All the World Is Mad, Save for Me and Thee *(and sometimes I wonder about thee)*

RailPictures.Net - Image Copyright © Joe Osciak

ScotRail
Rèile na h-Alba

Inside: Riding the "*Mentaliner*"
Frankston difficulties
Dùn Èideann am Glaschu ceathrar dol

—Contents—

On the front cover

The timetables of self-propelled trains of very different provenances are reviewed this month– Amtrak's silver-quick, one-off, schedule for the Metroliner of 1969 and Scotrail's ubiquitous services that thread the Glasgow-Edinburgh glacially-carved low-lands along 4 different routes. The Metroliner time out of New York has never been beaten; Scotrail's DMUs are anything but glacial.

Rossum's Universal Robots (R.U.R.) A play by Karel Čapek (1923), translated from the Czech by David Wyllie (2005). The play is most famous for popularizing worldwide the Czech word 'robot' (slave/worker).

Act One […]

Dr. Gall: You see, there's a ship on its way here now. An ordinary mail boat and right on the time it says in the timetable. It will be dropping anchor at exactly eleven-thirty.

Domin: Punctuality is a wonderful thing, lads. There's nothing that gladdens your soul more than punctuality. Punctuality means order in the world. (raises glass)- To punctuality!

Helena: So... that means... that everything's alright?

Domin: Nearly everything. I think they've cut the cable. It's only if the timetable is operating again.

Hallemeier: If the timetable is operating again, then human laws are operating again, and God's laws are operating again and the laws of the universe are operating again and everything is operating that should be operating. The timetable means more than the Bible, more than Homer, more the anything ever written by Kant. The timetable is the most perfect product of the human soul. Helena, I'll have another little drink.

-Thanks to Brendan Whyte for bringing our attention to this.

A pair of moments

Submitted by GEOFF LAMBERT, *with help from Wikipedia*

*O*K. folks—you all hang on real tight now. We'll be leaving in a pair of moments."

Thus was our introduction to Amtrak's New York—Washington **Metroliner**, back in 1975.

At the New York Medical Center's Department of Psychiatry where I worked at the time, the train was known colloquially by the Medics as the *"Mentaliner"*, for the number of psychiatric cases who fled Washington for New York on it. But that was OK—we were headed the *other* way.

The Metroliner was a premium express train service between Washington, D.C. and New York City in the United States from 1969 to 2006. It was first operated by Penn Central Transportation, successor to the Pennsylvania Railroad, and later by Amtrak.

Originally operated with self-powered electric multiple unit cars, which were later replaced with locomotive-hauled train-sets, the train offered reserved business-class and first-class seating. A trip between New York's Pennsylvania Station and Washington, D.C.'s Union Station took approximately 3 hours.

Amtrak later replaced Metroliner service with high-speed (150 mph or 240 km/h) *Acela Express* train-sets. Metroliner service was discontinued on 27 October 2006.

The initial schedules included one train daily in each direction between Washington and New York. A second train per day in each direction was soon added; non-stop service between Washington and New York was added on April 2, 1969. Successful from the beginning, the Metroliner remained under Penn Central operation until the creation of the National Railroad Passenger Corporation (*Amtrak*) in 1971.

The earliest timetable I can find for the Metroliner is in my Penn Central Employee Time Table (ETT) for 27-Apr-1969, about 3 weeks after the Metroliner had been introduced. The ETT has been modified by pasting-in a *"Lick'em and Stick'em"* from *General Order* 304, effective 2-Jun-1969. Holding the page up to the light, one can discern that the original schedule times (for train 2-131) were 20 min earlier than that specified in GO304.

The meaning of the ⊠ symbol at the top of the column is not given, but it is probably code for "non-stop". It was the only southbound train so marked in the book and was the only train in the 2000 number series. Its counterpart, Northbound 2004, was also introduced with GO304 and had similar timings. It may perhaps have been an early

WESTWARD – SOUTHWARD

215

				FIRST CLASS				
‡◇**201** Daily Ex. Sat. & Sun.	●**3853** Saturday Only	●**4241** Sunday Only	⊠ ●**2005** Daily Ex. Sat. & Sun.	‡●**3607** Daily Ex. Sat. & Sun.	**25** Daily	‡●**3705** Daily Ex. Sat. & Sun.	●**3821** Saturday Only
A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.
S 7.00	S 7.00	S 7.05	S 7.30	S 7.22	S 7.35	S 7.39	S 7.51
7.12	7.11	7.17	7.38	7.34	7.47	7.51	8.03
					S 7.50		
S 7.15	S 7.14	S 7.20	7.40	S 7.37	# 7.53	S 7.54	S 8.06
				S 7.39			
7.18	7.17	7.23		7.40	7.56	7.57	8.09
				S 7.43			S 8.12
	S 7.22	S 7.28		S 7.47		S 8.02	S 8.16
7.22	7.23	7.30		7.49	8.00	8.03	8.18
	S 7.27	S 7.34		S 7.53			S 8.22
				S 7.56			
	S 7.31	S 7.38		S 7.59		S 8.10	S 8.28
7.26	7.32	7.39	7.47	8.00	8.04	8.11	8.30
				S 8.03			
		MU	N.Y. Region G.O.304 Page 215 Col. 4	S 8.06		MU	MU
				8.11			
				S 8.14			
				S 8.18			
		S 7.43				F 8.14	
7.31	S 7.38	S 7.47		MU	8.09	S 8.17	S 8.35
		S 7.51				S 8.21	S 8.38
						S 8.25	
	S 7.44	S 7.55				S 8.29	S 8.46
7.37	7.46		7.55		8.14		8.49
		S 7.59				S 8.33	
7.45	7.53						8.58
S 7.51	S 7.58						S 9.05
7.58	8.04		8.05		8.32		9.13
S 8.01	S 8.08		8.06		S 8.35		S 9.16
A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.	A.M.

experimental schedule.

This train, #2005, the 0730 from Penn. Station, passes Trenton at 0806, an average speed of 95 mph. This was not bad, seeing as the maximum allowable speeds for the first 11 miles to Hunter ranged from 35 to 70 mph. This meant the average speed over the 37 miles Union to Trenton was 117 mph—the speed limit table specifies only 115 mph! The average speed of the trains which surround it on this page is about 52 mph… this Metroliner was *fast.* Indeed it was considerably faster to Trenton than today's Acela Express and two-thirds faster than the Pennsylvania train which it replaced. I do not have any Penn Central PTTs of this period, so I cannot say whether this super-fast train ever appeared in one.

With the coming of Amtrak two years later in 1971, the railroad world turned topsy-turvy. Amtrak issued many types of time-table over the years, generally falling into (at least) the following classes (in the cur-rent century, anyway):

1. Form T1, System timetable book– this contains all its trains.

2. Form T2, National timetable book– this contains all trains except those in the North East Corridor (NEC).

3. Form T3, NEC timetable book

4. Other timetable books

5. Specific train timetable leaflets.

In my time in New York (when the form numbering system was different) most were readily available from the timetable racks and booths in Grand Central and Pennsylvania stations.

My next timetable to show Metroliner service is an Amtrak NEC PTT of 19-May-1974– a summer timetable. In this PTT, there were 15 Metroliner services (out of a total of 25 NY-Washington trains) on weekdays, with fewer on weekend days, particularly Sundays. These trains departed on every half-hour from 06:30 to 20:30 and usually made the journey in 1 minute under 3-hours even, although a handful were a tad slower. Stops varied, but usu-ally included any or all of Metropark (the former Iselin), Philadelphia, Wilmington and Baltimore. A page of this PTT is shown at right—the Metroliner services are the ones with the "train" symbol near the top of the column.

In 1981 Amtrak replaced the Budd Metro-liner cars, which had developed problems with their DC motors limiting their speed, with conventional locomotive-hauled trains powered by the Swedish-developed AEM-7 locomotives pulling conventional Amfleet I and II coaches, whose design was derived from the first-generation Metroliner design, at speeds up to 125 mph (201 km/h).

WEST AND SOUTHBOUND EASTERN CORRIDOR SERVICE

BOSTON - PROVIDENCE - WORCESTER - SPRINGFIELD - HARTFORD - NEW HAVEN - NEW YORK - NEWARK - TRENTON - PHILADELPHIA - WILMINGTON - BALTIMORE - WASHINGTON

(Eastern Daylight Time)

Page 10

For explanation of Reference Marks, see Page 6.

Northeast Corridor — SOUTHBOUND

Boston • Springfield • New York • Philadelphia • Baltimore • Washington • Newport News

Amtrak Quiet Car℠

For our guests who would like to work or relax without distractions, many trains in the Northeast now offer an Amtrak Quiet Car. For more information, please ask any uniformed Amtrak employee.

We jump ahead now to the NEC timetable of 30-Sep-2001, just after the Acela Express (HST) trains were introduced. At right bottom of our previous page is its page 5, which allows a comparison between the Acela (Mon-Fri) and Metroliner (Sun); both have a 10 AM departure from New York. The travel times to Union Station, Washington are 2h 42min and 3h 01min respectively. Not that much of a saving, really.

The Acela Express is Amtrak's current high-speed rail service along the NEC. It uses tilting technology which allows the train to travel at higher speeds on the sharply curved NEC without disturbing passengers, by lowering lateral centrifugal forces, based on the concept of banked turns. Acela Express trains are the only true high-speed train-sets in North America; the highest speed they attain is 150 mph (240 km/h), though their average is less than half that speed. The Acela has become popular with business travelers and by some reckoning has captured over half of the market share of air or train travelers between Washington and New York.

Acela services (numbered in the 2100-2299 series) seem to have been "fleeted", running NY—Washington services in the morning and returning in the afternoon. The Metroliner services (numbered in the 100 series) were then relegated to the mirror image" services– North in the morning, South in the afternoon. A double-page spread from the 28-Oct-2002 ETT is shown at right and shows two of the remaining afternoon Metroliners– but of course no Acelas. A notable feature of this ETT is its improved layout and greatly increased number of timing points.

The Acela service is generally considered a success; by 2005, Amtrak's share of the transport market between New York and Boston had reached 40% from 18% pre-Acela. With the increasing popularity of the faster and more modern Acela Express, the Metroliner service was phased out; the last operated on October 27, 2006 .

The last PTT to speak of Metroliners was the Spring-Fall issue of 2006, where just one Metroliner schedule appeared, a 6 PM departure out of Penn. Station, still running to its now almost age-old time of 2h 59m. The equivalent Acela Express in this timetable was only 4 minutes faster.

The Acela carried 3.2 million passengers in fiscal year 2010. The Acela Express is one of the few Amtrak lines to operate at a profit; the two train lines generate more than half of Amtrak's total revenue.

They are yet to beat train 2005 of 1969.

NEW YORK-PHILADELPHIA-WASHINGTON				
TRAIN	649	121	221	163
Days run	[M-F]	[M-F]	[Su]	[SaSu]
Leaving	P.M.	P.M.	P.M.	P.M.
New York Arr				S 3.50
Dep	S 3.41p	S 4.01p	S 4.01p	S 4.06p
A	3.42	4.02	4.02	4.07
Bergen	3.47	4.07	4.07	4.13
Swift	3.50	4.10	4.10	4.15
Hudson	3.51	4.11	4.11	4.16
Newark	S 3.55	R 4.15	R 4.15	S 4.20
Hunter	3.57	4.17	4.17	4.23
Newark Airport Sta.	S 4.00			S 4.25
Elmora	4.04	4.20	4.20	4.29
Union	4.07	4.23	4.23	4.33
Iselin	4.09	4.25	4.25	4.35
Metropark		S 4.27	S 4.27	S 4.37
Menlo	4.10	4.28	4.28	4.38
Lincoln	4.12	4.30	4.30	4.40
New Brunswick				
County	4.16	4.34	4.34	4.44
Midway	4.20	4.38	4.38	4.48
Princeton Jct.				
Ham	4.28	4.45	4.45	4.55
Fair	4.30	4.46	4.46	4.57
Trenton	L 4.32			S 4.59
Morris	4.36	4.48	4.49	5.04
Grundy	4.40	4.52	4.53	5.08
Cornwells Hts.	L 4.46			
Holmes	4.50	4.58	4.59	5.14
Shore	4.54	5.02	5.03	5.18
North Phila.	L 4.58			
No. Phila	4.59	5.05	5.06	5.21
Zoo - Mantua	5.02	5.07	5.08	5.23
Phila. 30th St. Arr	S 5.08	S 5.11	S 5.12	S 5.27
Dep	S 5.40	S 5.13	S 5.14	S 5.30
Phil	to HAR	5.17	5.18	5.34
Baldwin		5.22	5.23	5.39
Hook		5.26	5.27	5.43
Holly		5.28	5.29	5.45
Landlith		5.31	5.32	5.48
Wilmington		S 5.34	S 5.36	S 5.52
Yard		5.36	5.38	5.54
Ragan		5.37	5.39	5.55
Davis		5.42	5.44	6.00
Newark				
Bacon		5.48	5.50	6.07
Perry		5.52	5.54	6.13
Grace		5.53	5.55	6.14
Aberdeen				
Bush		5.59	6.01	6.19
Wood		6.01	6.03	6.21
Gunpow		6.03	6.05	6.23
Biddle		6.15	6.18	6.34
Baltimore		S 6.19	S 6.22	S 6.39
Fulton		6.23	6.26	6.43
BWI Airport Sta.		S 6.32	S 6.35	S 6.52
Grove		6.36	6.39	6.57
Bowie		6.40	6.43	7.01
New Carrollton		D 6.45	D 6.49	D 7.06
Landover		6.47	6.50	7.08
CP Avenue		6.56	7.01	7.21
Washington Arr		S 6.59	S 7.04	S 7.25
Dep				
CP Virginia Arriving	P.M.	P.M.	P.M.	P.M.

AMTRAK NEC   PAGE 48   G.O. 801

NEW YORK-PHILADELPHIA-WASHINGTON				
TRAIN	173	123	55	653
Days run	[M-F]	[M-F]	[M-F]	[M-F]
Leaving	P.M.	P.M.	P.M.	P.M.
New York Arr	S 3.50		S 4.20	
Dep	S 4.06p	S 4.31p	S 4.36p	S 4.46p
A	4.07	4.32	4.37	4.47
Bergen	4.13	4.37	4.43	4.52
Swift	4.15	4.40	4.45	4.55
Hudson	4.16	4.41	4.46	4.56
Newark	S 4.20	R 4.45	S 4.50	S 5.00
Hunter	4.23	4.47	4.53	5.02
Newark Airport Sta.	S 4.25			
Elmora	4.29	4.50	4.56	5.05
Union	4.33	4.53	4.59	5.08
Iselin	4.35	4.55	5.01	5.10
Metropark	S 4.37	S 4.57	S 5.03	
Menlo	4.38	4.58	5.04	5.11
Lincoln	4.40	5.00	5.06	5.13
New Brunswick				
County	4.44	5.04	5.10	5.17
Midway	4.48	5.08	5.14	5.22
Princeton Jct.				L 5.29
Ham	4.55	5.15	5.21	5.35
Fair	4.57	5.16		5.36
Trenton	S 4.59		S 5.25	L 5.39
Morris	5.03	5.18	5.30	5.45
Grundy	5.07	5.22	5.34	5.49
Cornwells Hts.				L 5.55
Holmes	5.13	5.28	5.40	5.59
Shore	5.17	5.32	5.44	6.03
North Phila.				
No. Phila	5.20	5.35	5.47	6.07
Zoo - Mantua	5.22	5.37	5.49	6.10
Phila. 30th St. Arr	S 5.26	S 5.41	S 5.53	S 6.15
Dep	S 5.29	S 5.43	S 6.09	S 6.40
Phil	5.33	5.47	6.13	to HAR
Baldwin	5.38	5.52	6.18	
Hook	5.42	5.56	6.22	
Holly	5.44	5.58	6.24	
Landlith	5.47	6.01	6.27	
Wilmington	S 5.51	S 6.04	S 6.31	
Yard	5.53	6.06	6.33	
Ragan	5.54	6.07	6.34	
Davis	5.59	6.12	6.39	
Newark				
Bacon	6.06	6.18	6.46	
Perry	6.11	6.22	6.51	
Grace	6.12	6.23	6.52	
Aberdeen	S 6.18			
Bush	6.22	6.29	6.57	
Wood	6.24	6.31	6.59	
Gunpow	6.26	6.33	7.01	
Biddle	6.36	6.45	7.12	
Baltimore	S 6.41	S 6.49	S 7.17	
Fulton	6.45	6.53	7.21	
BWI Airport Sta.	S 6.54	S 7.02	S 7.30	
Grove	6.59	7.06	7.35	
Bowie	7.03	7.10	7.39	
New Carrollton		D 7.16	D 7.44	
Landover	7.08	7.17	7.46	
CP Avenue	7.21	7.26	7.55	
Washington Arr	S 7.25	S 7.29	S 7.59	
Dep				
CP Virginia Arriving	P.M.	P.M.	P.M.	P.M.

AMTRAK NEC   PAGE 49   G.O. 801

Back to Kywong – boys will be boys...will watch trains

Letters about trainspotting from ROD MILNE *and* ROBERT HENDERSON

I find your two mags. often of interest and found the little piece on the Kywong trip in 1950 fascinating.

I think you will find the esteemed gentleman who did that run was the late and sorely missed Ken Winney.

Photos of his of that trip in 1950 have been published in the past, so he may be the source or another who travelled with him.

Those southern NSW branch lines were fascinating and it is not a well known fact that when they were dieselised in 1962, only one 48 class loco was needed to run all the services. It started off the working week Monday morning at Culcairn, running the weekly job over to Holbrook before coming back to Culcairn and then doing the run to Corowa back. The next two days saw runs to Oaklands and Humula as required, while Thursday's workings for that loco comprised a morning run to Corowa and back and then later than

evening a weekly goods train to Rand and back in the hours of darkness. Friday finished the week with a return goods train up the long branch to Tumbarumba and back. The use of the single loco involved many placement runs comprising the loco and van to position itself at each junction for the branch run. For instance, on Thursday, the 48 and van off the train from Corowa worked up to Henty to do the weekly Rand goods train.

I liked the photos of Hobart suburban trains particularly the one of Y4 on the Cadbury train clearly coming back off the branch at Claremont in the morning.

Rod Milne

Albert Isaacs' letter in the July 2012 issue of The Times about keeping times books reminded of when my wife Katrina and I travelled by train to Canberra for the 1997 AGM of the AATTC.

In the booked seat train, sitting coincidentally immediately behind us were two other members going to the same event. And they were recording the times of the train.

Katrina never fails to remind me from time to time of an incident that occurred on that journey. When the train stopped at either Bungendore or Tarago (I cannot quite remember which), these two gentlemen were outspokenly critical of the driver or observer taking what they considered an inordinate length of time to detrain and appear to use the lavatory facilities on the station. I have wondered ever since whether details such as that were actually recorded in their so-called "times" books.

Robert Henderson

Let's do it for Frankston

JIM WELLS

Services on the Frankston, Dandenong and Ringwood lines in Melbourne on weekends day time have been improved.

In Frankston's case this means a train every 10 min which by any standard is a good service for off peak. This service has been operating Mon – Fri for a few months now.

Here's the route map (right, upper) and a sample of the weekday timetable (right, lower).

It is my contention that this service pattern is not optimal for the market.

The key problem is slowness. Sixty two minutes to cover 42.7 km is hardly ground-breaking stuff. The trains from Geelong–about 75 km–are generally quicker.

The problem is not poor track alignment. Yes, there are one or two issues such as the very sharp curve on the down side of South Yarra and the tramway crossing at Glenhuntly (p8, top right), but quite high speeds can be achieved over much of the route.

The problem is the number of intermediate stops. Twenty four by my count. It is my contention that any rail journey that has more than about twelve or fifteen stops becomes irritating and it doesn't matter whether the journey is a suburban one or quite a long distance one (see box, p9). It helps with a suburban one if the operation is 'snappy', short dwell times and smooth but high acceleration and braking. Melbourne's trains aren't too bad in this respect.

The traditional solution to this problem is to have short 'terminators' that stop all stations so that long distance trains can run non stop in the area served by the short distance trains. This is the pattern that operates in the peak hour; indeed use is made of the third track between Moorabbin and Caulfield to allow fast trains to overtake slower ones.

The difficulty is the transfer problem – someone travelling from say Ormond to say Bonbeach would have to change trains somewhere.

A service out of Flinders St with three trains an hour stopping all stations to Cheltenham and three trains to Frankston semi fast to Cheltenham would save a train set or two so would be more economic than the six all the way to Frankston. If the authorities aren't too concerned about cost then we could have four trains an hour on each service. This would integrate better with the Dandenong line four an hour ser-
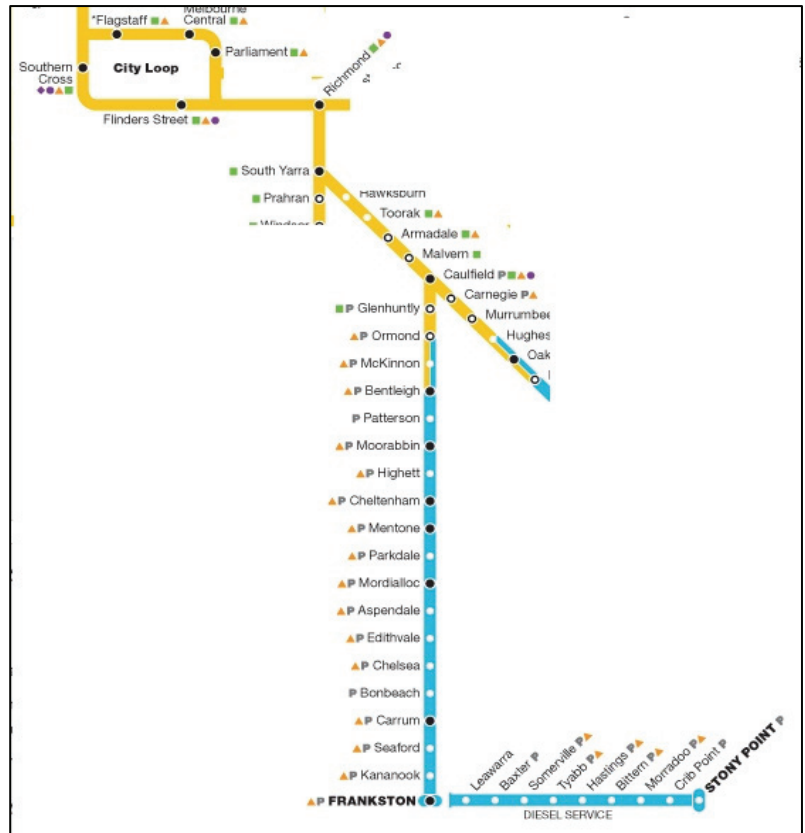
Wheelchair Accessible Services Morning (am) / Afternoon (pm)	♿ am	♿ am	♿ am
Frankston Station (Frankston)	10:22	–	10:32
Kananook Station (Seaford)	10:24	–	10:34
Seaford Station (Seaford)	10:27	–	10:37
Carrum Station (Carrum)	10:31	–	10:41
Bonbeach Station (Bonbeach)	10:33	–	10:43
Chelsea Station (Chelsea)	10:35	–	10:45
Edithvale Station (Edithvale)	10:37	–	10:47
Aspendale Station (Aspendale)	10:39	–	10:49
Mordialloc Station (Mordialloc)	10:42	–	10:52
Parkdale Station (Parkdale)	10:45	–	10:55
Mentone Station (Mentone)	10:47	–	10:57
Cheltenham Station (Cheltenham)	10:49	–	10:59
Highett Station (Highett)	10:52	–	11:02
Moorabbin Station (Moorabbin)	10:54	–	11:04
Patterson Station (Bentleigh)	10:56	–	11:06
Bentleigh Station (Bentleigh)	10:58	–	11:08
McKinnon Station (Mckinnon)	11:00	–	11:10
Ormond Station (Ormond)	11:01	–	11:11
Glenhuntly Station (Glen Huntly)	11:03	–	11:13
Caulfield Station (Caulfield East)	11:07	11:17	11:17
Malvern Station (Malvern)	11:09	11:19	11:19
Armadale Station (Armadale)	11:11		11:21
Toorak Station (Armadale)	11:13		11:23
Hawksburn Station (South Yarra)	11:15		11:25
South Yarra Station (South Yarra)	11:17	11:24	11:27
Richmond Station (Richmond)	11:20	11:27	11:30
Parliament Station (Melbourne City)		11:30	
Melbourne Central Station (Melbourne City)		11:32	
Flagstaff Station (Melbourne City)		11:34	
Southern Cross Station (Melbourne City)		11:36	
Flinders Street Station (Melbourne City) ARR	11:24	11:40	11:34

vice. A compromise might be four an hour to Cheltenham; two beyond.

This is the service pattern on Sydney's East Hills line – it works well.

One accepts that Cheltenham or Mordialloc may not be suitable as turn back stations. Ideally a turn back station on a busy two track railway needs a turn back road between the two running lines. The turn back road may or may not have a platform; there are advantages for passengers interchanging if the turn back road does not have a platform.

To solve this problem we need detailed origin–destination data. With the sort of ticketing data Melbourne used to have, that data would be difficult to come by, but one suspects that most off peak travel is CBD-oriented. Caulfield has a uni. campus and there is a major shopping centre, Southland, near Cheltenham.

The good burghers of such delightful places as Bonbeach and Aspendale would lose their "no need for a timetable" frequency. This really is only relevant if there is a lot of local traffic in the area, such as going from Bonbeach to Aspendale.

This sort of traffic is often better catered for by bus. A bus operates at a fraction of the cost of a train. Yes, in Victoria trains are single manned, as are buses, but the killer for trains is maintenance . A frequent bus service along the parallel Nepean Highway would be appropriate, a major side benefit being service to places distant from the railway stations.

The current 706 operates on the back road from Mordialloc to Chelsea only three times a day (wow!) and the 708 (Hampton – Carrum) serves the interior areas away from the railway half hourly. So amplification would be required.

However, I believe that what's really needed is to give Frankston itself a very fast service at least once an hour.

Frankston is a major suburb and rail head for most of the Mornington Peninsula. The population of the Mornington Peninsula Shire (2006) was 148,394 (Wiki.) and the City of Frankston had a similar number.

Frankston is the commencing point for the diesel service to Stony Point and has a major bus interchange.

A fast service from Frankston stopping only at Caulfield should reach Flinders St in no more than 40 minutes.

So what are the issues associated with this, apart from finding additional train sets to run the service?

The first is a political one. Yes, it might be nice for Frankston but there would be an immediate clamour for similar services to Lilydale, Dandenong, Eltham – who

Source: Google Maps

knows where else? This would be difficult to handle politically quite apart from operationally.

Depending on the pattern of ordinary services as discussed above it may not be possible to 'path' such a service. Use of the third track south of Caulfield would almost certainly be necessary; in effect this track would become a single line with alternate trains running in opposite directions. If things go astray it might get messy and integration with peak services may be difficult. Timetablers like to have 'robustness'.

With the introduction of the 10 minute service to Dandenong V/Line Gippsland services running non stop or one stop Caulfield to Dandenong are now quite slow. For example train 8413 to Bairnsdale on Saturdays leaves Caulfield at 12:13 pm, five minutes after the preceding suburban train and dawdles along to reach Dandenong three minutes after it – 12:39, say arrival 12:38. This is a speed of just 47 km/h. The road is straight and near level. On a

well managed railway the average should be at least double that.

Frankstn station, like suburban stations generally, are not designed to handle a very large number of exiting passengers. How large is very large? It may be possible to enlarge the platform exits and ease the flow of people out to the street. Capacity limitations may be a problem with the bus interchange.

One envisages the Frankston expresses running at high speed along the strip between Mordialloc and Carrum. This is an interesting railway as it runs right alongside a major road on the western side and often a minor road on the eastern. At most of the stations there is a boom barrier controlled level crossing and traffic lights on the roads. What a mess! Below is   a Google view of Chelsea; the station can be seen on the right.

It is understood that the railway has a technique of adjusting boom barrier times depending on the stopping pattern of trains.

Nevertheless there may be concern about trains operating through these stations at high speed.

It would not be possible without major track amplification to run an express service in peak hour. This would severely detract from the overall benefit of the arrangement.

Let's hope the Victorians review this situation and use their scarce resources more effectively.

How many stops should suburban train services have?

Australian railways are notorious for having suburban services with a large number of stops. Frankston is mentioned above – 24 intermediate stops, Belgrave likewise if one doesn't include East Richmond. Hurstbridge has 22; Pakenham 25 including all stations South Yarra to Malvern.

In **Sydney** the distances are typically somewhat greater and with the exception of Berowra services (21 stops from Town Hall) and Liverpool via Bankstown (24), all long distance trains skip at least two but normally more stations. For real tedium try Campbelltown via Granville – varies, 34 stops typical although this is a little unfair as almost all passengers from Glenfield south will use the alternate East Hills route to access the City. Richmond is almost a country service as the distance is greater than 70 km – 25 stops.

Brisbane has Ipswich with 21 intermediate stops, Caboolture 22 and some of the other lines also have a large number of stops. It helps in Brisbane that the operation is 'snappy'.

Adelaide – Gawler Central 24, Noarlunga Centre – varies 9 is typical. This line has off peak short working from Brighton.

Perth – none exceeds fifteen from a quick look.–

I did a quick survey of **London** suburban (National Rail) routes and couldn't find any with more than fifteen stops. These services typically don't serve inner areas to any great extent. Based on the 1996 timetable (it wouldn't have changed much) here's a sample (off peak only – M-F): Chingford 7, Gidea Park 9, Southminster 14, Welwyn Garden City 14, Luton 9, Slough 8, Guildford 8, and Orpington 11.

It's true that some of the **London Transport** train services have many stops. Piccadilly Line services have 19 intermediate stops to reach Heathrow (T5) from Piccadilly Circus

Much the same situation exists in **New York**. "Local" services on the subway can be very tedious but there are plenty of Express ones on main routes.

Let's look at the "normal" railways. Port Washington **(LIRR)** – 11 intermediate stops, Babylon – 17 (all stops), Port Jervis – 24 (long distance), Raritan **(NJT)** – 11.

And now, what about **Paris**? Having landed at *Charles-de-Gaulle* airport Terminal 2 – how many stops to Chatelet on RER Line B? There's a mix of fast and slow trains – the former has two intermediate stops, the latter 11. When these trains continue to the south side of Paris the number of stops is reasonable.

The difficulty here is drawing the line between suburban service and regional ones. The latter should not have any more stops as they should run express through inner suburban areas.

Frankston station– image courtesy *Railpage*©. Photo by Andyroo64

Dùn Èideann am Glaschu ceathrar dol.

By Duncan MacAuslan

Since 12 December 2010 the two main Scottish cities, Edinburgh and Glasgow, have been connected by no fewer than four rail routes:

The E&G - by Falkirk High.

The Caley by Carstairs.

Monklands–by Airdrie and Bathgate.

Across the moors – by Shotts.

This came about with the reopening, after a 56 year hiatus, of the line between Airdrie and Bathgate which had been closed in January 1956 and the track lifted from February 1982.

All trains within Scotland are branded **ScotRail Scotland's Railway** and operated by the First Group of companies. Scottish Gaelic is further used to distinguish the brand from other operators from England and Wales operators. Many coaches are branded ScotRailRèilena h-Albaand for many places both English and Gaelic names are shown on signage and maps. For example Glasgow's Queen Street station becomes SràidnaBanrighinn whilst Falkirk High is Bràighna h-Eaglaise Brice. The title of this article translates, I think to Edinburgh to Glasgow Four Ways. That very few Scots speak the Gaelic is not an issue.

ScotRail's timetables are published in

Routes between Glasgow and Edinburgh

- Lines already electrified
- Lines proposed for electrification
- ● New station
- ● Possible new station
- ○ Existing station
- Ⓐ Dalmeny chord
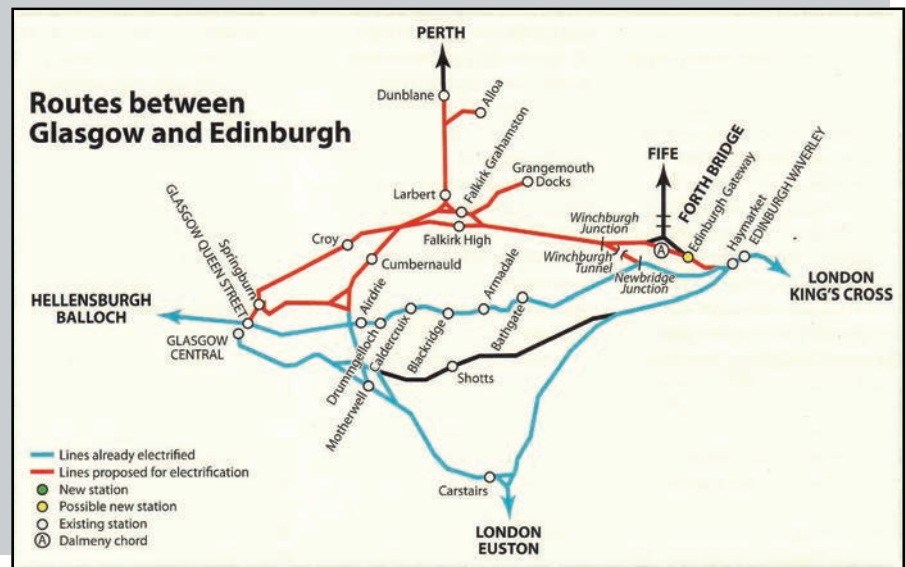
three sizes: A5 booklets; 9cm by 17.2cm stapled booklets and sheets folded to A7 pocket sized. There are twenty different timetables for Scotland plus Caledonian Sleepers and books for other operators such as East Coast, Cross Country and Virgin Trains.

The four timetables referred to in this article are sheets folded to A7. The covers are red for Falkirk High, dark green for Carstairs, pale green for Airdrie/Bathgate and pink for Shotts.

The E & G

This is the main line and the oldest route. The Edinburgh and Glasgow Railway opened on 21 February 1842 from Glasgow Queen Street to Edinburgh Haymarket and was later extended east to meet the North British Railway at Edinburgh Waverley. The line accesses Queen Street by the famous Cowlairs Incline. Earlier this year plans were announced to electrify the line and reduce the journey time by 10 minutes.

The current red covered timetable provides a very intense four trains an hour service, Mondays to Saturdays, between 06:30 and 19:30. There's an early train at 05:55 and after 19:30
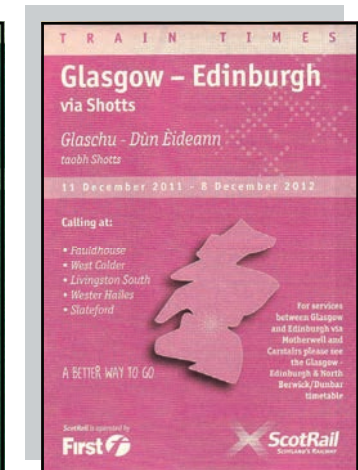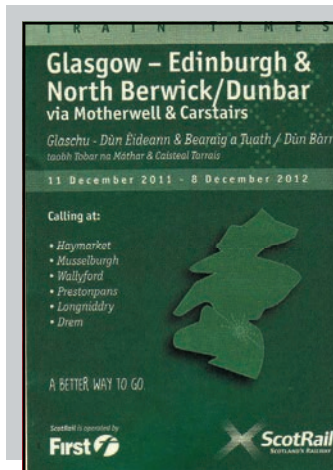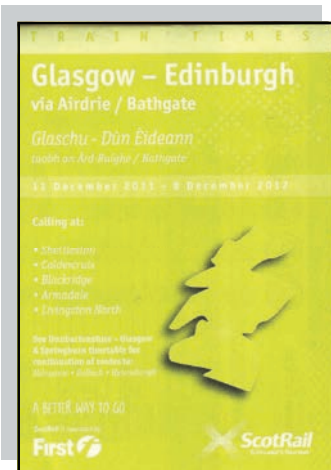
trains run half hourly until 23:30. On Sundays the service is hourly until 12:30, half-hourly until 21:30 and then hourly. The trip time is usually 50 minutes.

There are two stopping patterns during the weekdays. All trains, both ways, stop at Haymarket and Falkirk High. Trains on the hour and half-hour also stop at Croy. Here passengers from Edinburgh can, after a 10 minute wait change to the trains from Stirling or Alloa to get to Lenzie and Bishopbriggs. Trains at quarter to and quarter past also stop at Linlithgow and Polmont. Similarly trains from Glasgow offer connection at Croy from Bishopbriggs and Lenzie.

This pattern continues in the evening and Sundays on the hour to Croy and half hour at Polmont with all trains stopping at Linlithgow.

Class 170/4 TurbostarDMUs are used on this line in six car formations; each set providing 400 seats.

The Caley

The Caledonian Railway opened 15 Feb 1848 as a main line from Carlisle to Carstairs with branches from there to Glasgow Central and Edinburgh Princes Street. Keen to get a share of the Edinburgh and Glasgow—later North British—traffic they included a chord at Carstairs allowing cross country services. There's still an irregular service provided to this day, despite the significantly longer journey time. Edinburgh's Princes Street station closed in 1965 and trains were diverted to Waverley.

This line was electrified as part of the West Coast Main Line. Some trains continue to North Berwick on

Edinburgh / Bathgate / Airdrie - Glasgow

Mondays to Saturdays

(Columns identified by Edinburgh departure time, or origin: A = starts at Airdrie, B = starts at Bathgate. SX = Saturdays excepted, SO = Saturdays only. Branch-terminus rows that could not be reliably aligned to columns are listed below each table as raw sequences exactly as printed.)

First block

Station	0535 A·SX	0536 B	0551 B	0627 A	0621 B·SX	0607	0657 A·SX	0621	0637	0727 A	0648	0707	0757 A	0721	0737	0827 A	0754	0807 SO	0834 B	0857 A·SX	0821	0837	0927 A
Edinburgh d						0607		0621	0637		0648	0707		0721	0737		0754	0807			0821	0837	
Haymarket d						0611		0625	0641		0652	0711		0725	0741		0757	0811			0825	0841	
Edinburgh Park d						0616		0630	0646		0657	0716		0730	0746		0802	0816			0830	0846	
Uphall d						0624		0638	0654		0705	0724		0738	0754		0809	0824			0838	0854	
Livingston North d						0627		0641	0657		0708	0727		0741	0757		0813	0827			0841	0857	
Bathgate a						0633		0646	0703		0713	0733		0746	0803		0817	0833			0846	0903	
Bathgate d		0536	0551		0621	0634		0647	0704		0717	0734		0747	0804		0818	0834	0834		0847	0904	
Armadale d		0540	0555		0625			0651			0721			0751			0822				0851		
Blackridge d		0543	0558		0628			0655			0725			0755			0825				0855		
Caldercruix d		0550	0605		0635			0701			0731			0801			0832				0901		
Drumgelloch d		0553	0608		0638	0646		0705	0716		0735	0746		0805	0816		0835	0846	0846		0905	0916	
Airdrie a		0556	0611		0642	0649		0711	0719		0741	0749		0811	0819		0841	0850	0850		0911	0919	
Airdrie d	0535	0557	0612	0627	0642	0650	0657	0712	0720	0727	0742	0750	0757	0812	0820	0827	0842	0850	0850	0857	0912	0920	0927
Coatdyke d	0537	0559	0614	0629	0644		0659	0714	0722	0729	0744	0752	0759	0814	0822	0829	0844			0859	0914		0929
Coatbridge Sunnyside d	0539	0601	0616	0631	0646	0653	0701	0716	0724	0731	0746	0754	0801	0816	0824	0831	0846	0853	0853	0901	0916	0923	0931
Blairhill d	0542	0604	0619	0634	0649		0704	0719	0727	0734	0749	0757	0804	0819	0827	0834	0849			0904	0919		0934
Easterhouse d	0546	0608	0623	0638	0653		0708	0723		0738	0753		0808	0823		0838	0853			0908	0923		0938
Garrowhill d	0548	0610	0625	0640	0655		0710	0725		0740	0755		0810	0825		0840	0855			0910	0925		0940
Shettleston d	0551	0613	0628	0643	0658		0713	0728		0743	0758		0813	0828		0843	0858			0913	0928		0943
Carntyne d	0553	0615	0630	0645	0700		0715	0730		0745	0800		0815	0830		0845	0900			0915	0930		0945
Bellgrove d	0556	0618	0633	0648	0703		0718	0733		0748	0803		0818	0833		0848	0903			0918	0933		0948
High Street d	0558	0620	0635	0650	0705	0710	0720	0735	0740	0750	0805	0810	0820	0835	0840	0850	0905	0910	0910	0920	0935	0940	0948
Glasgow Queen St d	0601	0623	0640	0653	0710	0713	0723	0740	0743	0753	0810	0813	0823	0840	0843	0853	0910	0913	0913	0923	0940	0943	0953
Charing Cross d	0603	0625	0642	0655	0712	0715	0725	0742	0745	0755	0812	0815	0825	0842	0845	0855	0912	0915	0915	0925	0942	0945	0955
Partick a	0607	0629	0647	0659	0717	0720	0729	0747	0750	0759	0817	0820	0829	0847	0850	0859	0917	0920	0920	0929	0947	0950	0955
Hyndland a	0609	0632	0649	0702	0719	0722	0732	0749	0752	0802	0819	0822	0832	0849	0852	0902	0919	0922	0922	0932	0949	0952	1002
Dalmuir a	0624	0647	0659	0717	0729	0741b	0747	0759	0811b	0817	0829	0843b	0847	0859	0911b	0917	0929	0942b	0942b	0947	0959	1011b	1017

Branch-terminus rows (as printed):
- Milngavie a: 0722 0722 0752 0737 0752 0822h 0807 0829 0852 0839 0852 0923 0907 0923 0937 0937 0952 1007 1022
- Dumbarton Central a: 0634 0700 0708 0729 0739 0800 0808 0830 0838 0900 0909 0930 0939 1000 1009 1030
- Balloch a: 0644 0711 0741b 0741 0811b 0811 0841b 0841 0911b 0911 0941b 0941 1011b 1011 1041
- Helensburgh Central a: 0656g 0724 0754 0824 0855 0924 0954 1024

Second block

Station	0848	0907	0957 A	0921	0937	1027 A	0948	1007	1057 A	1021	1037	1127 A	1048	1107	1157 A	1121	1137	1227 A	1148	1207	1210 SO	1257 A	1221
Edinburgh d	0848	0907		0921	0937		0948	1007		1021	1037		1048	1107		1121	1137		1148	1207	1210		1221
Haymarket d	0852	0911		0925	0941		0952	1011		1025	1041		1052	1111		1125	1141		1152	1211	1214		1225
Edinburgh Park d	0857	0916		0930	0946		0957	1016		1030	1046		1057	1116		1130	1146		1157	1216	1219		1230
Uphall d	0905	0924		0938	0954		1005	1024		1038	1054		1105	1124		1138	1154		1205	1224	1227		1238
Livingston North d	0908	0927		0941	0957		1008	1027		1041	1057		1108	1127		1141	1157		1208	1227	1230		1241
Bathgate a	0913	0933		0946	1003		1013	1033		1046	1103		1113	1133		1146	1203		1213	1233	1233		1247
Bathgate d	0917	0934		0947	1004		1017	1034		1047	1104		1117	1134		1147	1204		1217	1234	1234		1247
Armadale d	0921			0951			1021			1051			1121			1151			1221				1251
Blackridge d	0925			0955			1025			1055			1125			1155			1225				1255
Caldercruix d	0931			1001			1031			1101			1131			1201			1231				1301
Drumgelloch d	0935	0946		1005	1016		1035	1046		1105	1116		1135	1146		1205	1216		1235	1246	1246		1305
Airdrie a	0941	0950		1011	1020		1041	1050		1111	1120		1141	1150		1211	1220		1241	1250	1250		1311
Airdrie d	0942	0950	0957	1012	1020	1027	1042	1050	1057	1112	1120	1127	1142	1150	1157	1212	1220	1227	1242	1250	1250	1257	1312
Coatdyke d	0944		0959	1014		1029	1044		1059	1114		1129	1144		1159	1214		1229	1244			1259	1314
Coatbridge Sunnyside d	0946	0953	1001	1016	1023	1031	1046	1053	1101	1116	1123	1131	1146	1153	1201	1216	1223	1231	1246	1253	1253	1301	1316
Blairhill d	0949		1004	1019		1034	1049		1104	1119		1134	1149		1204	1219		1234	1249			1304	1319
Easterhouse d	0953		1008	1023		1038	1053		1108	1123		1138	1153		1208	1223		1238	1253			1308	1323
Garrowhill d	0955		1010	1025		1040	1055		1110	1125		1140	1155		1210	1225		1240	1255			1310	1325
Shettleston d	0958		1013	1028		1043	1058		1113	1128		1143	1158		1213	1228		1243	1258			1313	1328
Carntyne d	1000		1015	1030		1045	1100		1115	1130		1145	1200		1215	1230		1245	1300			1315	1330
Bellgrove d	1003		1018	1033		1048	1103		1118	1133		1148	1203		1218	1233		1248	1303			1318	1333
High Street d	1005	1010	1020	1035	1040	1050	1105	1110	1120	1135	1140	1150	1205	1210	1220	1235	1240	1250	1305	1310	1310	1320	1335
Glasgow Queen St d	1010	1013	1023	1040	1043	1053	1110	1113	1123	1140	1143	1153	1210	1213	1223	1240	1243	1253	1310	1313	1313	1323	1341
Charing Cross d	1012	1015	1025	1042	1045	1055	1112	1115	1125	1142	1145	1155	1212	1215	1225	1242	1245	1255	1312	1315	1315	1325	1343
Partick a	1017	1020	1029	1047	1050	1059	1117	1120	1129	1147	1150	1159	1217	1220	1229	1247	1250	1259	1317	1320	1320	1329	1347
Hyndland a	1019	1022	1032	1049	1052	1102	1119	1122	1132	1149	1152	1202	1219	1222	1232	1249	1252	1302	1319	1322	1322	1332	1349
Dalmuir a	1029	1041b	1047	1059	1111b	1117	1129	1142b	1147	1159	1211b	1217	1229	1243b	1247	1259	1313b	1317	1329	1342b	1342b	1347	1359

Branch-terminus rows (as printed):
- Milngavie a: 1037 1052 1107 1125 1137 1152 1207 1222 1237 1252 1307 1322 1337 1337 1352
- Dumbarton Central a: 1038 1100 1109 1130 1139 1200 1209 1230 1239 1300 1309 1330 1339 1400 1409
- Balloch a: 1111 1141 1211 1241 1311 1341 1411
- Helensburgh Central a: 1054 1124 1154 1224 1254 1324 1354 1424

---

the Lothian coast where the short branch was electrified as part of the East Coast Main Line.

Monday to Friday trains from Edinburgh are at 06:24, 07:22 from Dunbar, 08:33 ScotRail from North Berwick, 09:11 from Darlington, 11:11 from Birmingham, 13:12 from Bristol, 15:11 from Plymouth, 17:11 from Penzance, 17:42 ScotRail, 18:24 ScotRail from North Berwick, 19:11 from Plymouth, 20:16 East Coast from London King's Cross, and 21:14 from Plymouth (operated by Cross Country unless indicated).

Weekday trains from Glasgow operate at 06:01 to Plymouth, 06:50 East Coast to London King's Cross, 07:05 ScotRail to North Berwick, 07:50 to Penzance , 09:00 to Penzance, 10:59 to Penzance, 12:51 to Plymouth, 15:00 to Bristol, 15:14 ScotRail to North Berwick, 16:52 to Birmingham, 18:59, 19:49 ScotRail, and 21:05.

There is also a more intensive Edinburgh to North Berwick local service.

A variety of train types are used mainly class 43 HSTs for Cross Country and East Coast whilst ScotRail services use class 380 EMUs.

By the Monklands

Waggonways into the coal mining region east of Glasgow known as the Monklands date from 1800 onwards. Several of these were combined and eventually came under North British ownership and, on 28 July 1863, was extended east from Airdrie to Coatbridge and Bathgate, where the line met the Edinburgh to Bathgate line (opened 12 November 1849). The ac-

Dunbar / North Berwick - Edinburgh - Glasgow

All ScotRail services within this timetable convey Standard Class accommodation only.

Mondays to Fridays

For confirmation of other Operators' times, please call 08457 48 49 50

		XC			XC		GR		XC		GR		GR		XC			XC		XC			XC		XC	
Dunbar	d				0700		0742				0854		0956			1049		1137			1250		1341			
North Berwick	d		0607	0644		0720			0756		0843		0927		1027		1127		1227			1327		1427		
Drem	d		0615	0651		0727			0804		0851		0934		1034		1134		1234			1334		1434		
Longniddry	d		0621	0657		0733			0810		0856		0940		1040		1140		1240			1340		1440		
Prestonpans	d		0626	0702		0738		0807	0814		0901		0945		1045		1145		1245			1345		1445		
Wallyford	d		0629	0705		0741		0810	0817		0904		0948		1048		1148		1248			1348		1448		
Musselburgh	d		0633	0709		0745		0813	0822		0909		0952		1052		1109	1152		1252		1309	1352		1452		
Edinburgh	a		0640	0715	0722	0755	0810	0822	0832		0916	0924	1000	1020	1100		1115	1200	1203	1300		1316	1400	1410	1500	
Edinburgh	d	0624		0718	0726				0833	0911				1027		1111				1312						1511
Haymarket	a			0722	0730				0837	0915				1031		1114				1315						1514
Carstairs	a								0913																	
Motherwell	a	0704			0808				0932	1004						1152				1352						1552
Glasgow Central	a	0727			0824				0959	1026						1214				1412						1623

			XC		XC			GR		XC			XC		TP FX		XC	GR		XC		XC	GR	
Dunbar	d	1505		1541				1702			1743						1945						2151	2157	
North Berwick	d		1526		1627					1727		1753	1827		1901		1926			2026		2127			2227
Drem	d		1533		1634					1734			1834		1906		1933			2032		2134			2234
Longniddry	d		1539		1640					1740			1840		1912		1940			2038		2140			2240
Prestonpans	d		1544		1645					1745			1845		1917		1945			2043		2145			2245
Wallyford	d		1547		1648					1748			1848		1920		1949			2046		2148			2248
Musselburgh	d	1524	1551		1652			1722		1752		1808	1852		1924		1953			2049		2152			2252
Edinburgh	a	1536	1600	1605	1700			1728		1800	1807	1818	1900		1934		2000	2009		2059		2159	2216	2225	2300
Edinburgh	d					1711	1718	1728	1742		1811	1824		1911		1956		2014	2016		2114				
Haymarket	a					1714	1723	1732	1745		1814	1827		1914		2000b		2016	2021		2117				
Carstairs	a								1816			1909				2023									
Motherwell	a					1752	1835		1838			1932		1954					2103		2201				
Glasgow Central	a					1816			1853			1953		2015					2128		2227				

Saturdays

		XC		XC		GR		XC	GR			GR		XC			XC		XC			XC		XC		
Dunbar	d				0748				0855			0956					1138								1338		
North Berwick	d		0607		0721		0821			0921	0950		1021		1050	1121		1150	1221		1250	1321		1350	1421		
Drem	d		0615		0728		0828			0929	0957		1028		1058	1128		1157	1228		1257	1328		1358	1428		
Longniddry	d		0621		0734		0834			0934	1003		1034		1103	1134		1203	1234		1303	1334		1403	1434		
Prestonpans	d		0626		0739		0839			0939	1008		1039		1108	1139		1208	1239		1308	1339		1408	1439		
Wallyford	d		0629		0742		0842			0942	1011		1042		1111	1142		1211	1242		1311	1342		1411	1442		
Musselburgh	d		0633		0746		0846			0946	1015		1046		1115	1146		1215	1246		1315	1346		1415	1446		
Edinburgh	a		0640		0754	0817	0853		0924	0954	1023	1024	1054		1123	1154	1207	1223	1254		1323	1354	1407	1423	1454		
Edinburgh	d	0626		0726			0903	0911				1027		1111						1311							
Haymarket	a	0629		0729			0906	0915				1031		1115						1315							
Carstairs	a						0944																			
Motherwell	a	0712		0814			1000	1005						1152						1352							
Glasgow Central	a	0742		0832			1015	1025						1213						1413							

		XC			XC		XC			XC			XC			XC		XC			XC	GR	
Dunbar	d				1540						1739						1941					2150	2213	
North Berwick	d		1450	1521		1550	1621			1650	1721		1750	1821		1850	1921		2021		2121			2221
Drem	d		1458	1528		1558	1628			1658	1728		1757	1828		1858	1928		2028		2128			2228
Longniddry	d		1503	1534		1603	1634			1703	1734		1803	1834		1903	1934		2034		2134			2234
Prestonpans	d		1508	1539		1608	1639			1708	1739		1808	1839		1908	1939		2039		2139			2239
Wallyford	d		1511	1542		1611	1642			1711	1742		1811	1842		1911	1942		2042		2142			2242
Musselburgh	d		1515	1546		1615	1646			1715	1746		1815	1846		1915	1946		2046		2146			2246
Edinburgh	a		1523	1554	1604	1623	1654		1723	1754	1805	1823	1854		1923	1954	2006	2054		2154	2214	2241	2254	
Edinburgh	d	1511						1711	1718		1811	1824		1911				2014		2113				
Haymarket	a	1515						1715	1723		1814	1827		1915				2017		2116				
Carstairs	a											1909												
Motherwell	a	1552						1752	1835			1932		1952						2200				
Glasgow Central	a	1623						1811				1953		2011						2222				

Sundays

		GR	XC		XC		XC	GR		XC		XC		XC		XC		XC		XC		XC	GR		XC		GR
Dunbar	d		1133					1340	1354			1541			1740			1941			2054		2151		2312			
North Berwick	d	1120		1220		1324			1420		1520		1620		1720		1820		1920		2020			2120		2220		
Drem	d	1127		1227		1328			1424		1527		1627		1727		1827		1927		2027			2127		2227		
Longniddry	d	1133		1233		1334			1430		1533		1633		1733		1833		1933		2033			2133		2233		
Prestonpans	d	1138		1238		1339			1435		1538		1638		1738		1838		1938		2038			2138		2238		
Wallyford	d	1141		1241		1342			1438		1541		1641		1741		1841		1941		2041			2141		2241		
Musselburgh	d	1145		1245		1346			1442		1545		1645		1745		1845		1945		2045			2145		2245		
Edinburgh	a	1153	1201	1253		1357	1407	1422	1453		1553	1606	1653		1753	1807	1853		1953	2005	2053		2117	2153	2216	2253	2341	
Edinburgh	d		1217		1310				1510			1711		1813		1918				2112	2121							
Haymarket	a		1220	1314					1514			1714		1816		1922				2115	2126							
Motherwell	a		1255	1350					1551			1752				2000				2153	2206							
Glasgow Central	a		1312	1414					1613			1812				2020				2214	2229							

Notes

GR	Service operated by East Coast
TP	Service operated by First TransPennine Express
XC	Service operated by CrossCountry
a	Arrival time
b	Departure time. Stops to pick up only
d	Departure time
FX	Fridays excepted

CrossCountry and Virgin Trains times apply until 13 May 2012. For details from 14 May 2012, please telephone 08457 48 49 50

Please note that there are no Sunday services at Carstairs.

traveline
0871 200 22 33
www.travelinescotland.com

tual story of these lines is fascinating and too complex to relate here (see http://www.jhowie.f9.co.uk/monkland.htm).

The winter 1954/5 timetable shows only two through trains on weekdays and three extras on Saturdays – for the football? Of note is that then all trips run to Glasgow's forgotten terminus at Hyndland. Closed in 1960, the old station, on a branch to Hyndland Road, once hosted through coaches from King's Cross.

The through service closed to passengers on 9 January 1956, with track lifted between Moffat Mills in Airdrie and Bathgate from February 1982. From then on the line operated as two branches: local trains between Edinburgh and Bathgate and electric services from Helensburgh, on the Clyde west of Glasgow, to Airdrie. Only two trains an hour operated between Bathgate and Waverly.

In Glasgow the main station is Queen Street Low Level which is under, and at right angles, to the main station. This line was originally electrified as part of the famous Glasgow Blue Trains scheme in the 1960s.

However the population growth in central Scotland meant that there became a case to re-establish the through service and the A2B, as it was known, saw the reinstatement of double track and the creation of a new cycle path to replace the one on the old track bed between Airdrie and Bathgate and re-duplication of the Bathgate to Edinburgh line. Four new stations were opened between Airdrie and Bathgate: Drumgelloch, Caldercruix, Blackridge and Armadale.

The first through train from Edinburgh was the 08:37 to Helensburgh arriving

Edinburgh - Glasgow Queen Street via Falkirk High

Mondays to Saturdays

		Z	Z	SX	Z			SO	SX													
Edinburgh	d	0555	0630	0645	0700	0715	0730	0745	0745	0800	0815	0830	0845	0900	0915	0930	0945	1000	1015	1030	1045	1100	1115
Haymarket	d	0559	0634	0649	0704	0719	0734	0749	0749	0804	0819	0834	0849	0904	0919	0934	0949	1004	1019	1034	1049	1104	1119
Linlithgow	d	0613	0648	0704	▼	0733	0748	0804	0804	0833	▼	0903	▼	0933	▼	1003	▼	1033	▼	1103	▼	1133
Polmont	d	0619	0655	▼	0721	▼	0755	▼	▼	0822	0839	▼	0909	▼	0939	▼	1009	▼	1039	▼	1109	▼	1139
Falkirk High	d	0624	0700	0713	0726	0742	0800	0813	0813	0826	0844	0854	0914	0924	0944	0954	1014	1024	1044	1054	1114	1124	1144
Croy	d	0634	0710	0723	▼	0752	0810	▼	0836	▼	0903	▼	0934	▼	1003	▼	1033	▼	1103	▼	1133	▼
Lenzie	a	0650	0720	0750	▼	0805	▼	0825	0825	0850	▼	0920	▼	0950	▼	1020	▼	1050	▼	1120	▼	1150	▼
Bishopbriggs	a	0654	0725	0755	▼	0810	▼	0829	0836	0854	▼	0924	▼	0954	▼	1024	▼	1054	▼	1125	▼	1154	▼
Glasgow Queen St	a	0649	0725	0738	0750	0807	0825	0840	0840	0855	0907	0919	0936	0950	1006	1019	1036	1049	1106	1119	1137	1150	1206

Edinburgh	d	1130	1145	1200	1215	1230	1245	1300	1315	1330	1345	1400	1415	1430	1445	1500	1515	1530	1545	1600	1615	1630	1645
Haymarket	d	1134	1149	1204	1219	1234	1249	1304	1319	1334	1349	1404	1419	1434	1449	1504	1519	1534	▼	1604	1619	1634	▼
Linlithgow	d	▼	1203	▼	1233	▼	1303	▼	1333	▼	1403	▼	1433	▼	1503	▼	1534	▼	1604	▼	1633	▼	1706
Polmont	d	▼	1209	▼	1239	▼	1309	▼	1339	▼	1409	▼	1439	▼	1509	▼	1540	▼	1610	▼	1639	▼	1713
Falkirk High	d	1154	1214	1225	1244	1254	1314	1324	1344	1354	1414	1424	1444	1454	1514	1524	1545	1554	1614	1624	1644	1653	1718
Croy	d	1203	▼	1234	▼	1303	▼	1333	▼	1403	▼	1433	▼	1503	▼	1533	▼	1603	▼	1633	▼	1703	▼
Lenzie	a	1220	▼	1250	▼	1320	▼	1350	▼	1420	▼	1450	▼	1520	▼	1550	▼	1620	▼	1648	▼	1720	▼
Bishopbriggs	a	1224	▼	1254	▼	1324	▼	1354	▼	1424	▼	1454	▼	1524	▼	1554	▼	1624	▼	1652	▼	1724	▼
Glasgow Queen St	a	1220	1237	1249	1306	1319	1336	1351	1406	1419	1436	1448	1507	1522	1537	1551	1607	1619	1636	1651	1707	1721	1740

									A	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z	Z
Edinburgh	d	1700	1715	1730	1745	1800	1815	1830	1845	1900	1915	1930	2000	2030	2100	2130	2200	2230	2300	2330
Haymarket	d	1704	1719	1734	1749	1804	1819	1834	1849	1904	1919	1934	2004	2034	2104	2134	2204	2234	2318	2348
Linlithgow	d	▼	1733	▼	1804	▼	1833	▼	1903	▼	1933	1948	2018	2048	2119	2148	2218	2248	2318	2348
Polmont	d	▼	1739	▼	1809	▼	1839	▼	1909	▼	1939	▼	2024	▼	2125	▼	2224	▼	2324	2354
Falkirk High	d	1724	1744	1755	1814	1825	1844	1855	1914	1925	1944	1957	2029	2057	2130	2157	2229	2257	2339	0009
Croy	d	1734	▼	1805	▼	1835	▼	1905	▼	1934	▼	2007	▼	2107	▼	2207	▼	2307	2339	0009
Lenzie	a	1750	▼	1811	▼	1850	▼	1920	▼	1950	▼	2020	▼	2120	▼	2220	▼	2320	2344	▼
Bishopbriggs	a	1754	▼	1825	▼	1854	▼	1924	▼	1954	▼	2024	▼	2124	▼	2224	▼	2324	2350	▼
Glasgow Queen St	a	1751	1806	1823	1837	1850	1908	1923	1936	1949	2007	2022	2051	2121	2151	2223	2250	2322	0001	0026

Sundays

			Z									Z									Z	Z	Z
Edinburgh	d	0800	0900	1000	1100	1200	1230	1300	1330	1400	1430	1500	1530	1600	1630	1700	1730	1800	1830	1900	1930	2000	2030
Haymarket	d	0804	0904	1004	1104	1204	1233	1304	1334	1404	1434	1504	1534	1604	1634	1704	1734	1804	1834	1904	1934	2004	2034
Linlithgow	d	0818	0918	1018	1118	1218	1248	1318	1348	1418	1448	1518	1548	1618	1648	1718	1748	1818	1848	1918	1948	2018	2048
Polmont	d	0824	0924	1024	1124	1224	▼	1324	▼	1424	▼	1524	▼	1624	▼	1724	▼	1824	▼	1924	▼	2024	▼
Falkirk High	d	0829	0929	1029	1129	1229	1257	1329	1357	1429	1457	1529	1557	1629	1657	1729	1757	1829	1857	1929	1957	2029	2057
Croy	d	0839	0939	1039	1139	1239	1307	▼	1407	▼	1507	▼	1607	▼	1707	▼	1807	▼	1907	▼	2007	▼	2107
Lenzie	a	▼	0955	1055	1152	1252	1352	▼	1452	▼	1555	▼	1652	▼	1752	▼	1854	▼	1951	▼	2052	▼
Bishopbriggs	a	▼	0959	1059	1156	1256	1356	▼	1456	▼	1600	▼	1656	▼	1756	▼	1858	▼	1955	▼	2056	▼
Glasgow Queen St	a	0859	1000	1101	1156	1254	1323	1351	1423	1451	1522	1551	1622	1651	1722	1752	1822	1851	1922	1951	2022	2051	2122

		Z	Z	Z	Z
Edinburgh	d	2100	2200	2300	2330
Haymarket	d	2104	2204	2304	2334
Linlithgow	d	2118	2218	2318	2348
Polmont	d	2124	2224	2324	2354
Falkirk High	d	2129	2229	2329	2359
Croy	d	2139	2239	2339	0009
Lenzie	a	2152	▼	▼	▼
Bishopbriggs	a	2156	▼	▼	▼
Glasgow Queen St	a	2155	2255	2355	0025

Notes

a	Arrival time
d	Departure time
A	Catering service available on Saturdays only
Z	No catering service available
SO	Saturdays only
SX	Saturdays excepted

Remember
Light italic type indicates connecting train times.

Trolley catering services may be available for all or part of the journey. On some trains, the service may only be provided in part of the train.

traveline
0871 200 22 33
www.travelinescotland.com

10:44. The first train from Helensburgh was the 07:55 to Edinburgh arriving 10:07.

The present timetable provides four trains an hour, twice the previous service, each way Monday to Saturday. From Edinburgh those at 07 and 37 past are limited stops and continue to Milngavie (pronounced mul-guy), while those at 21 and 48 past stop at all stations to Helensburgh. An additional half-hourly service operates from Airdrie to Balloch (near Loch Lomond) hence the irregular departure times from Edinburgh. The limited stops trains take 64 minutes from Waverly to Queen Street while the all stations take 79 minutes.

Class 334 Juniper EMUs are used on this line providing 366 seats per set.

Across the moors

The fourth line is known as the Shotts Line. It was opened on 9 July 1869 as the Cleland and Midcalder Railway and became part of the Caledonian.

Trains depart Edinburgh half hourly during the morning with those at 26 past the hour stopping at all stations except Breich and those at 56 past stopping only at five stations. Breich only gets one train a day; it has no car park and is relatively isolated.

From Glasgow the pattern is 05 all stops but Breich and the 18 past the hour has only five stops.

The all stops services take around 90 minutes for the trip whilst the limited stops journeys take between 66 and 74

Edinburgh - Glasgow Central via Shotts

All services within this timetable convey Standard Class accommodation only.

Mondays to Saturdays

Station		SO	SX	SO	SX		SX		SO													
Edinburgh	d	0551	0640	0655	0655	0751	0757	0825	0833	0857	0903	0926	0956	1027	1056	1126	1156	1226	1256	1326	1356	1427	1456
Haymarket	d	0555	0645	0700	0700	0755	0802	0831	0837	0901	0907	0930	1000	1031	1100	1131	1200	1231	1300	1330	1400	1431	1500
Slateford	d	0559	▼	0704	0704	▼	▼	0835	0841	▼	▼	0934	▼	1035	▼	1135	▼	1235	▼	1334	▼	1435	▼
Kingsknowe	d	0603	▼	0707	0707	▼	▼	0838	0844	▼	0911	0938	▼	1039	▼	1138	▼	1239	▼	1338	▼	1439	▼
Wester Hailes	d	0605	▼	0710	0710	▼	▼	0841	0847	▼	0916	0940	▼	1041	▼	1141	▼	1241	▼	1340	▼	1441	▼
Curriehill	d	0609	▼	0713	0713	▼	▼	0844	0851	▼	0920	0944	▼	1045	▼	1144	▼	1245	▼	1344	▼	1445	▼
Kirknewton	d	0616	▼	0721	0721	▼	▼	0852	0855	▼	0925	0952	▼	1053	▼	1153	▼	1253	▼	1353	▼	1453	▼
Livingston South	d	0621	0701	0726	0726	0810	0819	0858	▼	0917	▼	0958	1015	1058	1117	1158	1216	1257	1316	1358	1416	1458	1517
West Calder	d	0627	0707	0731	0731	0815	0825	0903	▼	0922	▼	1003	1020	1103	1122	1203	1221	1302	1321	1403	1421	1503	1522
Addiewell	d	0631	▼	0734	0734	▼	▼	0907	▼	▼	▼	1007	▼	1107	▼	1207	▼	1306	▼	1407	▼	1507	▼
Breich	d	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼	▼
Fauldhouse	d	0639	▼	0743	0743	▼	▼	0915	▼	▼	▼	1015	▼	1115	▼	1215	▼	1314	▼	1415	▼	1515	▼
Shotts	d	0644	0719	0747	0747	0827	0837	0920	▼	0934	▼	1020	1033	1120	1134	1220	1233	1319	1333	1420	1433	1520	1534
Hartwood	d	0647	▼	0750	0750	▼	▼	0923	▼	▼	▼	1023	▼	1123	▼	1223	▼	1322	▼	1423	▼	1523	▼
Cleland	d	0652	▼	0755	0755	▼	▼	0927	▼	▼	▼	1027	▼	1127	▼	1227	▼	1326	▼	1427	▼	1527	▼
Carfin	d	0656	▼	0758	0758	▼	▼	0931	▼	▼	▼	1031	▼	1131	▼	1231	▼	1330	▼	1431	▼	1531	▼
Holytown	d	0658	▼	0800	0800	▼	▼	0933	▼	▼	▼	1033	▼	1133	▼	1233	▼	1332	▼	1433	▼	1533	▼
Bellshill	a	0703	0729	0803	0803	0838	0847	0936	▼	0946	▼	1036	1045	1136	1146	1236	1246	1335	1347	1436	1446	1536	1546
Uddingston	a	0710	0757	0807	0826	0858	0858	0940	▼	0956	▼	1040	1056	1140	1201	1240	1258	1339	1359	1440	1456c	1540	1556
Cambuslang	a	0716	0803b	0831	0831	0903	0903	▼	▼	1001	▼	▼	1101	▼	1206	▼	1303	▼	1404	▼	1501c	▼	1601
Glasgow Central	a	0729	0752	0824	0829	0856	0908	0957	0959	1009	1015	1055	1102	1157	1210	1255	1309	1355	1409	1455	1509	1556	1612

Station		SX	SO			C	SO	SX				SO	SX		
Edinburgh	d	1526	1556	1556	1627	1657	1718	1748	1748	1756	1824	1856	1918	1927	2126	2256
Haymarket	d	1530	1600	1600	1631	1701	1723	1753	1753	1800	1828	1900	1923	1931	2130	2300
Slateford	d	1534	▼	▼	1635	▼	1728	1757	1757	▼	1831	▼	1927	1936	2134	2304
Kingsknowe	d	1538	▼	▼	1639	▼	1732	1800	1800	▼	1834	▼	1931	1939	2138	2307
Wester Hailes	d	1540	▼	▼	1641	▼	1734	1803	1803	1809	1837	▼	1933	1942	2140	2310
Curriehill	d	1544	▼	▼	1645	▼	1738	▼	▼	1812	1840	▼	1937	1945	2144	2314
Kirknewton	d	1553	▼	▼	1653	▼	1745	▼	▼	1820	1847	▼	1945	1954	2151	2321
Livingston South	d	1558	1615	1615	1657	1716	1750	1814	1814	1825	▼	1917	1949	1958	2156	2326
West Calder	d	1603	1620	1620	1702	1721	1756	1819	1819	1830	▼	1922	1954	2003	2202	2331
Addiewell	d	1607	▼	▼	1706	▼	1800	▼	▼	1833	▼	▼	1958	2007	2205	2334
Breich	d	▼	▼	▼	▼	▼	▼	▼	▼	1838	▼	▼	▼	▼	▼	▼
Fauldhouse	d	1615	▼	▼	1714	▼	1808	▼	▼	1842	▼	▼	2006	2015	2213	2342
Shotts	d	1620	1632	1632	1718	1733	1813	1831	1831	1846	▼	1934	2011	2020	2220	2347
Hartwood	d	1623	▼	▼	1721	▼	1816	▼	▼	1849	▼	▼	2014	2023	2223	2350
Cleland	d	1628	▼	▼	1726	▼	1821	▼	▼	1854	▼	▼	2018	2027	2227	2354
Carfin	d	1631	▼	▼	1729	▼	1824	▼	▼	1857	▼	▼	2022	2031	2231	2358
Holytown	d	1633	▼	▼	1731	▼	1826	▼	▼	1859	▼	▼	2024	2033	2233	0001
Bellshill	a	1635	1642	1646	1734	1743	▼	1841	1841	1903	▼	1946	2027	2036	2236	0004
Uddingston	a	1641	1655	1659	1738	1759	▼	1856	1856	1907	▼	1958	2032	2040	2240	0008
Cambuslang	a	▼	1700	1704	1744	1804	▼	1901	1851	1916	▼	2003	2102	2102	2305	0013
Glasgow Central	a	1657	1700	1709	1757	1802e	▼	1857	1904	1931	1953	2003	2047	2057	2255	0024

Remember
Light italic type indicates connecting train times.

Sundays

Station						
Edinburgh	d	1224	1423	1623	1824	2023
Haymarket	d	1228	1427	1627	1827	2027
Slateford	d	1232	1431	1631	1831	2031
Kingsknowe	d	1235	1434	1634	1834	2034
Wester Hailes	d	1238	1437	1637	1837	2037
Curriehill	d	1241	1440	1640	1840	2040
Kirknewton	d	1248	1447	1647	1847	2047
Livingston South	d	1253	1452	1652	1852	2052
West Calder	a	1300	1459	1659	1859	2059

Please note that there are no Sunday services between Addiewell and Glasgow Central.

Notes

a	Arrival time
b	Arrives 1 minute earlier on Saturdays
c	Arrives 3 minutes later on Saturdays
d	Departure time
e	Arrives 1809 on Saturdays
C	To Motherwell
SO	Saturdays only
SX	Saturdays excepted

minutes.

There is only a service between West Calder and Edinburgh on Sundays. Two coach class 156 DMUs form the main service providing 142 seats per set. There are no plans to electrify the line.

Seats

Thus, for two cities, about 65km apart, ScotRail provides four different direct routes and for much of the day operates at least ten trains an hour each way on them.

Each hour during the day ScotRail provides over 3,400 seats each way and from my observations there are times when all are needed. Loadings have increased considerably because of the frequency and high speeds.

Network Diagram for Tables 225, 228, 229, 230, 238, 240, 242

Key

- Tables 225, 228 229, 230, 238 240, 242 services
- Other services
- Limited service route
- Limited service station
- Bus link
- Inter-station bus link Central-Queen Street -Buchanan Street
- (T) Tram / Metro interchange
- Airport interchange

Numbers alongside sections of route indicate Tables with full service.

229, 240 **Inverness** — 240 Nairn — 240 Elgin — 240 Huntly — 229, 240 Inverurie — Dyce 229, 240

Forres 240 — Keith 240 — Insch 240 — 229, 240 **Aberdeen**

Carrbridge 229
229 Portlethen
Aviemore 229
229 Stonehaven
Kingussie 229
229 Laurencekirk
229 Montrose
Newtonmore 229
229 Arbroath
Dalwhinnie 229
229 Carnoustie
Blair Atholl 229
Golf Street 229
Pitlochry 229
Barry Links 229
Monifieth 229
Dunkeld & Birnam 229
Balmossie 229
Broughty Ferry 229
Dundee 229

Invergowrie 229
Leuchars 229
St Andrews Bus Station
Perth 229
229
Cupar 229
229

Helensburgh
Springfield 229

Ladybank 229

229 Gleneagles
242 Glenrothes With Thornton
Markinch 229

242 Cardenden
Kirkcaldy 229, 242
229, 230 Dunblane
242 Lochgelly
Kinghorn 242
242 Cowdenbeath
Burntisland 242
242 Dunfermline Queen Margaret
Aberdour 242
229, 230 Bridge of Allan
242 Dunfermline Town
Dalgety Bay 242

Rosyth 242
Inverkeithing 229, 242
229, 230 **Stirling**
Alloa 230
North Queensferry 242
North Berwick 238

229, 230 Larbert
Dalmeny 242
Musselburgh 238
Wallyford 238
Prestonpans 238

228, 229, 230 **Glasgow Queen Street** (T)
Falkirk 230 **Grahamston**
South Gyle 242
225, 228, 229 230, 238, 242 Haymarket

Camelon 230
228, 230 Linlithgow
238 Longniddry
238 Drem

Bishopbriggs 228, 230
Lenzie 228, 230
Croy 228, 230
Falkirk High 228
Polmont 228, 230
Edinburgh Park 230
Edinburgh 225, 228, 229 230, 238, 242

via Dalmuir, Dumbarton 226

Brunstane 242
Newcraighall 242

via Coatbridge, Airdrie, Bathgate, Livingston North 226

Slateford 225
Kingsknowe 225
Wester Hailes 225
Currichill 225
Kirknewton 225

Glasgow Central 225
238 Dunbar

226
Cambuslang 225
Uddingston 225
Bellshill 225
Holytown 225
Carfin 225
Cleland 225
Hartwood 225
Shotts 225
Fauldhouse 225
Breich 225
Addiewell 225
West Calder 225
Livingston South 225

Motherwell 225   Carstairs 225