CARD OPERATION FOR RAILWAY MODELLERS

I am what I would call myself a railway mudderler, We lived in Sydney until 1989 and the group that I was in were more interested in building exhibition layouts than in running trains in a prototypical manner. If we visited members layouts, we just operated trains.

After moving to Adelaide the groups focus was more on operation and all of the layouts operated trains to a timetable and used wagon cards to shunt trains. There were a number of layouts that were built and operated under the Ablo banner, known as the Adelaide Branchline Operators. The group developed a card operating system which I will describe later in the talk.

Card operation is a starting point for prototypical operation and begins to impart a sense of purpose to your layout, no matter how compact or large your layout is. Many modellers look down on layouts described as a small layout; so I will be using the term; compact layout. A layout designed to fit into a dimensionally small area.

If you get the chance to study prototype railway operation you will get the opportunity to develop your operation to more closely follow prototype practice. As the New South Wales Government Railways was the most closely aligned to British practice I will detail a few things from my local experience that should equate to the practices and procedures that would apply to British layouts.

The New South Wales Government Railways issued all operating staff with a number of books that were required reading and understanding. The first book was the Rules and Regulations that employees were required to know and carry out when operating locomotives, trains, signals, stations and working on the track.

The next book was the Working Time Table which was issued to Employees only and details passenger and goods train operation. There were special notes on stations, tables of train loads and running times as well as other information.

The General Appendix and Local Appendix contained additional operation for operating staff and would help modellers understand the workings of their prototype. If you are able to obtain some of these books applicable to your chosen prototype for the time period you are modelling then you will have access to a n extensive source of useful information. There are many books in the model press, such as **Railway Operation for the Railway Modeller by Bob Essery.**

INGLENOOK LAYOUTS

There are many clever examples of compact layouts in the British Press and many fine Inglenook layouts. By clever use of layout design, buildings and scenery some very fine models have been detailed.

These layouts can be built in a very small space and provide hours of shunting fun and challenges. Inglenook operation is governed by a set of cards; one for each wagon. Some builders put photographs of the particular wagon on each individual card. The operator draws a number of cards, and the challenge is to then marshall your train in the order of the cards as they are drawn. A good source of information can be found at:

https://www.carendt.com/micro-layout-design-gallery/

COMPACT LAYOUTS

My compact layout has been providing considerable enjoyment and operation challenges since it was built about eighteen months ago. The layout is based on New South Wales Government Railways practice and is designed to represent a break of gauge station in far western NSW where the NSW and Victorian Railways met. As the standard gauge and broad gauge models on the Australian market all run on HO track, the idea of dual gauge track was a problem to be avoided.

British modellers will be pleased to know that many fine examples of the products of Beyer Peacock, Dubs, North British and Vulcan Foundries ran in NSW.

As most of my operators are not familiar with NSW locomotives and rolling stock numbers and codes I set out a laminated card which lists them all to make it easier to identify what wagons and locomotives are being used.

As the layout is compact goods trains are limited to four, four wheel wagons plus a brake van. Passenger trains are limited to two passenger coaches. A sample of the simplified wagon card is shown in the next column.

The left hand side of the card lists the wagons on the train leaving the staging yard while the right hand side lists the wagons that the train will pick

YANGA 2, Locomotives & Rolling Stock			
X208, Yanga Yard Shunter. X207, Staging Yard Shunter			
4 Wheel oil tanker, carriage siding. Bogie Oil Tanker, oil unloading point. Coal load, Loco siding.			
Ampol Bitumen Tanker, oil unloading point			
Fettlers Instruction Car, Carraige Siding. HG Employee Van, Loco Siding			
Cattle and Sheep wagons to stock siding			
Steam Locomotives, 1223, 1919, 3038, 3142			
Diesel Locomotives, 4803, 848, 7003, 7320			
Rail Paybus, 11. CPH Railmotor, 12, 2 Car diesel set, 623			

PASSENGER STOCK		BRAKE VANS	
ACX, ACM	Branchline sleeper	SHG	Goods Brake
LFX	Dog Box coach	MHG	Goods Brake
HCX	Dog Box, Brake	PHG	Goods Brake
FR	2nd class coach	EHO	Passenger Brake
CR	Composite Coach		
HR	2nd class & brake		

Goods Rolling Stock			
S	4 Wheel open wagon	RU	4 Wheel Wheat
K	4 Wheel open wagon	BWH	Bogie Wheat
LCH	4 wheel coal hopper	CW	4 Wheel Cattle
LV	4 Wheel louvre van	BCW	Bogie cattle
ABV	4 Wheel louvre van	GSV	4 Wheel Sheep
SRC	4 Wheel Refrigerator Car		

STAGING YARD, TRAINS			
Programming Track		Spare stock	
Track 1		ARRIVAL ROAD	
Track 2		Goods Train 1	
Track 3		Goods Train 2	
Track 4		Passenger Road	
Track 5		Works train	
Track 6		2 Car Diesel Set	
Kickback Track		Locomotive Staging	

NSWGR 1	NSWGR 1
CW	S Tarpaulin
LV	SRC
S Wine Barrels	GSV
S	K Timber
MHG	MHG

NSWGR 2	NSWGR 2
GSV	CW
K	LV
S Sheet Iron	S Building sheets
S Timber	LCH
SHG	SHG

up from the station yard. This set of cards lists sixteen wagons that are in use for the goods trains.

One benefit of a compact layout is you can operate it with a small consist of locomotives and rolling stock. As most of us have more locos and rolling stock, you can swap them over quite easily Maybe Great Western and later British Railways.

The layout is operated to a sequence as shown on the operating card on the next page. As can be seen in the photograph a good variety of trains is available to operate.

TRAIN		No.	TRACK	DIRECTION	ENGINE	LOADING
NSWGR	VR					
	VR DERM			Down		
Mixed, Mail.		1 *	5	Down	30T	2, ACX, PHG.
		2	6	UP	623/723	
	VR DERM			UP		
Mixed		4 *	5	Up	30T	CR, LFX, HCX
Goods		3	3	Down	48	4, Brake Van
Goods		6	3	Up	48	4, Brake Van
Goods		5	2	Down	70	4, Brake Van
	VR DERM			Down		
Railmotor		7		Down	CPH 12	
Railmotor		8		Up	CPH 12	
	VR DERM			Up		
Goods		10	2	UP	70	4, Brake Van
Work Train *		9	5	Down	73	Work Train
Wheat Train *		12	5	UP	73	2 RU, BWH
Goods		11	3	Down	48	
Goods		14	3	UP	48	
Wheat Train *		13	5	Down	73	2 RU, BWH
Works train *		16	5	UP	73	
Goods		15	2	Down	70	4, Brake Van
Railcar		17	6	Down	623/723	
Railcar		18	6	Up	623/723	
Goods		20	2	UP	70	4, Brake Van
Goods		19	3	Down	73	4, Brake Van
Goods		22	3	UP	73	4, Brake Van
Goods		21	2	Down	48	4, Brake Van
Goods		24	2	Up	48	4, Brake Van
	VR DERM			Down		
Down Mixed		23		Down	30T	CR, LFX, 2, PHG.
Up Mixed		26		UP	30T	2, ACX, PHG.
	VR DERM			Up		
Goods		25 *	3	Down	70	4, Brake Van
Goods		28 *	3	Up	70	4, Brake Van
Railcar		27	6	Down	623/723	
						3.2.22
* Down Work Train, forms Up Wheat Train						
* Down Wheat Train forms Up Works Train						
1 Down Mixed, 28 Up Mixed, S oil drums, BP tanker, PHG, ACX						
4 Up Mixed, 25 Down Mixed, Bitumen Tanker, S, CR or LFX, PHG						

The operating sequence is shown above. All trains leaving the staging yard are UP trains and all trains returning to the staging yard are DOWN trains. The layout is operated with an NCE Powercab system with some locomotives and railcars fitted with sound chips.


THE ABLO CARD SYSTEM

The ABLO Card System uses a wagon card for each wagon on the layout. The system takes time to setup and requires some work between operating sessions. On some layouts there are also cards for locomotives, passenger coaches and brake vans.

On my South Australian layout I only use wagon cards. At each station there is a three section card box marked, **IN, HOLD and OUT** for the cards of

wagons at that station.

Each card details the wagon type, number, tare and length. Four wheel wagons are counted as one and bogie wagons as two. This assists the station operator to keep train lengths to the correct length to meet the operational restrictions on the layout such as the length of crossing loops, passing sidings platforms etc. A train equal to ten could be ten four wheel wagons or five bogie vehicles or a mixture of both.

Each wagon card has a clear pocket at the base of the card to hold a waybill style card that details what station the wagon is consigned to as well as customer details that the loading is for. This lets the station master know what siding to place the wagon in. If there is no waybill card then the wagon card displays the wording, **EMPTY.**
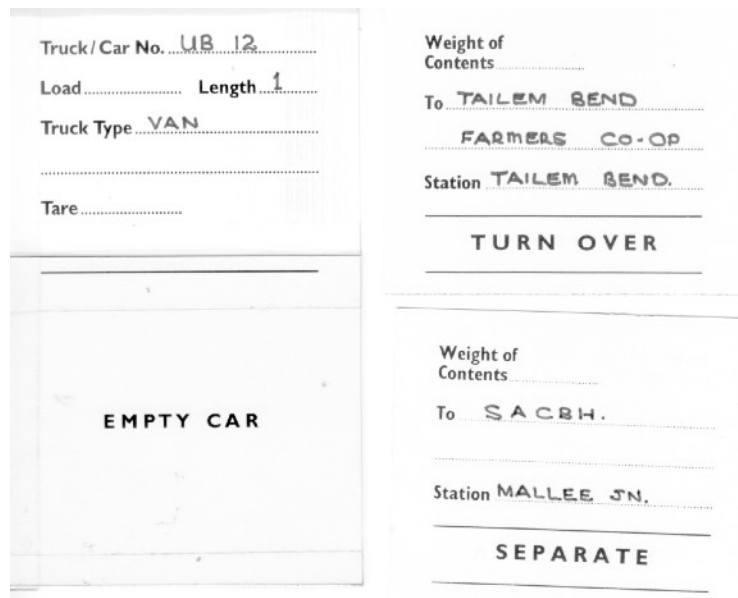
Some Waybill cards are for specific for a particular type of wagon. Cards can also specify whether a tank wagon, or a closed van, or an insulated van is required for example. Therefore there are more waybill cards than wagons. There is a variety of consignees, industries and stations. Waybill cards not in use are stored in a container with compartments for each wagon type.

On my SAR layout I have not provided wagon cards for oil / petrol tankers because each station has a siding for different oil companies. When a train arrives with the appropriate companies tanker, it is just a matter of swapping like for like.

My SAR layout is smaller than most of the other remaining layouts in the group and I operate an oil train consisting of tank wagons in both directions each operating night. Other loading for these private sidings could be in open wagons or covered vans and there are appropriate wagon and load cards for these movements.

Wagon types are classified as follows;
O   Open wagons.
D   van, or louvre wagon.
T   tank wagon.
C   cattle wagon.
S   sheep wagon.
R   insulated van.
H   hopper wagon.
F   flat wagon.

The following photograph illustrates an oil depot on the now dismantled Huntingdale & Grange Railway. Oil tanker in the siding as the scheduled coal train passes on the way to Grange.

When a train arrives at a station the station operator is given a set of cards for the consist of the train. He then sorts out what wagons are for his station and need to be detached and then add to the train any wagons for stations further down the line. While doing this he must ensure that what he adds to the departing train does not increase its length over the permitted length. The incoming wagons need to be shunted to their appropriate siding and after the shunting is complete the cards from the incoming train are placed in the **IN** section of the stations card box. The cards for the wagons that are to be added to the train were picked out from the stations **OUT** section of the stations card box. Once the train is ready to depart the cards for the complete train are handed to the next station operator.

In prototype operation a good train crew would block wagons for each station in a group to make shunting a little easier for stations further along the line.

Before the next operating session any cards in the **HOLD** section of the card box have their waybill card turned over and if the card then relates to another station on the layout, that wagon card is placed in the **OUT** section ready for the next running night. The cards for wagons that arrived that session in the **IN** section of the card box are then moved to the **HOLD** section to signify that they are being unloaded and then loaded for the next running night.

While this has only outlined card operation for freight trains there is no reason it could not be expanded to include passenger trains, specifying the types of carriages, vans and locomotives, or even diesel sets.

With the Mark 1 coaches it would not be difficult to make up cars to provide a terminal station operator with a variety of consists with first class, second class, corridor, open and brakes.

It would be possible to specify appropriate locomotives for each train as well to provide a little more interest and more work for an operator. Most modellers have more rolling stock and locomotives on a layout than they require.

Car Cards without Numbers System.

Anorther BMRA Member, Alan Baker has also been looking at systems for Operating a Model Railway and has provided information on a system that is called Car Cards without numbers.

The system revolves around cards detailing industries, sidings and loadings at each station on the layout.

On a prototype railway, wagons are allocated to each station by a central or district office to meet the needs of traffic at each station that is available to load.In the Modelling the Railways of South Australia Convention notes for 2013 there is a detailed article on how the South Australian Railways trucks office was setup and operated. This would be similar to the way railways around the world were set up.

While the system does not require individual wagon cards relies on a card that in some ways relates the loading card in the Ablo system.

Where the Ablo system requires a card box at each station, this system requires a card holder at each station with four or more partitions labelled.

Deliverd wagons.
Pick up orders.
Hold Orders.
Off Spot Wagons.

The system revolves around the station master, or the consignee requesting that a certain sort of wagon is available at a station to convey freight from one station to another. The system works well with closed vans and tank cars, and would benefit with removable loads for open wagons. A variety of loads is illustrated in the photograph. Each load is glued on to a base of black styrene sheet so it can easily moved from one wagon to the goods shed or the a box of loads ready to be used again.

In the next column there is details of the information for the **Car Order Card**. Once the **Car Order Cards** as shown in the next column are made up then most of the setup work is completed. I would possibly put the word **DELIVERED** in bold type and slightly larger font. I would then put the words, **TURN OVER** in the larger bold font under the word, delivered.

The Car Order Card

The Car Order Card has at least the following:

- Industry name and car spot
- The type of car – this may be as detailed as you want as long as the car can be recognized in a location with restricted visibility, like buried in a yard siding.
- Shipping instructions.
- The Car Order Cards are maintained at the yard servicing the particular industry. On large layouts there may be several yards, each with its own Car Order Cards.

A Typical Car Order Card

YARD A **CAR ORDER** 40' BOX TO BE SETOUT AT	YARD A **PICKUP ORDER** 40' BOX TO BE PICKEDUP AT
TOWN B **FEED MILL**	TOWN B **FEED MILL**
WHEN CAR HAS BEEN SETOUT PLACE THIS CARD IN BOX LABELED	For shipment WEST WHEN CAR HAS BEEN RETURNED TURN THIS CARD AND PLACE IN
DELIVERED	**CAR ORDERS**

After the wagon is delivered to the station where it is required, the card would then be placed in the station card box partition marked, **Pickup Order,** ready for the next train that is going in the direction that the load is intended for.

If anyone is interested in more details about this operating system or the one listed below, please email me at lesford3802@ gmail.com

Earl T Hackett has also developed a similar card operating system titled, "The Car Order Operating System", who needs those stinking numbers.