

Interchange Newsletter

Vol. 1.1

Tips, tricks, examples of how to use the Interchange software

From The Programmer:

I want to welcome all of you to the first issue of the Interchange Newsletter. The purpose of this newsletter is to help you get the most functionality out of my program, Interchange, that you can for your layout.

Interchange took a very long time to get out, much longer than I wanted. It was by far the most complicated program I've written, and I've written a lot. The main difference between this application and the rest I've done is the fundamental purpose of the database. With most business software the database is generally used to store information. Records are added on a continuous basis but rarely is that information changed.

Interchange is the exact opposite. Once the information is in the system there will be few new records added by the user. What is significantly different with Interchange is many records are undergoing continuous change as trains are run. Rolling stock locations, trains, locomotives, all have their records in constant change every time you run and terminate a train.

This coupled with the wide range of functionality and ability made debugging this program a nightmare many times. Often conflicts and Catch 22's arose which had to be solved. But the end of testing appears to be near, if not so by the time you read this.

Good news after more than 5 years of waiting for many of you, often with frustration. That I apologize for, but I'm sure you will agree that once operational it was worth the wait.

In this issue I will look at some simple shipments you can set up, plus some review of new functionality that is not in the documentation (yet). Future issues will include more of getting more "sophisticated" (a.k.a. more complex) shipments. I also plan to have others in here explaining how they adapted Interchange to their own layouts.

Above all, I want to thank a number of people who tested Interchange, some for many years. Without them, their dedication, and different layout configuration that taxed the program, this would not have been possible. David Bond is first in the list, retired and living in Washington state, David is very familiar with software testing and has been through and systematic in his testing. Marshall Abrams gave Interchange quite the challenge with his operation system for his layout, he too has been here for several years. Others include James Hoefnagel in Europe, Martin Lansche, and Bruce Wilson.

Richard Wakefield

Program Features

Interchange is a very comprehensive program, that is, it does a lot of things. This means that it could also be very daunting, or even frightening to some users. Maybe even to the point that some would consider this program to be way too much for their little layout.

But do not despair. Yes, Interchange does a lot of things, some you may never use, but it also will handle any sized layout, and the ability to handle simple or complicated shipments.

This issue of the newsletter we will look a very simple shipment setups. That is, how one sets up simple shipments. However, there is a warning that comes with this. Interchange operates on the date method. That is, your layout will have a specific date period it operates on. The days must advance for this program to do its job. Sessions are irrelevant. You can run any number of trains in one “session” as you want, even running the same train on the same day. But because shipments are date determined once a shipment starts to move on a date it cannot move again on the same day. Thus if you fail to advance the date eventually no more cars will move.

You have three options to advance the date:

1. In step with real time. A new day in the real world is a new day on the layout. There are inherent risks with this system. If you fail to run any sessions every day then shipments will start to get backed up. A train that would normally take 10 cars may want to move 100 if you leave things for a week.
2. New date when the program fires up on a new day. That is, you can skip a week, and the next time you do run the program the date will automatically advance one day only. The draw back to this approach is that if you fail to run all the trains in that session or that day you will start to get a build up of cars wanting to be moved by trains you have yet to run.
3. Manually advance the date. This is the most flexible and controllable. You advance the date when you are ready to. Undoubtedly this will be the most popular method and one that is recommended for those not familiar with how this program works.

The other limiting factor for moving shipments is the commodities, what the cars actually ship. Each car can ship one primary commodity, plus any number of secondary commodities you choose. Shipments will also be of a commodity. Thus when a shipment is created you will be selecting a car type and commodity. This is then matched to the car when trying to fulfill the shipment.

It is recommended that at first you make just a few commodities. Things like Coal, Clean Lading, Petroleum, etc. Once you are comfortable with running trains like this, and want more realism, you can experiment with more complex commodities and the cars that ship them.

But there is more to this. Trains also can be tagged as to the commodity they can ship. The default setting is when ever a new commodity is added to the system all trains will be able to move such cars. You can change that in the New/Edit form in the program under the Trains tab. Double clicking the intersection of a commodity and a train will change the setting.

The last bit you need to know, so that you do not get frustrated that cars are not moving, is the frequency of shipments. There is a wide array of options for when shipments happen. Daily, day of week, random, day of month or one time. Within that shipments can be any season or all year.

You may want to start off with daily shipments but beware that if you create a lot of shipments that many cars will want to be moved. Maybe more than the train can handle. More on the frequency of shipments in another issue.

This brings us to the next important aspect of the program you must take care with. Train sizes. You have two options:

1. No size restrictions. The program will assign to the selected train all shipments it finds that satisfy the criteria from above. If you create too many shipments you run the risk of overwhelming the train. However, you have the option of sectioning the train if you wish. More on that in a future issue.
2. Adhering to the size of the train. If you set the maximum train size to 10 cars, that is all you will get on the train. However, if you have too many shipments, the cars not moved will still be assigned their shipments and want to move. Subsequent trains on the same route will solve that.

Adhering to car size also has a number of other problems, or more correctly, logical consequences. The system has broken each type of car movement. The fewest possible moves are:

- A. Car at a yard needs to be sent empty to an industry on the trains route so it can be filled
- B. Loaded car at industry needs to be sent back to yard for further delivery
- C. Loaded car at year needs to be delivered to destination industry
- D. Empty car needs to return to a yard

A train's consist will most likely include more than one of these types. The question will be, if the train is to adhere to car size, and more cars are available to move, which cars do not get moved? For example: the train size is 5 cars, but there are 6 waiting to move to be delivered. 3 are empties to be filled, 3 are loaded to be delivered. Which car gets left behind?

You have the ability to set the priority of this conflict. In the Options form, from the Administration form, you can set the order of shipments. Thus if you want all three loaded cars to take priority over the 3 empty cars, you can, or visa versa.

But there is more. Cars waiting on route to be picked up. If the first town has 2 cars to be picked up, but none to drop off, then those cars will not move. Only when a car is dropped at a town will there then be space for a car in that town, or subsequent towns, to be added as a pick up.

But that too is changeable. For any train you can set a Pick Up Factor. This will allow you to pick up cars on route regardless of if you have space or not. The range is from 0% of the train's capacity to 100%. Thus, for our above example, if you have a restriction of 5 cars, already on the train, no drop offs first town, if you set the Pick Up Factor to 50% those two cars at the first town will be able to be picked up anyway.

These are most of the things you may want to look for if you feel cars are not moving when you think they should. There is a log created during the train creation process. This will allow you to see what the program was doing, and why.

Setting up your layout for the first time

So now you have spend all this time getting you 500+ cars into the database, all the industries, and routes, and a fair number of shipments have been set up. Now what? You run a train and nothing happens, maybe.

First thing you need to be aware of is any new cars in the system will all be at the default yard. So when you first do this few of the cars will be in sync with your physical layout where you will have cars scattered all around. You have two options, either physically place all the cars in your default yard, not a likely desire, or you can update the locations of these cars in the database and seed those cars with shipments.

In the reports form there is a report that will print all cars alphabetically. Print this report and go around the layout and write where the cars are. Return to the program and in the administration form update each car's physical location. As you bring up the info for each car, you have the ability to seed that car with a shipment.

Important to note that you may want to stagger the pickup date of each car so that not all of them move at once.

Even with large layouts, this will not take as long as you might think; the average layout might take one to two hours. And this is a one-time effort.

TIPS:

Once you run a train, you do not have to be stuck with those cars. You can uncheck any car in the list to remove those cars from the train.

The order of the creation of trains in the program does not have to be the order in which they physically run. If it's possible for two trains to move the same cars, but you only want a specific train to do so, create that train first even through the other may physically run first.

Join the Yahoo group MRCDS where you can get feedback to questions and make comments with others who use this program.