



LEFT: Southern Region British Railway trains gather at Gosport on Christopher and Richard Day's Banbury Connection Railway.

# BANBURY CONNECTIONS

By Christopher & Richard Day

**N**ow for something a little different! Banbury Connections is the brainchild and creation of an expatriate Englishman and retired train planner living in Australia—a “Pom down under” in the local vernacular. The layout has been developed over 40 years to create the ambience of a busy United Kingdom railway. It does this through intensive and purposeful operation over a substantial network.

The owner freely acknowledges that adherence to prototype practice comes a poor second to maximizing use of the available space in order to provide a captivating operational experience.

Whilst situated in Australia, Banbury Connections is a British outline OO gauge—4 millimeters to a foot—model railway set in 1962. At that time, the government-owned British Railways used both diesel and steam locomotives, maximizing the variety of rolling stock that can be modelled. The layout comprises 27 stations, arranged topologically in the manner set out in Fig. 1.

The relationship of Banbury Con-

## PHOTOS BY THE AUTHORS

nections to the British Railways network of 1962 is illustrated in Fig. 2.

The main line modeled on Banbury Connections runs from London Marylebone northwest to Birmingham Snow Hill and Wales. At Banbury there is a link to a Southern Region section from Gosport, on the south coast, as well as a connection to the Great Central section. The latter runs north via Sheffield to Manchester, Bradford, and Cleethorpes. The network is completed by a southwest branch from Bristol which links to both the northwest and Great Central main lines.

While the geographic orientation provides a sense of meaning and purpose to those familiar with the U.K., no serious attempt has been made to model stations along prototypical lines. The overriding intent was to create the feel of a busy, functional railway and replicate the pressures faced by operators in the days before the advent of wide-scale route setting and train management automation.

In the model, the routes depicted in Figs. 1 and 2 are reconfigured into a complex multi-level arrangement occupying a space measuring 12 x 7.3 meters—approximately 40 x 24 feet. This is illustrated in Fig. 3. Most of the layout is constructed in finger form with easy access aisles in between. The original 1975-era layout—occupying about one third of the total space—has duck-under access dating from a time when all operators had satisfactory joint flexibility.

On the layout, journey lengths of up to around 80 meters—250 feet—can be obtained over a variety of routes. In order to fit as much as possible into the available, space curves are at times as tight as two-foot radius, while ruling grades on main lines are up to 1:48 compensated.

Despite the layout's size, there are no circuits to facilitate hands-free continuous running. The loops—geographically situated just north of Wolverhampton—provide convenient storage for up to eight trains. These are imagined to proceed to other unmodeled destinations in the northwest of the U.K.

Banbury Connections differs from the typical North American model railway in the pre-eminence of passenger services over generally double-track main lines. The 33 passenger trains serve up to nine different stations, depending on route and stopping patterns.

A further contrast with North American practice is the use of railway-owned general-purpose goods wagons as opposed to privately owned vehicles. These goods wagons deliver mainly to central city facilities for final distribution by road transport. While the difficulty of maintaining real-world competitive freight operation within such an environment led to its rapid demise in the U.K. throughout the 1960s, it provided a degree of operating interest still beloved by U.K. modelers.

The layout, which is mainly double track, emulates the operation of a busy passenger and freight railway. It requires at least six operators to run to timetable, although a single operator can pass trains progressively along any route in a more leisurely fashion.

A direct-current control system is employed with no less than 16 main control panels, supplemented by four local control shunting panels. There are over 300 turnouts, of which 30 are electrically operated. Each panel creates the illusion of the operator being in control of their own signal box.

However, there are no easy berths. If only six operators are available, individuals may have charge of as many as four locations which, although next to each other in the room, frequently represent quite distinct and unattached sections of the layout.

By setting out to provide a cross section of the British Isles the railway incorporates trains from all four

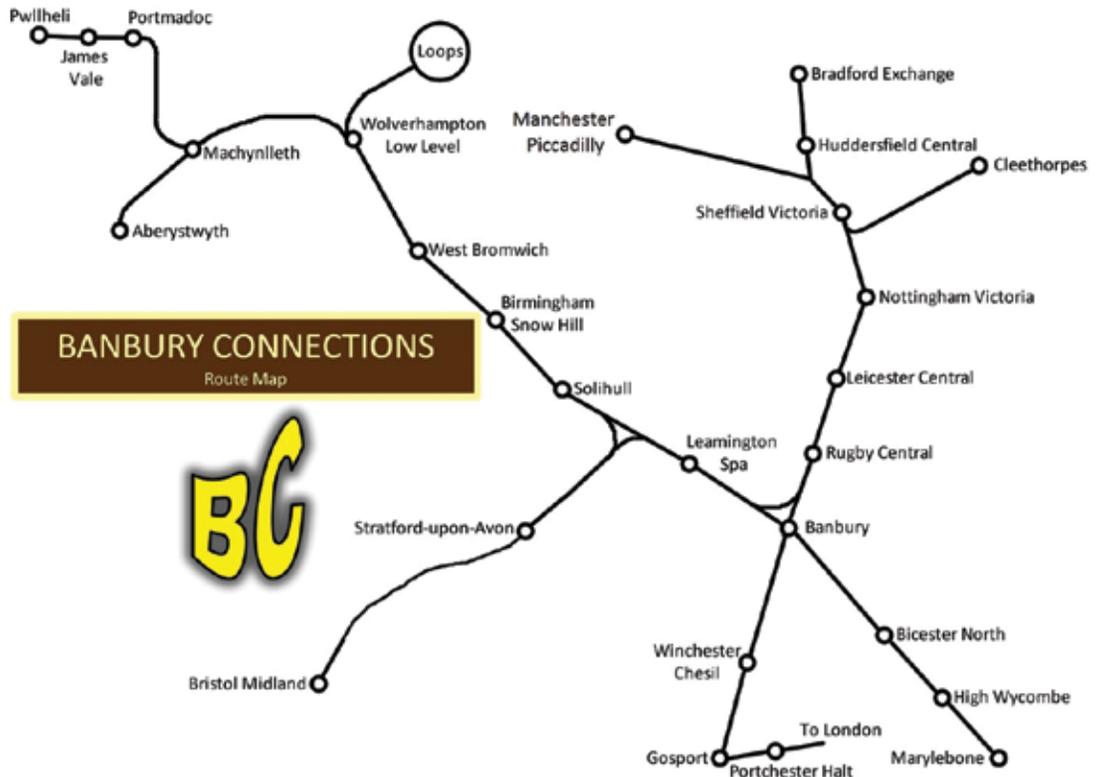
pre-nationalization companies. This allows for added complexity in terms of what types of rolling stock can be operated on different services, although this is not always appreciated by Australians lacking familiarity with the U.K. of 50 years ago.

Operation of such an intensive service requires around 110 locomotives and approximately 220 coaches and parcels vans, and 360 goods wagons.

Passenger workings on Banbury

Connections comprise Western Region trains from London to Birmingham, Wolverhampton, Aberystwyth, and beyond as well as Eastern Region trains from London to the Great Central. Cross-country workings from Gosport and Bristol operate to both the Great Central and northwestern main lines. Services consist of all-stops suburban trains, semi-fast, and express passenger services.

In all, there are 33 passenger

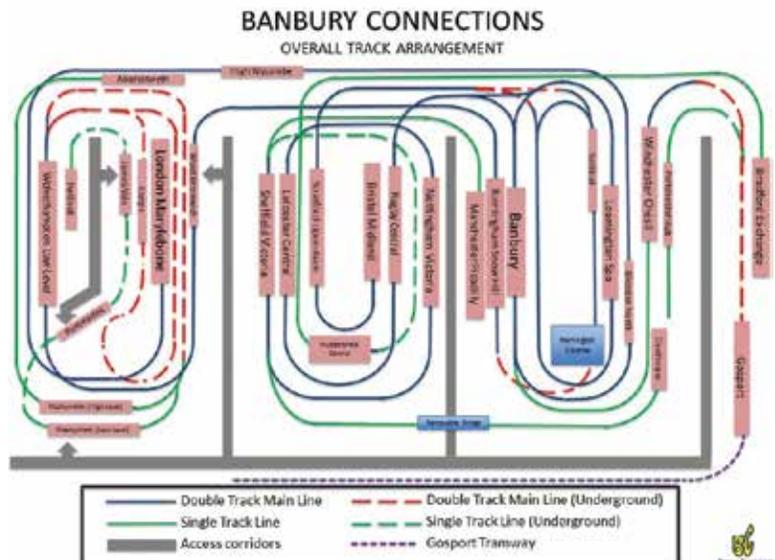


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ABOVE: Fig. 1: The Banbury connection route map shows the complete BC system.

NOTE: Fig. 2 is on the following page so that it could be run for better clarity.

RIGHT: Fig. 3: The Banbury Connection track plan shows several routes available on the BC.



trains required. These range in size from single vehicles to seven coach expresses. These trains need to be carefully timetabled to minimise station and track congestion.

In addition to the significant amount of passenger traffic, freight trains run regularly to transport goods to and from towns and industrial areas. These include four coal trains of which three connect the Nottingham coal mine to London, Gosport and Bradford.

There are three oil trains that transport oil from the port at Gosport to Wales, the Great Central and Wolverhampton, as well as other intermediate towns. In addition there are eight general-goods trains that provide pick up and “set down” (i.e., “set out” in North American train-speak) between the various general goods facilities on the layout. Other specialist goods trains include a brick train from the factory at Rugby to London, iron ore trains from Machynlleth to the steel works at Sheffield, a steel train from Sheffield to where required, Transfesa continental ferry van trains from the continental ferry terminal at Gosport to Sheffield and the northwest, tow milk trains that travel from Wales to London, a grain train from Leicester to Machynlleth and Aberystwyth, a cattle train, horse train, and two fish trains. The latter connect the harbours of Portmadoc and Porthmadog in contemporary Welsh spelling—in Wales and Cleethorpes on the Great Central to London.

Some freight workings, which run on a regular basis, need to be timetabled in between passenger trains. Many, however, operate during the night session when traffic densities are lower and the two sleeping-car trains replace daytime passenger services.

Four parcels trains run on the railway. Two of these connect Wales and the Great Central to London. The other two originate respectively at Bristol and Gosport and, alternately, run to the northwest and the Great Central. These parcels trains shunt at several intermediate stations where parcels vans are exchanged.

Table 1 provides a summary of



ABOVE: Fig. 2: The relationship of Banbury Connections to the British Railways network of 1962 is illustrated.

freight train activity across the network.

The core of the railway is located at Banbury which is the junction for the Southern, Great Central, and Western railway lines. This control panel, which comprises seven stations and four transfer points as well

as two triangular or delta junctions, must be carefully managed to ensure traffic flows smoothly to all parts of the railway. For this reason, the timetable is governed by train capacity at Banbury and the controller is kept very busy when operations are in full swing.



ABOVE: This overall view of the BC view is from the door.

In timetabling terms, Banbury is the pivot point for the whole operation. On average, a single passenger movement through the area controlled by this panel takes approximately four minutes. However the operator has one controller for each direction and, if appropriately multi-tasked, can theoretically manage about 30 trains per hour in total.

In practice up to 20 percent of the theoretical capacity needs to be set aside for contingency, such as late running. This means that the practical number of trains that can pass through the Banbury control area each hour is 24.

This total has to be allocated to the various routes, bearing in mind that

each “up” movement will generate an opposing “down” movement in the reverse direction. In the U.K., trains toward London are always referred to as “up” while trains from London are “down.” On routes that do not have an obvious London direction, “up” and “down” are nominated in a manner determined by a mixture of history and convenience.

The timetable pattern adopted requires seven trains-per-hour to operate from the main terminus at London/Marylebone Station at approximately six-to-ten-minute intervals. All stops trains follow in the wake of an express as they will take longer to clear the sections.

Once the return workings are added and shunting and turning of locomotives taken into account, the Marylebone operator has plenty to do. The remaining five up trains-per-hour impinging on the Banbury control panel comprise two from the single track Gosport branch and three from the Bristol direction.

Operating the railway is relatively complex as trains run between control panels and operators transfer trains to each other in transfer sections, often while the train remains in motion. This allows for the through-running of trains across multiple control panels staffed by different operators.

Each electrical section on the railway is either controlled by a switch on one of the control panels or is point isolated. Trains are driven using conventional DC controllers of generally British manufacture. Operators need to be familiar with their station’s track layout which corresponds with the diagram on their control panel. A manual has been prepared by one enthusiast to assist in panel familiarization.

The complexity of the railway is enhanced by about 200 working, hand-operated semaphore signals. These signals add to the realism of the railway and its operation although, in the heat of the moment, failure to properly signal the road is a common shortcoming of the less experienced and indeed more experienced operator. With such a high traffic intensity on the railway, the

track keeps itself relatively clean, although track and wheel cleaning keep the owners occupied between sessions.

Due to the operating emphasis, space for scenery is somewhat limited. However, the railway still has major scenic features such as Banington Castle and its adjacent town center, multiple farms, harbors, industrial areas, and several streetscapes. In addition, there is a 26-foot tramway that operates out of Gosport Railway station and

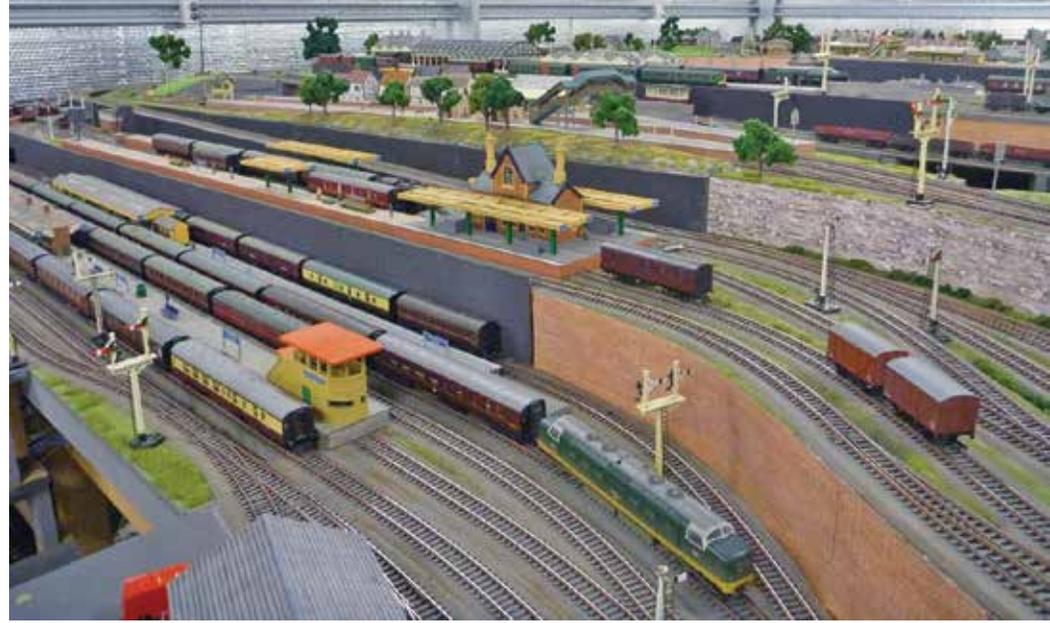
BELOW: The view across Birmingham Snow Hill and Banbury on the BC.



emulates a cross section of an English town. The tramway undertaking currently features 12 working double- and single-deck trams controlled by two panels. A Melbourne bogie car is a reminder that this layout is in the antipodes.

The future of the railway seems bright. Given its complexity it is not surprising that the two best operators are still just under 20 years of age. They are taking ever-increasing responsibility for maintenance and

RIGHT: Sheffield, Leicester, and Stratford-Upon-Avon stations on the busy BC.



### FREIGHT TRAINS OPERATING ON BANBURY CONNECTIONS

CLASS	TYPE	FROM	TO	ROUTE*	TIMES/DAY	TYPICAL ROLLINGSTOCK
GENERAL GOODS	Fast Goods	London	NW(Loops)	GW	2	Vacuum-brake fitted wagons
	All stations Goods	London	NW(Loops)	GW	2	Mainly Vacuum Fitted
	Semi-fast Goods	London	Bradford	GW+GC	2	Mainly Vacuum Fitted
	Semi-fast Goods	London	Aber or Pwll	GW+GWB	2	Mixed Wagons
	Pick-up Goods	Aber or Pwllheli	NW(Loops)	GWB	2	Mixed Wagons
	Semi-fast Goods	Bristol	NW(Loops)	SW/GW	1	Mainly Vacuum Fitted
	Semi-fast Goods	Bristol	GreatCentral	SW/GC	1	Mainly Vacuum Fitted
UNIT GOODS	Brick	Rugby	As Required	All	1	Bogie Brick Wagons
	Iron Ore	Machynlleth	Sheffield	GWB/GW/GC	1	Ore Wagons
	Fish	Portmadoc	London	GWB+GW	1	Fish Vans
	Fish	Cleethorpes	London	GC plus W	1	Fish Vans
	Milk	Aber	London	GWB+GW	1	Milk Tankers
	Milk	Pwllheli/Portmadoc	London	GWB+GW	1	Milk Tankers
	Grain	Aber/Machynlleth	Leicester	GWB+GW+GC	1	Grain Wagons
	Transfesa	Gosport	Loops or Shef	SW+GW Or GC	2	Transfesa Vans
	Cattle	Aber/Pwllheli	Banbury	GWB+GW	1	Cattle Wagons
	Horse	Banbury	As Required	As Required	As Required	Horse Boxes
	Steel	Sheffield	As Required	As Required	1	Bogie Bolsters
	Oil	Aber/Portmadoc	Gosport	GWB+GW SC	1	Oil Tankers
	Oil	Wolverhampton	Gosport	GW+SC	1	Oil Tankers
Oil	Sheffield	Gosport	GC+SC	1	Oil Tankers	
COAL	Mineral	London	Nottingham	GW+GC		Mineral Wagons
	Mineral	Gosport	Nottingham	SC+GC		Mineral Wagons
	Mineral	Bradford	Nottingham	GC		Mineral Wagons
	Mineral	Pwllheli	Loops	GWB		Mineral Wagons
PARCELS	Parcels	London	Bradford	GW/GC	2	Bogie Parcels Vans
	Parcels	London	NW(Loops)	GW	2	Bogie Parcels Vans
	Parcels	Gosport	Loops or Sheffield	SC+GW or GC	2	Bogie Parcels Vans
	Parcels	Bristol	Loops or Sheffield	SW+GW or GC	2	Bogie Parcels Vans

\* GC = Great Central; GW = Great Western; GWB Great Western Branch; SC = South Coast Southern Branch; SW = SW Bristol Branch.

documentation to assist the older players in getting up to speed and enjoy reliable operation. A potential downside is that the younger members like to run the layout a cool 50 years later using a kaleidoscope of privatized 2012 U.K. rolling stock. While this adequately demonstrates the quantum leap in efficiency that has been achieved over the intervening years, it is acknowledged that if you want the intellectual challenge of heaps of shunting and engine changes, you can't get past 1962.

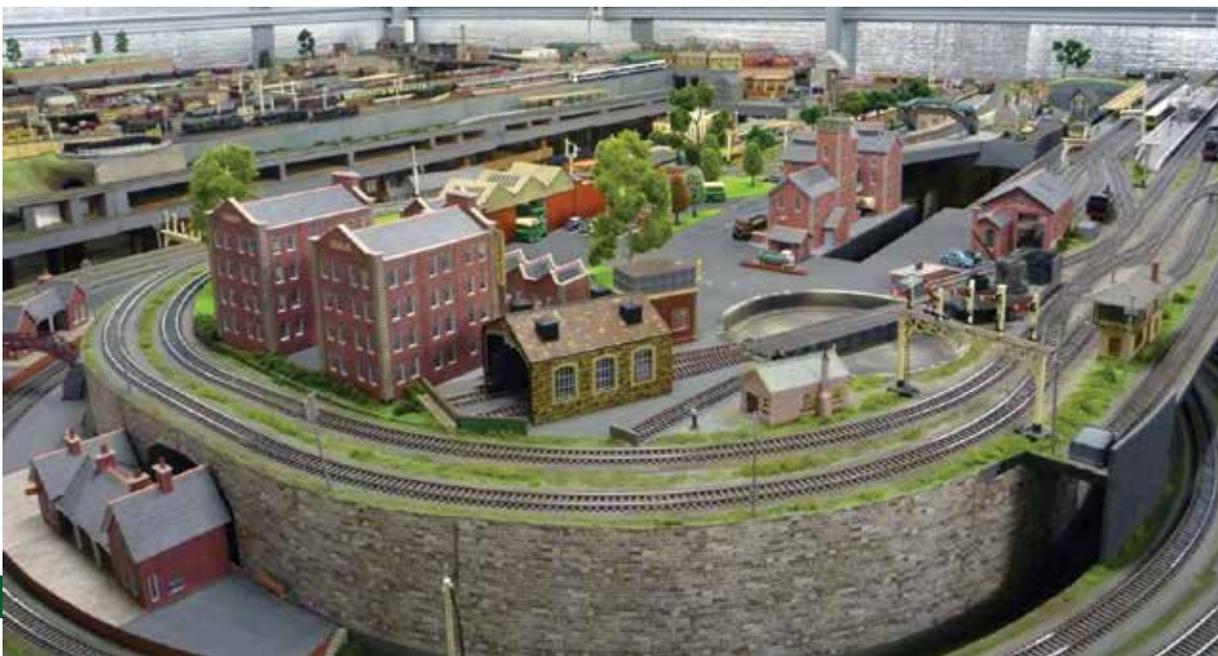
**RIGHT: The state of the art signal system on the BC is modeled as it was in 1962. Expresses are ready to depart London Marylebone.**



**BELOW: In addition to the typical passenger and freight trains, a tramway is also modeled. The Gosport Corporation Tramways connects the BC at Gosport Station to provide local passenger service.**



**ABOVE: The authors—Christopher and Richard Day—are shown at London Marylebone.**



**LEFT: Looking across Bristol to London Marylebone.**