.

Plastic pockets improve
waybill operation

An update for a popular manual car card and waybill system

By Bill Neale • Photos by Scott Kremer

O ver the years, model railroaders have used a variety of systems to provide structure and purpose for the movement of cars on their railroads. Every prototype freight car moves for a reason, beginning with an empty car heading to a location where it's loaded. The car then travels to another destination where its load is delivered. Once it's unloaded, the car's cycle begins again.

During their travels, freight cars may be switched numerous times as they're classified, cleaned, inspected, partially unloaded and reloaded, repaired, and weighed. Tracing the movements of an individual freight car can be difficult, but we need to only simulate part of this complexity to generate traffic for our model railroads. Our models seldom carry anything, but we still want to simulate realistic operation.

Car-card-and-waybill basics

The original Doug Smith car card system was published in the December 1961 *Model Railroader*, and it's still a viable and popular system. His basic procedures have evolved somewhat, but Doug's original concept remains valid.

This system uses a car card to represent each car on the railroad. At a minimum, the car card has the reporting marks (ownership initials and number)
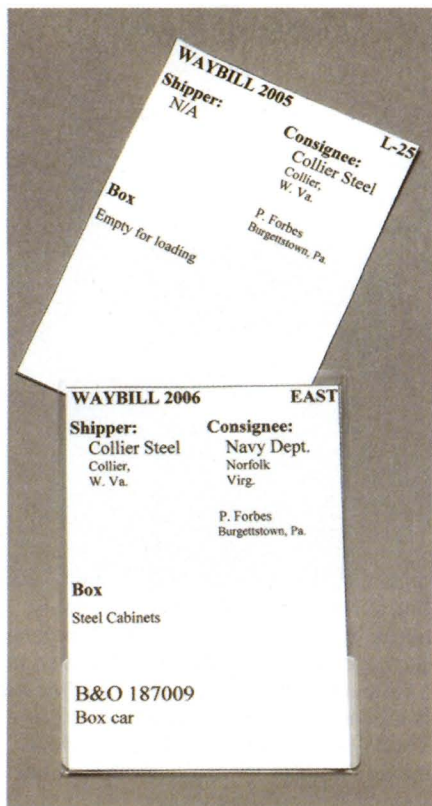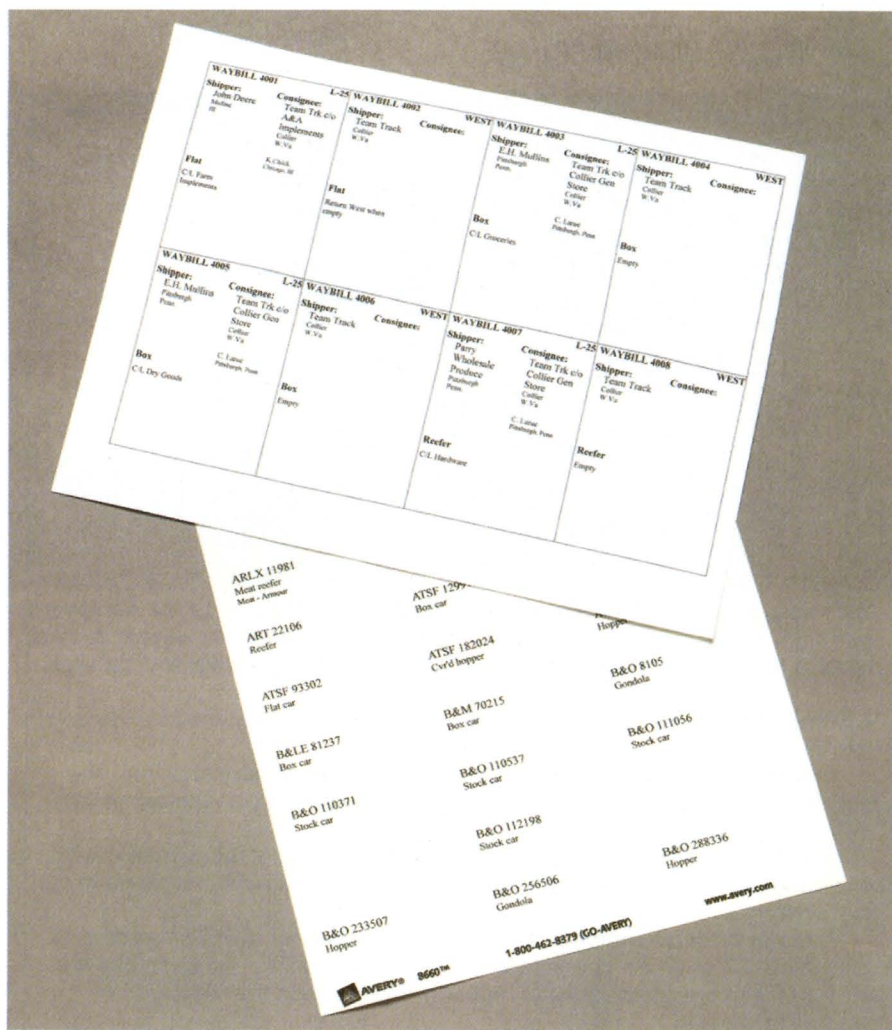
Fig. 1 Car pockets and waybills. A printed label turns a plastic baseball card sleeve into a flexible car pocket that can easily hold a handful of waybills. Several single-sided waybills can be used to route the matching freight car to a variety of destinations on the layout or into a staging yard.

Fig. 2 Gang printing. Bill used his computer to typeset and print sheets of eight waybill cards (top) and 30 reporting mark labels (bottom) for the car pockets. The exact format of these items isn't important, but they do need to be uniform.

and car type (boxcar, gondola, and so on). Some modelers expand this information with car type codes, commodity restrictions, specific car assignments, or a picture of the car. A few modelers also keep a maintenance record on the back of the card.

These car cards include a pocket to hold a smaller waybill card that provides information on the car's next destination. This pocket can be made by folding the car card and taping the edges, or by taping a clear plastic window over part of the car card. The waybill inserted into the pocket lists the car's load, destination, and routing information. The combined car card and waybill determines where each car on the railroad will travel.

Making car cards with pockets for all the cars on my HO scale Pennsylvania RR looked like a big task. I also disliked handling train-size packets of car cards with waybills sticking out of one end. These stacks tend to be much thicker at the end with the multiple layers of car cards and waybills, making the pile easy to mishandle or drop. I started to look for a better alternative.

Baseball cards to the rescue

Along the way, I realized that I could update Doug Smith's car card system by replacing his original 3" x 5" car card with a labeled, clear plastic pocket that would hold the 2½" x 3" waybill inserts. I began searching for a source of economical, easy-to-obtain, commercial card holders that would withstand the considerable handling they receive.

I looked at a variety of clear plastic pockets used to hold all sorts of sales tags, business cards, and photos that would work. But all of them had minor drawbacks or high costs.

Since I was starting from scratch, I decided to go down a different path and found several companies that supplied clear plastic sleeves and boxes for baseball card collectors. Each baseball card is 2½" x 3½", which is just about a perfect size for waybills. These protective sleeves are made of thin polypropolene, a tough, flexible plastic, with three sealed edges and overall outside measurements of 2⅝" x 3⅝". See **fig. 1**.

Several manufacturers sell sheets of factory-cut clear computer labels that measure 2⅝" x 1". This size just fits across the baseball card sleeve, and the 1" height is more than enough space to print a legible car description, car usage information, and even a picture of the car if desired. I prefer to use the clear plastic labels (Avery no. 5660) for this rather than white paper labels because they're more durable.

I attached a printed label on the outside of a sleeve to create what I call a "car pocket." Then, I insert one or more waybills into each car pocket.

I had listed my freight car roster on a computer spreadsheet, sorted by reporting marks, so I directed it to the printer as a series of labels, **fig. 2**, using my computer's mail-merge functions to print one label per car.

When I applied the labels to the car pockets, I kept everything in the same order as I printed them by road and car number. That made it easier to match the pockets to the cars on the layout

Waybill system set-up
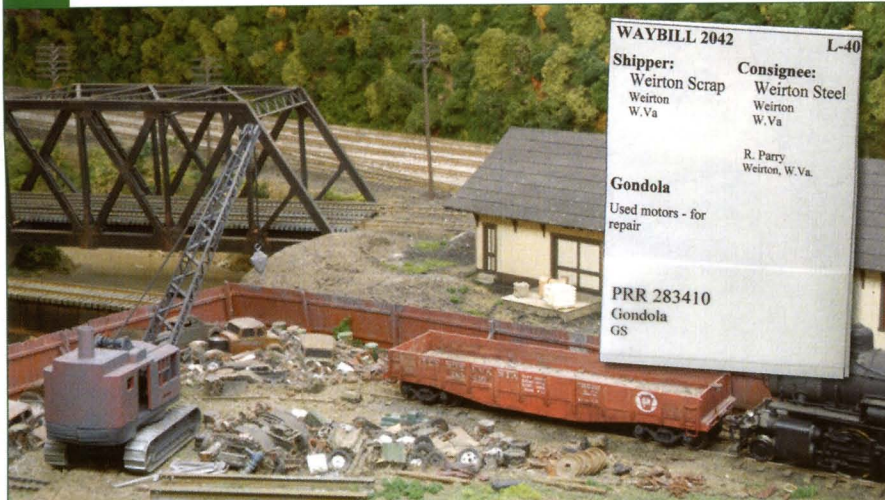
Bill's upgraded car forwarding system routes this gondola to the scrapyard and then sends it on its way according to the routing on the waybill. A clear label at the bottom of the card pocket lists the reporting marks and car type.

Getting started with waybills is mostly a matter of breaking the process down into six steps:

1. Write the waybills one town at a time and one industry at a time. The majority of my car routings are from staging to an industry on the layout, or from an industry to staging.

2. Print and trim the waybills. After making sure all of the printed waybill sheets were stacked the same, I took them to a local Kinko's to have them cut to a uniform size.

3. Make through waybills. I made a large number of waybills routed with only the EAST or WEST codes to simulate through traffic. These waybills are for trains with blocks of cars that regularly travel across the railroad from staging to staging.

4. Build waybill files. I made my own town files from styrene, as in **fig 4.**

5. Print the car labels and attach them to the car sleeves.

6. Distribute the waybills town-by-town, putting appropriate destinations into the car pockets in all the bill boxes.

Run operating sessions and make adjustments as required. – *B.N.*

Fig. 3 Train pack. As each consist is made up, the outbound waybill pockets are stacked in sequence and placed in a resealable train pack. The top pocket is labeled with the assigned locomotive's number, class, and type while its insert displays the train identification.

Waybill preparation

My individual waybills fit into the car pockets and display information on the car's future destinations. Each of my waybills has the shipper or point of origin printed on the left side, and the consignee or destination on the right side. I used Microsoft's Excel and mail-merge functions to create these cards. Each waybill card had to be two Excel rows wide to print properly, but following my format isn't important as long as the necessary data is there.

My waybills have a four-digit code printed in the upper right corner that indicates a town or staged destination. Cars routed to the end staging yards are coded EAST or WEST on their waybills. Each town on the layout has an "L-00" code (L for local and a number). The first town is L-10, the second is L-20 and so on. These codes are provided to simplify the switching.

I printed my waybills on cardstock, but I could have used a heavy paper. The baseball card sleeves keep the waybills clean, so using the cardstock isn't necessary, but I like the feel of the heavier paper as I handle the waybills.

Materials

The baseball card sleeves cost about a penny each, but the labels are more expensive. However, these are one-time costs. I also found the same sources that market the card sleeves also sell "team bags." These are resealable bags meant to hold 30 to 40 baseball cards,

during the initial setup. Note that the initial setup of a card system can be a bit daunting, so having the pockets in some sort of order makes the process easier.

System flexibility

I use single-sided waybills with my car pockets, **fig. 2,** in contrast to Doug's system that requires operators to flip the waybill over or turn it upside down. Whenever one of my cars reaches the destination on its visible waybill, that waybill is pulled and slipped into the back of the stack in the pocket.
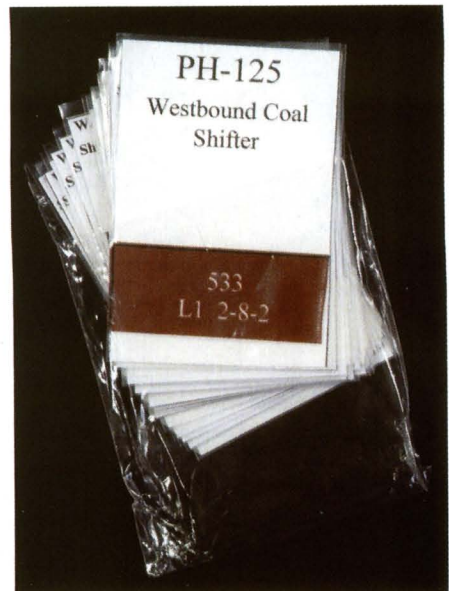
Of course, you can always pull the waybill out of the pocket and start a new cycle with a different waybill. This flexibility allows me to use any number of moves in a waybill stack, within the limits of the car pocket's capacity.

To simulate a PRR operating practice, I needed some three-cycle waybills.

On double-track lines, each main track had an assigned direction of travel. The local freights would work the spurs on only one side of the main line, while another train in the opposite direction serviced the spurs on the other side.

By using three waybills in the pocket, I get three movement cycles that initially route the empty car to a shipper. The second bill takes the loaded car "off-line" into staging at one end of the railroad. Then the third waybill brings the car back on line as an empty returning in the opposite direction so it can begin another cycle.

To provide variety, I have some cars that move with only a single waybill, and I change the bills after the car arrives in staging. I also have cars that travel with five waybills in the pocket. However, each operator sees only the top destination, so the following trips remain out of sight in the stack.

but they're also great for holding all the car cards in a train pack.

The first item in each train pack is usually an engine pocket, **fig. 3,** with a card listing the train assignment instead of a waybill. This combination identifies the train and specific engine number so the operator can easily make his DCC throttle assignment.

Baseball card collectors use a variety of other boxes and plastic organizers to store their collections. Many of these items are handy for model railroad purposes. I use a storage box sized for 200 cards to hold any waybills that aren't in use.

I didn't find any commercially available file boxes to mount on the side of the layout for the town files, so I made them myself. Each compartment in the file boxes is 2¾" square and ½" deep with a clear front. See **fig. 4.** This allows the waybills to stick up enough for easy handling. Since the waybills and pockets are slim, the ½" depth holds plenty of them. I labeled each of these boxes with printed SET OUT, HOLD, OFF SPOT, or PICK UP labels on the same label stock used for the car pockets, as seen in the photo on page 62.

Baseball card material sources

A Google search of "baseball cards" will deliver about 7,000,000 potential sources of baseball card collecting supplies. Take your pick.

I have purchased useful items from BCW Supplies (www.bcwsupplies.com) and the Baseball Card Supply Shop (baseballcardshop.net/toplososlsir.html).

An improved concept

The continuing popularity of Doug Smith's car card and waybill system has brought many new modelers into the realm of realistic model railroad operations. Much of this popularity comes from the system's easy setup and operating procedures.

My upgraded version makes use of my personal computer to eliminate most of the system's tedious initial setup work and streamline the waybill preparation. The flexible plastic pockets are much sturdier and keep the waybills clean. Since the car pocket holds multiple waybills, the paperwork is reduced to simply moving the top waybill to the back of the pile as each destination is reached. **MR**

Bill Neale has been building his 1950s-era 22 x 25-foot Pennsylvania RR Panhandle Division for more than 20 years. He and his wife, Terry, have two grown children, Jenny and Carrie. They reside in suburban Detroit.

Car forwarding systems

There are six popular car forwarding systems that I considered as I began developing a system for my HO scale Pennsylvania RR. Each of these methods has its own strengths and weaknesses, which I've listed below:

1. Hand-written switch lists
Pros: Printed forms have a realistic appearance that's often based on prototype documents.

Cons: Intensive time-consuming clerical work. Arriving cars don't have predetermined routing unless the lists are used with a waybill system.

2. One-for-one car swaps
Pros: Quick setup and insensitive to individual car reporting marks.

Cons: Realism suffers as the crew decides which specific cars to move. Cars arrive without specific destinations so classification is a problem.

3. Computer-generated switch lists
Pros: Almost as realistic as hand-written switch lists, and may be quickly generated as needed. Most prototype railroads now use them.

Cons: Preprinted switch lists are difficult to correct. The inclusion of any yard work adds substantially to the complexity of a computer system.

4. Rooftop markers on cars
Pros: Easy setup and operation with minimal preparation time.

Cons: Unrealistic tacks or markers sit on top of every car.

5. Car cards with serial routes
Pros: Initial setup takes time, but then requires few adjustments between operating sessions.

Cons: Realism suffers when the operators can see the car's future moves, and must advance or mark a position indicator during the session. It's also difficult to re-route cars to fill a simulated shipper demand.

6. Car cards and waybills
Pros: A realistic simulation of prototype paperwork without the need to write switch lists.

Cons: Some clerical work is necessary and initial setup is more difficult. Waybills may have to be turned or moved between operating sessions to properly display each car's next destination.

I've operated on other layouts and experimented with many of these systems over the years, and the two-part car-card-and-waybill system remains my favorite. – B.N.
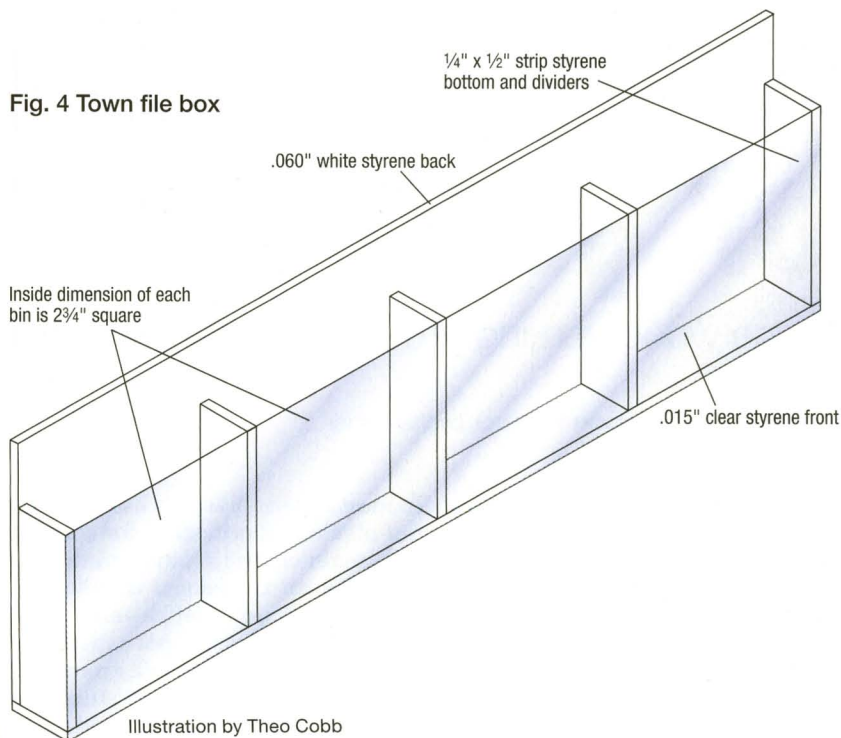

Fig. 4 Town file box

¼" x ½" strip styrene bottom and dividers

.060" white styrene back

Inside dimension of each bin is 2¾" square

.015" clear styrene front

Illustration by Theo Cobb