

Glasgow Airport Rail Link

RailWorks Simulator Route Manual

Rev 1.01 April 2010

Contents

1	- Glasgow Airport Rail Link (GARL)	3
	1.1 Project Background	3
	1.2 The Route	3
2	- Getting Started	4
	2.1 Recommended Minimum Hardware Specification	4
	2.2 Graphics Settings	4
3	- Class 380 Electric Multiple Unit	5
	3.1 Overview	5
	3.2 Design & Specification	5
	3.3 Driver Cabin	6
4	- Signals	7
	4.1 Main Signal Head Aspects	7
	4.2 Theatre Type Signals	7
	4.3 Feather Type Signals	8
	4.4 Ground Signals and Position Light Signals	8
	4.5 Repeater Signals	9
5	- Speed Signs	9
	5.1 Permissible Speed Indicators	9
	5.2 Permissible Speed Warning Indicators	10
	5.3 Temporary Speed Restrictions	10
6	- Safety Systems	.11
	6.1 AWS (Automatic Warning System)	11
	6.2 TPWS (Train Protection and Warning System)	12
7	Entering an occupied section of track	. 13
8	Coupling Class 380 sets together	. 13
9	Credits	. 13
	0 - Scenarios	
-	10.1 GARL Easy Introduction	
	10.2 Disruption in Govan	
	10.3 Early Shift at Glasgow Central	
	10.4 GARL Shuttle Service	
	10.5 Sunday Engineering Works at Hillington	
	10.6 Unusual Movements	
1	1 – Route Map	.20

1 - Glasgow Airport Rail Link (GARL)

1.1 Project Background

The original project that was given the go ahead in 2006 was to provide a regular and fast rail service between Glasgow International Airport and Glasgow Central Station. Trains would call at Paisley Gilmour Street allowing passengers to connect to Ayrshire and Inverclyde services then travel non-stop to Glasgow.

A new 1.9km airport spur was to be constructed starting from Paisley St James. This would extend from the existing rail line on an elevated viaduct crossing the M8 motorway and terminating at a new terminal station located next to the existing airport car park. The 9km of existing track between Shields Junction and Paisley Gilmour Street station was to be upgraded by adding a third bi-directional relief line increasing overall route capacity. Two new platforms would also be built in Central Station accessed through the existing arch by extending platform 11a. The new rail link would provide a dedicated train service with a journey time of approx. 15 minutes.

On the 17th September 2009 GARL was cancelled by the Scottish Government due to budget cuts. However the line upgrade between Shields Junction and Paisley Gilmour Street station was still to go ahead along with the two new platforms in Glasgow Central. This RailWorks simulation is based in the year 2012 as if the project had gone ahead as originally planned.

1.2 The Route

The journey begins at Glasgow Central Station where we have modelled the terminus in great detail including the two new platforms 12 and 13 that are accessible through the arch. The complex track work has been carefully reproduced along with catenary spans and signal gantry placement.

The line leaves Central Station to the West past Shields Electric Traction Depot. This is where the new Class 380 trains will be stabled and serviced. The line between Shields Depot and Paisley Gilmour Street handles passenger services to Ayrshire (Ayr, Largs & Ardrossan) and Inverclyde (Gourock & Wemyss Bay) and has been constructed with the capacity increased for the additional Glasgow Airport service. To achieve this additional capacity a bi-directional relief line has been added between the existing Up and Down lines from Shields Junction through to the re-modelled Arkleston Junction, East of Paisley. The existing Up and Down lines have also been signalled for bi-directional working.

At Paisley Gilmour Street the line splits for Ayrshire services and continues Northwest for Inverclyde and Glasgow Airport traffic, the proposed Airport Junction is located shortly afterwards just prior to Paisley St James Station. This Airport Spur is of double track design and is elevated on a new 1.9km viaduct that extends over St James playing fields and the M8 motorway terminating at the futuristic Glasgow International Airport Station. The Airport Link journey from Glasgow should take approx. 15 minutes with one stop at Paisley Gilmour Street.

A detailed route map is provided at the end of this document in a 5 page printable format. We recommend you print this for reference prior to driving the included scenarios.



2 - Getting Started

2.1 Recommended Minimum Hardware Specification

As our GARL route is highly detailed and feature rich, we do recommend a slightly higher PC specification than that of RailWorks to gain the best simulation experience.

- OS Windows XP with latest service pack installed / Windows Vista / Windows 7
- CPU Intel Pentium 4 / AMD Athlon 3.0 GHz or equivalent
- RAM 2.0GB
- GFX 512MB DirectX 9.0c compliant video card, supporting Pixel Shader 3.0
- SFX Sound Blaster® X-Fi[™] series from Creative Labs
- HDD 4.5 GB of space is required to install the game

2.2 Graphics Settings

There are many ways to configure your video card and RailWorks and this manual does not intend to cover all of these options. However, if you need to increase performance then the following options may be of assistance. **REMEMBER!** You should only adjust settings if you are confident that you know what you are doing. Totalize Media Limited cannot take any responsibility for damage caused or loss of data due to altering computer settings as outlined below.

RailWorks Display Setting	Start with 1024 x 768 then gradually increase		
	resolution until you find the best setting for your PC		

RailWorks Procedural Flora	Turn this off for better performance

RailWorks High Detail Shadows Turn this off for better performance

RailWorks Object Texture

Lower the detail for better performance as this decreases the photographic terrain resolution

RailWorks Scenery Detail Slider On a lower specification PC this can be set lower to

remove scenery assets and detail. Try reducing to a setting between 5 and 9. Settings lower than 5 will remove detail such as catenary brackets and may detract significantly from the simulation experience.

GFX Anti-AliasingThe higher this is set the bigger the impact on your graphics card. Try 4X and gradually increase until you

find the best setting for your PC

GFX Anti-Aliasing Transparency This setting can have one of the highest impacts on

system performance. Supersampling looks great but has the highest impact. Multisampling is a good compromise and best performance can be achieved

with this effect turned off.



3 - Class 380 Electric Multiple Unit



3.1 Overview

Initially, the trains will be used for ScotRail services in Ayrshire and the Inverclyde region of Scotland and had also been intended for the cancelled Glasgow Airport Rail Link.

A total of 38 sets were ordered, comprising 22 three-car and 16 four-car units. Stations along the Ayrshire Coast Line and Inverclyde Line will undergo platform extension to allow the use of the longer trains. The trains were specified to have full access for the disabled and to have streamlined end corridor connections. The fleet will be based at Shields Electric Traction Depot.

On the unveiling of the first completed vehicle, it was announced that the fleet would be divided into two sub-groups, with the 3-car units classified as Class 380/0 and the 4-car units as Class 380/1.

Our 380 model features animated gangway corridor connections and these automatically close up on coupling sets together.

3.2 Design & Specification

TOPS Number Class 380

Formation 3-car 380/0:DMSO+PTOSLW+DMSO

4-car 380/1:DMSO+PTOSLW+TOSL+DMSO

Weight 180 tonnes (4-car)
Per Car Length 66ft (20.4m)

Width 9ft (2.796m)

Body Construction Aluminium

Articulation Inter-unit and inter-vehicle flexible diaphragm

Power per DMSO 775kW

Design Speed100 M.P.H. (160km/h)Brake TypesRegenerative, Rheostatic, Air

Voltage 25 kV AC Overhead



3.3 Driver Cabin



	Control Name	Description
1	Throttle Brake Controller	Push forward for Brake in 4 steps, Centre for
		off and pull back for throttle
		Maximum design speed is 100 M.P.H.
		Maximum Line Speed for GARL is 75 M.P.H.
2	Reverser	Forward, Neutral and Reverse
3	AWS Acknowledge Button	(See safety systems section of this manual)
4	Horn	Warning Horn
5	Wiper Switch	Windscreen Wipers On/Off
6	Pantograph Switch	Raise and Lower Pantograph
7	Headlight Switch	Off / Headlights / Taillights
8	Air Brake Pipe Gauge	Current Brake Pipe Pressure
9	Speedometer	Current Speed
10	AWS Sunflower Indicator	(See safety systems section of this manual)
11	Doors Locked Indicator Lamps	Illuminated in blue when train doors locked
12	Sander Button	Apply sand to track for added traction
13	LCD Throttle Brake Position	Displays current position of Throttle Brake
	Indicator	
14	LCD Headlight Setting Indicator	Displays current Headlights or Taillights
Key B	On Train Communication Bell	Keyboard "B" sounds the Bell tone

4 - Signals

4.1 Main Signal Head Aspects









Colour light signals are used for controlling running movements. They display aspects by means of red, yellow and green coloured lights.

Signal Aspect	Description	Instruction to Driver	
Red light	Danger	Stop.	
Single yellow light	Caution	Proceed: be prepared to stop at	
		the next signal.	
Double yellow lights	Preliminary caution	Proceed: be prepared to find the	
		next signal displaying one yellow	
		light.	
One flashing yellow light	Preliminary caution for	Proceed: Be prepared to find the	
	a diverging route	next signal displaying one yellow	
		light with feather junction indicator	
		for diverging route(s).	
Double flashing yellow lights	Indication of diverging	Proceed: Be prepared to find the	
	route ahead of the next	next signal displaying one flashing	
	but one signal	yellow light.	
Green light	Clear	Proceed: The next signal is	
		displaying a proceed aspect.	

4.2 Theatre Type Signals



A Theatre alphanumeric route indicator indicates the route to be taken using numbers or letters (or a combination of numbers and letters).

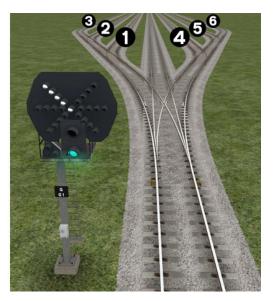
The examples shown opposite indicate routing on to the "Down Ayr Line" and routing on to "Glasgow Central Line 4".

Full details of all Theatre indications for the GARL route are shown on the route map provided at the end of this document.

4.3 Feather Type Signals

A Feather junction indicator indicates a diverging route to be taken by the angle at which a line of five white lights is displayed. (Position 1 shown)





Feather Indication	Instruction to Driver	
No Feather Indication	Obey main aspect, straight-ahead route is set	
Position 1 indication	Obey main aspect, expect divergence to left	
Position 2 indication	Obey main aspect, expect divergence to left more extreme than that for position 1	
Position 3 indication	Obey main aspect, expect divergence to left more extreme than that for position 2	
Position 4 indication Obey main aspect, expect divergence to r		
Position 5 indication	Obey main aspect, expect divergence to right more extreme than that for position 4	
Position 6 indication	Obey main aspect, expect divergence to right more extreme than that for position 5	

4.4 Ground Signals and Position Light Signals





Ground Signals and Position Light Signals (PLS) display their aspects by means of the position and colour of lights. Ground Signals are always illuminated and can have miniature theatre indicators attached whereas PLS only illuminate to allow a train to pass in to an occupied section of line and are mounted as an addition to a main signal head.

Signal Aspect	Description	Instruction to Driver	
Two red lights	Danger	Stop.	
No aspect		Obermein eenest	
(where associated with a	main aspect)	Obey main aspect.	
Two white lights	Caution	The line ahead may be occupied. Proceed	
		cautiously towards the next stop signal, stop	
		board or buffer stops. Be prepared to stop short of	
		any obstruction. The associated main aspect	
		(where provided) may be passed at danger	



4.5 Repeater Signals





A banner repeater signal indicates whether the signal ahead is displaying a proceed aspect or is at danger. Modern fibre optic banner repeating signals, as shown opposite, consist of a rectangular unlit black background displaying a white circle with a black bar.

Signal Display	Instruction to Driver
Horizontal arm	Be prepared to find the related signal at danger
Arm at an upper	Related signal is exhibiting a proceed aspect
quadrant angle of 45°	helated signal is exhibiting a proceed aspect

Repeater signals are intended to provide a driver with advance information of a signal that may be obscured on approach. A train does not need to stop at a repeater signal, only at the related signal if it is at danger.

Splitting banner signals provide two banner signal heads combined to form a splitting banner repeating signal. These are used to indicate the aspect of a signal with a feather junction indicator. If the related junction signal is displaying an illuminated feather then the lower banner head displays an arm at an upper quadrant angle of 45°. Alternatively, if the related junction signal is not displaying an illuminated feather and is indicating a straight ahead route then the higher "main" banner head displays an arm at an upper quadrant angle of 45°.



Another type of repeater is an "OFF" platform indicator.

Signal OFF indicators are provided to assist train dispatch staff. An OFF indicator displays the illuminated word 'OFF' only when the signal(s) to which it applies is displaying a proceed aspect. No indication is shown when the signal is at danger.

5 - Speed Signs

5.1 Permissible Speed Indicators



These signs display the permissible speed in M.P.H. applicable to the section of line beyond the sign up to the commencement of any subsequent permissible speed section.

Remember to wait for the complete length of your train to pass these signs before accelerating if the permissible line speed is increasing. If the permissible line speed is decreasing then you must reduce your speed before passing these signs.



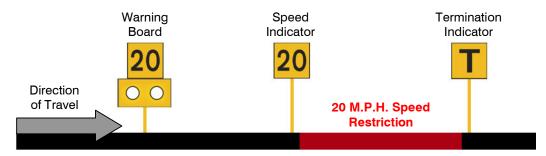
5.2 Permissible Speed Warning Indicators



These signs provide advance warning of a reduction in permissible speed ahead. Permanent AWS Ramps (Automatic Warning System) are often installed in conjunction with these signs. In these cases the driver must cancel the AWS warning when triggered on approach to these signs.

(See safety systems section of this manual)

5.3 Temporary Speed Restrictions



Temporary speed restrictions are normally put in place when engineering works and track maintenance is taking place. These temporary speed restrictions are advised in the drivers' weekly operating notice and in this simulation are advised in your scenario briefing. The normal sequence of trackside signage is shown above.

However, when line speeds need to be reduced at short notice they are referred to as an "Emergency Speed Restriction" and are additionally protected by providing an "Emergency Indicator" prior to the temporary speed restriction warning board. The emergency indicator has two synchronous flashing white lights.

Temporary Sign	Description	Instruction to Driver
	Emergency Indicator	This sign warns that there is a warning board ahead for an emergency speed restriction that has not been previously advised.
20	Warning Board	This sign provides warning of a restriction speed indicator ahead.
R	Repeater Warning Board	This sign provides a reminder of a restriction speed indicator ahead. It is normally used where a driver has set off from a platform after passing a warning board



→	Restriction Directional Arrow	This sign is always associated with either a warning board, a speed indicator or a spate indicator.
20	Restriction Speed Indicator	This sign indicates the start of a temporary speed restriction with the value shown in M.P.H. You must reduce your speed before passing these signs.
T	Restriction Termination Indicator	This sign identifies the end of a temporary speed restriction. Remember to wait for the complete length of your train to pass this sign before accelerating back to normal line speed.
	Restriction Spate Indicator	This sign identifies that the temporary speed restriction, at that location as previously advised, is now not in force.

6 - Safety Systems

6.1 AWS (Automatic Warning System)



AWS is provided to give train drivers in-cab warnings of the approach to signals, reductions in permissible speed and temporary/emergency speed restrictions, and to apply the brakes in the event that a driver does not acknowledge cautionary warnings given by the system.

As a train approaches a signal, it passes over AWS track equipment (magnets) which are fixed to the sleepers between the running rails. The magnets are sensed by a receiver mounted under the leading end of the train.

If the signal ahead is displaying a clear aspect (green), a bell (or an electronic ping) sounds in the driver's cab, and the AWS Sunflower indicator displays "all black". No action in respect of the AWS is required of the driver.

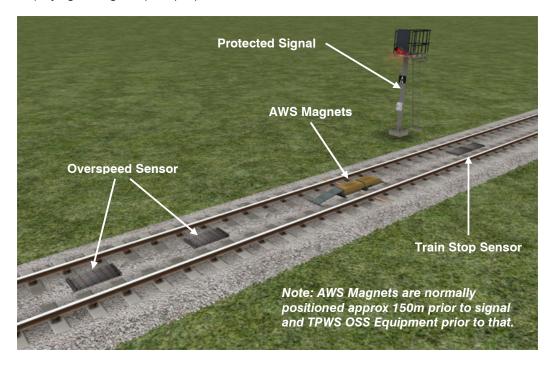
If the signal is displaying a caution or danger aspect (yellow, double yellow or red), a horn sounds in the driver's cab and the display shows "all black". The driver has to acknowledge the warning by pressing the "AWS Acknowledgement" push button. When the driver operates the push button, the horn is silenced and the AWS Sunflower changes to a segmented yellow and black circular display. If the driver fails to acknowledge the warning horn within a set time period, the brakes are applied automatically.

Where AWS equipment is provided on the approach to reductions in permissible speed and temporary/emergency speed restrictions, the cab equipment always operates in a manner equivalent to the approach to a signal displaying a caution or stop aspect. The driver receives a warning and has to respond to it accordingly; otherwise the brakes are applied automatically.



6.2 TPWS (Train Protection and Warning System)

The primary purpose of TPWS is to minimise the consequence of a train passing a TPWS fitted signal at danger and a train overspeeding on approach to a TPWS fitted signal at danger. TPWS track equipment is only active when the signal that they are protecting is displaying a danger aspect (red).



There are two pairs of grids mounted between the running rails. Both pairs consist of an 'arming' and a 'trigger' grid. The first pair, the Overspeed Sensor (OSS), are positioned on approach to the protected signal. The other pair of grids are mounted back to back at the signal location, and these form the Train Stop Sensor (TSS).

The emergency train brakes are automatically applied if a train passes over an active Overspeed Sensor faster than a predetermined speed (in the GARL simulation this preset speed is between 20 and 25 M.P.H. dependent on line speed and location). The brakes are also automatically applied if a train passes over an active Train Stop Sensor at any speed, as the signal it is protecting must be at danger.

After passing a signal displaying a caution aspect (single yellow) it is advisable to reduce your train speed to anticipate the approach to the next signal. It may be at danger and therefore the TPWS Overspeed Sensor will be active and will trip an emergency stop if your train speed is greater than the preset approach speed when you pass over it.

TPWS "Mini OSS" grids are also installed at terminus stations (Glasgow Central and Glasgow International Airport). These grids are positioned approx 50m prior to the buffer stops and are preset to 12 M.P.H. Your train must be traveling at less than 12 M.P.H. when passing over these grids when arriving in to these platforms.



7 Entering an occupied section of track

During a scenario your train may be scheduled to enter a platform or section of track that is already occupied by another train or rolling stock. In this situation you should stop at the red signal protecting this section of track as normal. Once your train has stopped press the TAB key on your keyboard to request permission from the signalling centre to enter the occupied section of track. When your train movement is approved the signal will illuminate the two white lights on the position light signal if it has one.

8 Coupling Class 380 sets together

We recommend that "Automatic Coupling" is set to "On" in RailWorks options before running any scenarios. (Home > Options > Gameplay)

When coupling up to another Class 380 set you should stop just short of the other train then move forward slowly at about 2 M.P.H. until coupling commences and the gangways between the sets extend. As soon as coupling commences remember to apply the train brake. You can then navigate to another driver cabin on the new train formation by pressing CTRL and + together on your keyboard.

9 Credits

Lead Developer Alan Thomson
Totalize Media Team Alan Cunningham
John Edgar

GARL has been a complex undertaking and we would like to thank everyone who helped in its development including the Railsimulator.com team.



Terrain height data for the GARL project was converted with a commercial licensed copy of ReDem from Zugware.com

10 - Scenarios

Please take time to read each Scenario Briefing as these explain your scheduled tasks and make completion of the scenarios much easier. It is important to follow the timetabled departure times and you can also print the Route Map at the end of this document for reference.

10.1 GARL Easy Introduction

Quick introductory trip from Paisley to the Airport

To familiarise you with GARL this short trip involves reversing the train and picking up passengers. Set off now and drive through Paisley Gilmour Street station in to Arkleston Down Goods Loop. We will be reversing our train here so you only need to drive far enough down the loop so that the rear of your train has passed the departure signal (Signal GP6059) then come to a stop. You will be given further instructions when you stop at the loop. It is easier to follow scenarios by displaying the on-screen "Drivers Guide" - press F3 on your keyboard now to enable this. You can also make driving easier by pressing F4 to display the on-screen "Simple Heads Up Display" that shows your reverser position, current speed, throttle position and brake position.

• Date 9th September 2012

Time 09:30
Rating Easy
Duration 10 Minutes
Weather Overcast

Start Location Paisley (Up Ayr Line)
 Train 380101 GARL Test Train

Location	Arrive	Depart
Up Ayr Line	-	09:30:30
Arkleston Down Goods Loop	09:33:30	09:34:00
Paisley Gilmour Street Platform 2 (Passenger Station Stop)	09:36:00	09:37:00
Glasgow International Airport Platform 2	09:42:00	-

10.2 Disruption in Govan

Return trip from Glasgow International Airport to Glasgow Central Station

You are rostered to drive the 13:17 GARL Shuttle Service from Glasgow International Airport Platform 2 to Glasgow Central. At Glasgow your train will form the 13:38 service back to the Airport. Your only scheduled stop in each direction will be Paisley Gilmour Street. Your train is formed from 380107+380109, an 8 car Class 380/1 set, remember to stop at the correct platform positions to ensure all coaches are within the platform limits. There are reports of a failed train in the Govan area. Open the train doors now by pressing T on your keyboard and remember to wait until 13:17 to depart.

Date 7th March 2012

Time 13:15
Rating Medium
Duration 40 Minutes
Weather Cloudy Showers

Start Location Glasgow International Airport Platform 2

• Train 380107+380109 GARL Shuttle

Location	Arrive	Depart
Glasgow International Airport Platform 2	-	13:17:00
Paisley Gilmour Street Platform 1 (Passenger Station Stop)	13:21:00	13:22:00
Glasgow Central Platform 12 (Passenger Station Stop)	13:36:00	13:38:00
Paisley Gilmour Street Platform 2 (Passenger Station Stop)	13:48:00	13:49:00
Glasgow International Airport Platform 1	13:53:00	-

10.3 Early Shift at Glasgow Central

First morning stopping service from Glasgow Central to Glasgow International Airport

You are rostered to form the first GARL Stopping Service from Glasgow Central Platform 10 to Glasgow International Airport Platform 1. Your train is to be formed from 380008, which is stabled in Glasgow Central Siding No. 4, and 380002 that is already in Platform 10. You need to drive set 380008 in to Platform 10 and couple up (If "Automatic Coupling" is not enabled on the RailWorks Option Screen you will need to press CTRL and SHIFT and C together to complete the coupling procedure). As Platform 10 is already occupied you will need to stop at signal GG5527 on the main signal gantry and contact the signalling centre by pressing the TAB key on the keyboard to request permission to enter Platform 10. As your train formation is a 6 car set remember to stop at the correct platform positions to ensure all coaches are within the platform limits. This is a tight schedule so try to stay on time.

Date 21st December 2012

Time 05:55
 Rating Advanced
 Duration 25 Minutes
 Weather Clear

Start Location Glasgow Central Siding No. 4
 Train 380008 GARL Stopping Service

Location	Arrive	Depart
Glasgow Central Siding No. 4	-	05:56:00
Glasgow Central Platform 10 (Passenger Station Stop)	05:58:00	06:00:00
Cardonald Platform 2 (Passenger Station Stop)	06:06:00	06:07:00
Hillington East Platform 2 (Passenger Station Stop)	06:08:00	06:09:00
Hillington West Platform 2 (Passenger Station Stop)	06:10:00	06:11:00
Paisley Gilmour Street Platform 2 (Passenger Station Stop)	06:14:00	06:15:00
Glasgow International Airport Platform 1	06:19:00	-

10.4 GARL Shuttle Service

Return trip from Glasgow Central Station to Glasgow International Airport

You are rostered to drive the 11:00 GARL Shuttle Service from Glasgow Central Platform 12 to the airport. At the airport your train will form the 11:17 service back to Glasgow. Your only scheduled stop in each direction will be Paisley Gilmour Street. Your train is 380103, a 4 car Class 380/1 unit, remember to stop at the correct platform positions to ensure all coaches are within the platform limits. Open the train doors now by pressing T on your keyboard and remember to wait until 11:00 to depart.

Date 2nd April 2012
 Time 10:58

Rating EasyDuration 35 MinutesWeather Clear

• Start Location Glasgow Central Platform 12

• Train 380103 GARL Shuttle

Location	Arrive	Depart
Glasgow Central Platform 12	-	11:00:00
Paisley Gilmour Street Platform 2 (Passenger Station Stop)	11:10:00	11:11:00
Glasgow International Airport Platform 1 (Passenger Station Stop)	11:15:00	11:17:00
Paisley Gilmour Street Platform 1 (Passenger Station Stop)	11:21:00	11:22:00
Glasgow Central Platform 12	11:32:00	-

10.5 Sunday Engineering Works at Hillington

Watch out for Temporary Speed Restrictions from Paisley St James to Glasgow Central then on arrival your train will form the GARL Shuttle Service to the Airport

It is Sunday and today you are in charge of 380109. This scenario picks up your train just before Paisley St James station on its return journey from Gourock. Your service to Glasgow Central is timetabled to stop at all stations and on arrival at Glasgow Central your train will form the 11:57 GARL Shuttle Service to Glasgow International Airport calling at Paisley Gilmour Street only. This is a tight schedule and there are also Temporary Speed Restrictions in the Hillington area - refer to your GARL Route Manual for details of TSR signs and what action you should take.

Date 10th June 2012

Time 11:30
 Rating Medium
 Duration 45 Minutes

Weather Stormy Heavy Rain

Start Location Paisley St James (Up Gourock Line)

• Train 380109 Sunday Roster

Location	Arrive	Depart
Paisley St James Platform 1 (Passenger Station Stop)	11:31:00	11:32:00
Paisley Gilmour Street Platform 1 (Passenger Station Stop)	11:35:00	11:36:00
Hillington West Platform 1 (Passenger Station Stop)	11:39:00	11:40:00
* 10MPH Temporary Speed Restriction on Up Gourock Line	-	-
Hillington East Platform 1 (Passenger Station Stop)	11:43:00	11:44:00
Cardonald Platform 1 (Passenger Station Stop)	11:45:00	11:46:15
Glasgow Central Platform 10 (Passenger Station Stop)	11:54:00	11:57:00
* 25MPH Temporary Speed Restriction on Up Ayr Line after Hillington East	-	-
Paisley Gilmour Street Platform 2 (Passenger Station Stop)	12:09:00	12:10:00
Glasgow International Airport Platform 1	12:14:00	-

10.6 Unusual Movements

Driver route learning around Glasgow and Shields Depot

After the recent re-signalling schemes, trainee drivers are rostered for route knowledge special services from Shields Road Depot. These training runs are to cover the more unusual routes to and from the depot and movements in and out of Glasgow Central Station. Today you will be driving 380107 from Shields Depot Line 9, reversing on the No. 1 Line then following the instructor's directions on-screen and on the Drivers Guide (press F3 on your keyboard to display this guide). When you need to move to the other cabin (change ends) press CTRL and + together on your keyboard. Wait until 14:31 to depart.

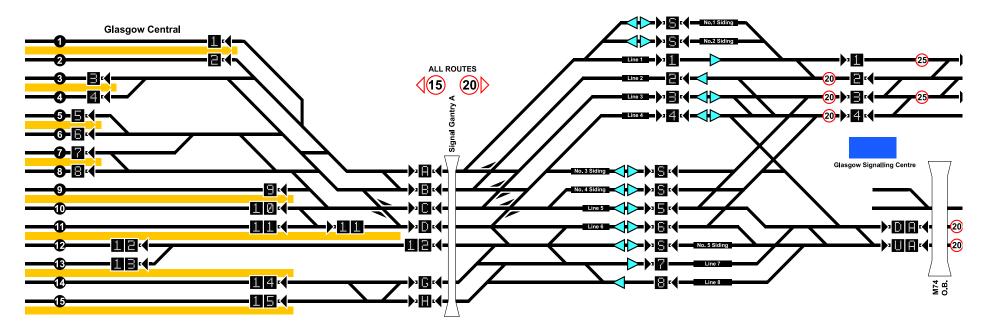
Date 21st August 2012

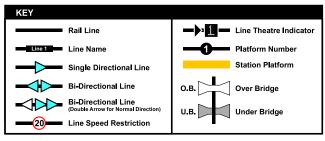
Time 14:30
Rating Advanced
Duration 45 Minutes
Weather Clear

Start Location Shields Depot Line 9

• Train 380107 Driver Training Special

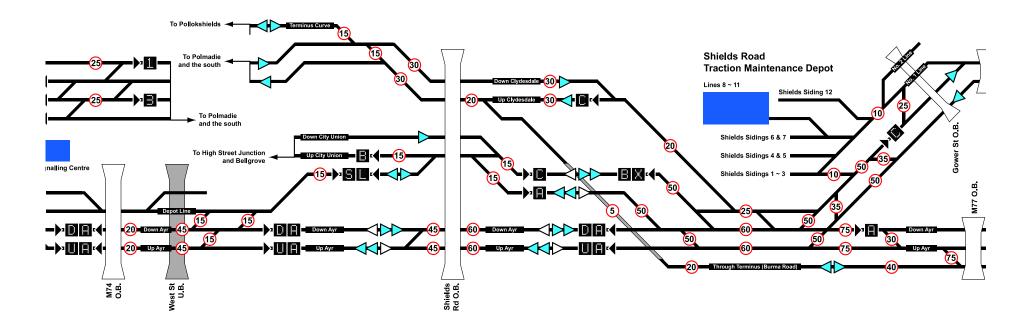
Location	Arrive	Depart
Shields Depot Line 9	-	14:31:00
Reverse train out of depot on the No.1 Line	-	-
Down Terminus	14:35:00	14:36:00
Arkleston Down Goods Loop	14:51:00	14:54:00
Glasgow Central Line 6 (stopping AS CLOSE AS POSSIBLE to signal GG5487)	15:03:00	15:04:00
Glasgow Central Line 3 (stopping at signal GG5228)	15:05:00	15:06:00
Glasgow Central Platform 3	15:09:00	15:10:00
Shields Depot No. 1 Line	15:15:00	-





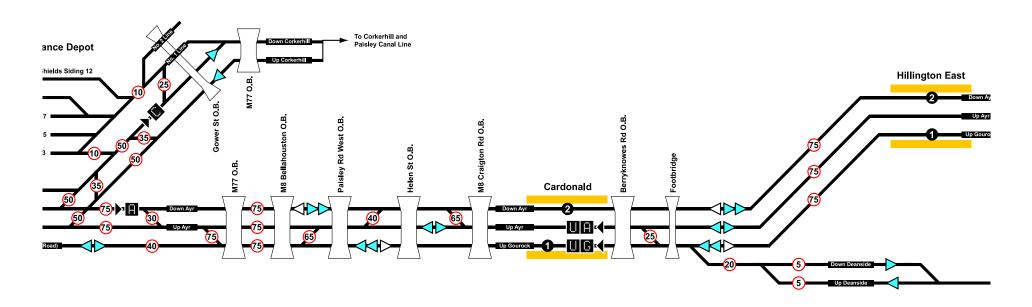
Sheet 1 of 5





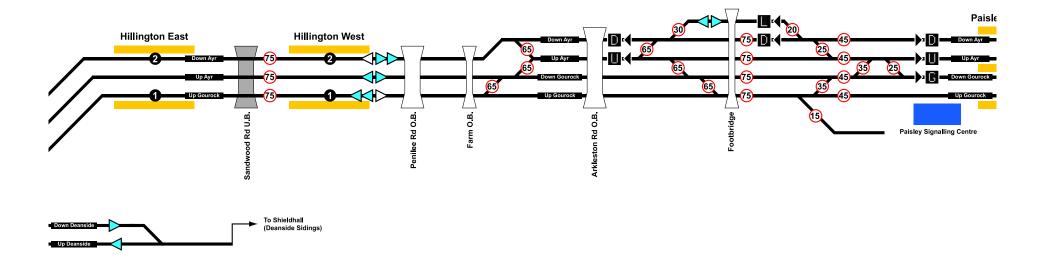
Sheet 2 of 5





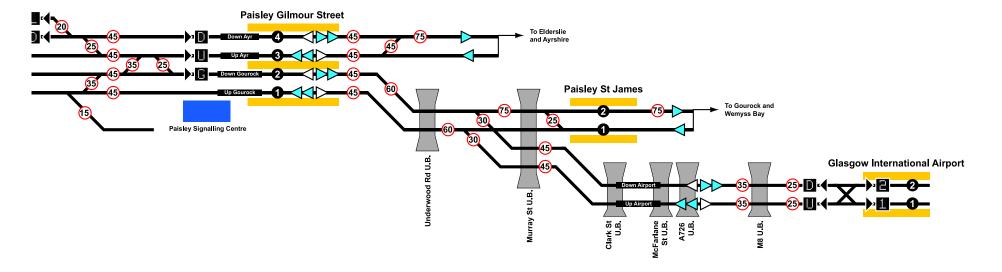
Sheet 3 of 5





Sheet 4 of 5





Sheet 5 of 5

