

DART 40

at the Dublin History Festival

Sunday 13 October 2024



Monday 23 July 1984. The 07:40 DART from Bray leaves Salthill for Howth on the first day of electric operation, exactly on time at 07:58. (Photo © Michael J. Walsh)



The DART was a blend of everything. When you think of it, it was amazing. It all came together and worked. The trains were German, the traction equipment on the trains was GEC, so that was British. The overhead line equipment was Siemens, so that was German. The power stations, the substations and the switch houses, they were all French. The signalling was American and all the civils works and track works were Irish and all these things had to come together.

Eugene Fox, Retired Senior Specialist Engineer

DART Project Chronology

Jun 1979	Project approval.
Dec 1979	Tenders invited.
Feb 1980	First new trackwork installed.
Apr 1980	First alterations to layout at Connolly and first station reconstruction work.
May 1980	New suburban station entrance brought into use at Connolly. EEC funding announced.
Jun 1980	First bridge renewal. First new trackwork installed south of Connolly.
Oct 1980	First footbridge raised. Electrical power demand requirements estimated. Fully signalled single line working introduced between Dún Laoghaire and Sandycove (1.5 km) to permit preparatory excavation work for slab track.
Jan 1981	Contracts let for rolling stock and brake gear.
Feb 1981	Connolly inter-platform subway constructed
Mar 1981	First lineside signalling equipment installed.
Apr 1981	Sandycove-Dún Laoghaire Up line slab track installation completed.
May 1981	First trackside signalling and telecommunications cables installed.
Jun 1981	Contracts let for supply of electrical substation equipment and for overhead catenary and supports. Construction of substations and switchhouses under way. Sandycove-Dún Laoghaire Up line returned to traffic fully signalled for single line working.
Jul 1981	First catenary mast foundations installed
Aug 1981	Ossory Road double junction (10 point ends) installed north of Connolly station. CTC buildings being extended to accommodate new suburban control room. Footbridge erected at Dún Laoghaire to enable level crossing closure.

Sep 1981	Major layout alterations at Connolly.
Oct 1981	<p>Installation of first signalling interlocking equipment.</p> <p>Installation of first lengths of continuously welded rail on suburban lines.</p> <p>Installation of first 38kV feeder (at Bayside substation).</p>
Nov 1981	<p>First catenary masts installed.</p> <p>Down line slab track complete and normal double line working restored between Dún Laoghaire and Sandycove.</p> <p>New station concourse construction started at Pearse.</p>
Dec 1981	First level crossing roadway renewed with precast panels.
Jan 1982	Substation equipment installed.
Feb 1982	First new signalling interlocking commissioned (at Howth) with local panel operation.
Apr 1982	Fairview shed closed to permit reconstruction as EMU depot.
May 1982	<p>First catenary wiring installed.</p> <p>Reinforced earth construction of embankment for new "third road" north of Connolly under way.</p> <p>Track raising in progress between Blackrock and Salthill to obviate sea flooding.</p> <p>New concourse at Pearse in service.</p> <p>Subways under construction at Sandymount and Lansdowne Road stations.</p>
Jun 1982	<p>New signalling commissioned (with new track layout) at Malahide fringe box.</p> <p>First trackwork changes at Pearse.</p> <p>First tests of loco-mounted CAWS equipment.</p>
Jul 1982	First alignment checks of catenary using rail mounted pantograph.
Aug 1982	First level crossing fitted with barriers and road warning lights (under local control).

Sep 1982	Tracklaying under way in Fairview depot. 38kV supply to Bayside substation New carriage washing plant under construction at Connolly. Train radio masts erected.
Oct 1982	Further track layout alterations at Connolly.
Nov 1982	Further track layout alterations at Connolly. Reinforced earth retaining wall under construction at Fairview depot.
Dec 1982	New signalling interlockings commissioned at Pearse and Booterstown.
Jan 1983	Structure clearance trials conducted with gauging train. EMU washing plant installed at Fairview depot. Four substations Further track layout alterations at Connolly. Catenary mast installation at Connolly completed.
Feb 1983	First track layout changes at Bray. First EMU landed at Dublin. First section (Howth Junc.-Howth) energised. First CCTV equipment installed at a level crossing.
Mar 1983	Trial running of EMUs started.
Apr 1983	New carriage wash plant at Connolly in use. Trackside signal installation under way in final section (Bray-Greystones).
May 1983	New signalling interlocking (complete with final track layout) commissioned at Connolly. Last signalling relay room interlocking equipment being installed.
Jun 1983	Track relaying Pearse-Dalkey.
Jul 1983	Track relaying Pearse-Dalkey.

Aug 1983	Signalling interlocking commissioned at Bray.
Sep 1983	Last signalling interlocking (Greystones fringe box) commissioned. Construction of new carriage valetting plant at Connolly started. Last catenary mast installed (at Bray). All catenary north of Connolly energised.
Oct 1983	Catenary energised south to Dún Laoghaire.
Nov 1983	Operation of trial and driver training EMUs in electrified area. Rolling stock delivery 50% complete.
Dec 1983	First electric train reaches Bray.
Jan 1984	Completion of EMU testing at Bray.
Feb 1984	Computer based centralised signalling control console commissioned.
Mar 1984	Conversion of gated level crossings to barrier operation.
Apr 1984	Conversion of further gated level crossings to barrier operation. First of public relations EMU trips.
May 1984	Conversion of gated level crossings to barrier operation completed. Installation of CWR south of Pearse. Timetable trial running with night time simulation of peak hour services.
Jul 1984	Introduction of public electric services from July 23. Introduction of locomotive cab signalling and train radio equipment.
Oct 1984	DART officially inaugurated by An Taoiseach, Dr. Garrett Fitzgerald (The Prime Minister) on October 22.

“ Quite a few staff were engineers, recruited straight as graduates out of college, which very quickly formed a team of young enthusiastic engineers, excited to be working on this project.

Peter Cuffe, Retired Chief Safety & Security Officer



DART Precursor 1891

Dublin, Wicklow, and Wexford Railway.
OPENING
OF THE
City of Dublin Junction Railways (Loop Line)
IN CONNECTION WITH
THE GREAT NORTHERN RAILWAY,
On and after **FRIDAY, 1st MAY, 1891.**

Week Day Train Service—Bray to Howth.

B&T	—	Arrivals										Departures										
		8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	
Kingstone	—	—	9.21	9.21	10.21	11.21	12.21	13.21	—	—	2.21	3.21	4.21	5.21	6.21	—	—	—	—	—	—	
Blaauwkrug	—	—	—	8.35	9.35	10.35	11.35	12.35	13.35	—	—	2.35	3.35	4.35	5.35	6.35	—	—	—	—	—	—
Westdene-raw	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Do.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Alma-street (Loop Line)	arrival	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	8.09	
Do.	departure	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	8.42	
Do.	(Gt. St. Barbara)	departure	9.0	9.0	9.45	10.45	11.45	12.45	13.45	14.45	—	2.45	3.45	4.45	5.45	6.15	7.15	—	—	—	—	—
Howick	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Do.	arrival	—	—	10.5	11.1	12.5	13.1	14.5	15.1	—	—	2.5	3.5	4.5	5.5	6.35	7.35	—	—	—	—	—

Mails and Passengers on arrival of Steamer at Garibaldi Pier (Kingstown), due at 6.10 a.m. leave by Through Carriages in connection with Limited Mail for Belfast and the North.

Week Day Train Service—Howth to Bray.

Hour (Great Northern)	Departure	Mail											
		A.M.	A.M.	A.M.	P.M.								
Amherst-street	arrival	—	10 10	11 12	11 10	11 10	11 10	11 10	11 10	11 10	11 10	11 10	11 10
Do. (Loop Line)	arrival	9 34	10 34	11 34	12 34	1 34	2 34	3 34	4 34	5 34	6 34	7 34	8 34
Westland-street	arrival	9 37	10 37	11 37	12 37	1 37	2 37	3 37	4 37	5 37	6 37	7 37	8 37
Do.	departure	9 45	10 45	11 45	12 45	1 45	2 45	3 45	4 45	5 45	6 45	7 45	8 45
Blackrock	—	9 55	10 55	11 55	12 55	1 55	2 55	3 55	4 55	5 55	6 55	7 55	8 55
Kingstown	arrival	9 58	10 58	11 58	12 58	1 58	2 58	3 58	4 58	5 58	6 58	7 58	8 58
Do.	departure	9 55	10 59	11 59	12 59	1 59	2 59	3 59	4 59	5 59	6 59	7 59	8 59
Blay	arrival	10 30	11 30	12 30	1 30	2 30	3 30	4 30	5 30	6 30	7 30	8 30	9 30

Through Germany by United Mail, London, P-101 at 2.22 p.m. [11] to New York by Mail Steamer *Leviathan*, Cunard Line (Kingstown) about 7.25 p.m.

Sunday Train Service—Bray to Howth

Sunday Train Service—Bray to Howth.														
Bar.	—	—	departure	AM	AM	AM	AM	AM	AM	PM	PM	PM	PM	PM
Kingstown	—	—	9.21	10.21	11.21	12.21	1.21	2.21	3.21	3.21	4.21	5.21	6.21	6.21
Blackrock	—	—	9.21	10.25	11.25	12.25	1.25	2.25	3.25	4.25	5.25	6.25	6.25	6.25
Westland Row	—	—	arrived	9.15	10.15	11.15	12.15	1.15	2.15	3.15	4.15	5.15	6.15	6.15
Do.	—	—	departure	9.19	10.19	11.19	12.19	1.19	2.19	3.19	4.19	5.19	6.19	6.19
Amiens Street (Loop Line)	—	—	arrived	9.16	10.42	11.42	12.42	1.42	2.42	3.42	4.42	5.42	6.42	6.42
Do. (Great Northern) departure	—	—	9.16	10.45	11.45	12.45	1.45	2.45	3.45	4.45	5.45	6.45	6.45	6.45

8 11 8 12 5 1 5 9 8 3 5 4 3 5 5 8 9 7 9

Sunday Train Service—Howth to Bray.														
Howth (Great Northern)	...	departure	10.10	11.10	12.10	1.20	2.10	3.10	4.10	5.10	6.10	7.10	8.10	9.10
Amiens-street do.	...	arrival	10.32	11.32	12.32	1.32	2.32	3.32	4.32	5.32	6.32	7.32	8.32	9.32
Do. (Loop Line)	...	departure	10.34	11.34	12.34	1.34	2.34	3.34	4.34	5.34	6.34	7.34	8.34	9.34
Wexford-cow	...	arrival	10.57	11.57	12.57	1.57	2.57	3.57	4.57	5.57	6.57	7.57	8.57	9.57
Do.	...	departure	10.45	11.45	12.45	1.45	2.45	3.45	4.45	5.45	6.45	7.45	8.45	9.45
Blackrock	...	arrival	10.53	11.53	12.53	1.53	2.53	3.53	4.53	5.53	6.53	7.53	8.53	9.53
Kingstown	...	arrival	10.58	11.58	12.58	1.58	2.58	3.58	4.58	5.58	6.58	7.58	8.58	9.58
Do.	...	departure	10.49	11.49	12.49	1.49	2.49	3.49	4.49	5.49	6.49	7.49	8.49	9.49
Bally	...	arrival	11.10	12.10	1.20	2.20	3.20	4.20	5.20	6.20	7.20	8.20	9.20	10.20

FARES:

FARES													
	1st Class	2nd Class	3rd Class	1st Class	2nd Class	3rd Class	1st Class	2nd Class	3rd Class				
Between Westland-row and Amiens-street—Singles	... 0	4	0	3	0	2	Return	0	6	0	4	0	3
Between Westland-row and Howth	... 1	8	1	3	0	10	"	2	6	1	10	1	3
Between Bray and Amiens street	... 2	4	1	9	1	2	"	3	4	2	6	5	9
Between Bray and Howth	... 2	8	2	9	1	10	"	4	4	0	2	9	

ON SUNDAYS

Return Tickets at Single Fares in both directions, between Bray and Howth, available for the day of issue only.
Through Bookings also between principal Stations on the Dublin, Wicklow, and Wexford, and Great Northern Railways.

HARBOUR-STREET TERMINUS,
20th April, 1831.

WILLIAM L. PAYNE
Traffic Manager.

The City of Dublin Junction Railway, the "Loop Line", opened from Westland Row via Tara St to a new station at Amiens St, adjacent to that of the Great Northern Railway (Ireland) on 1st May 1891. A feature of the timetable introduced from that date was a substantially hourly service for much of the day, running through between Howth and Bray – a precursor of the 1984 DART service. This through service continued until 1907. Few Irish timetables from that period survive, but Bradshaw offers some insight for a few dates, as set out on pages 8 and 9, which also carries an upstream panoramic view of the Liffey Bridge. The Loop Line runs on a largely continuous sequence of spectacular 19th century iron bridges, with some short intervening stone and brick structures. (*W E Shepherd collection – reproduced with the permission of Mr Shepherd*).



The Loop Line Liffey Bridge viewed from Memorial Road Bridge (Google Street View)

1st May 1891

Weekday trains from Bray to Howth at 09:00 and every hour, on the hour, to 17:00, then 17:30 and 18:30. 3 mins stop at Amiens St; 00:42 to 00:45, for the trains leaving Bray on the hour. Hourly on Sunday – 09:00 to 18:00.

Weekday trains from Howth to Bray at 10:10 and every hour, at the hour :10, to 16:10, then 17:35, 18:15 and 19:15. 3 mins stop at Amiens St; 00:34 to 00:37, for the trains leaving Howth on the hour :10. Hourly on Sunday – 10:10 to 19:10.

Bradshaw June 1896

Weekday trains from Bray at 09:00 and every hour, on the hour, to 16:00. 5 mins stop at Amiens St; 00:40 to 00:45. Bradshaw does not specifically show these trains as running through, but their times are consistent with through running. Hourly on Sunday – 09:00 to 20:00.

Weekday trains from Howth at 10:10 and every hour, on the hour, to 16:10. 6 mins stop at Amiens St; 00:32 to 00:38. Bradshaw does not specifically show these trains as running through, but their times are consistent with through running. Hourly on Sunday – 10:10 to 21:10.



Bradshaw February 1906

Weekday trains from Bray at 09:00, 10:00, 12:00, 13:00, 14:00 and 17:00 are consistent with through running. 10 mins stop at Amiens St; 00:42 to 00:52. Nine trains on Sunday.

Weekday trains from Howth at 09:10, 11:05, 13:05, 14:05, 15:05 and 17:05 are consistent with through running. 10 mins stop at Amiens St; 00:42 to 00:52. Eight trains on Sunday.

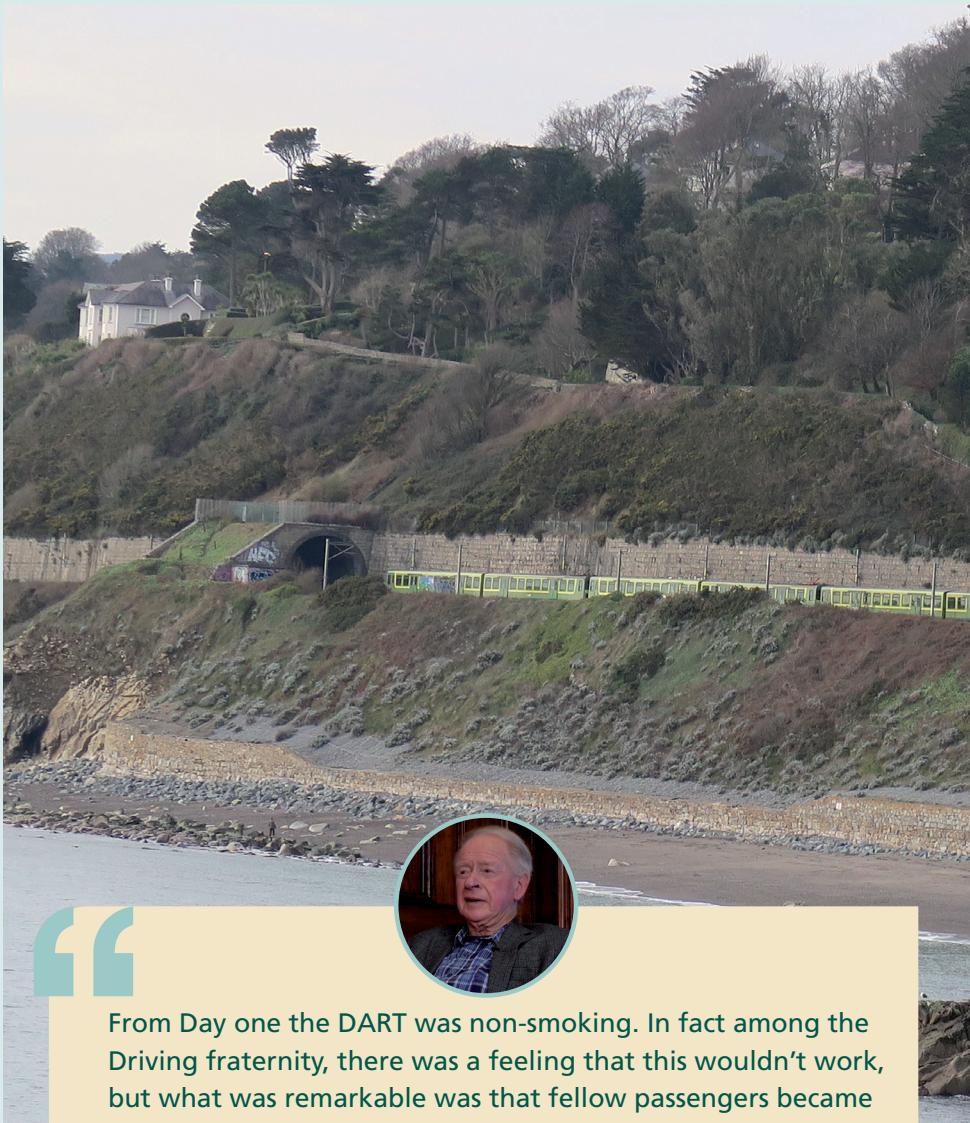
February 1907

Through service ceased.

“ The actual launch date was all the hierarchy, The Taoiseach, the Managing Director, The AGMs and the community representatives from along the route.

Ann Foley, Retired, from Iarnród Éireann’s Marketing Department





From Day one the DART was non-smoking. In fact among the Driving fraternity, there was a feeling that this wouldn't work, but what was remarkable was that fellow passengers became the disciplinarians and they would quickly remind any offenders that there was no smoking on the DART.

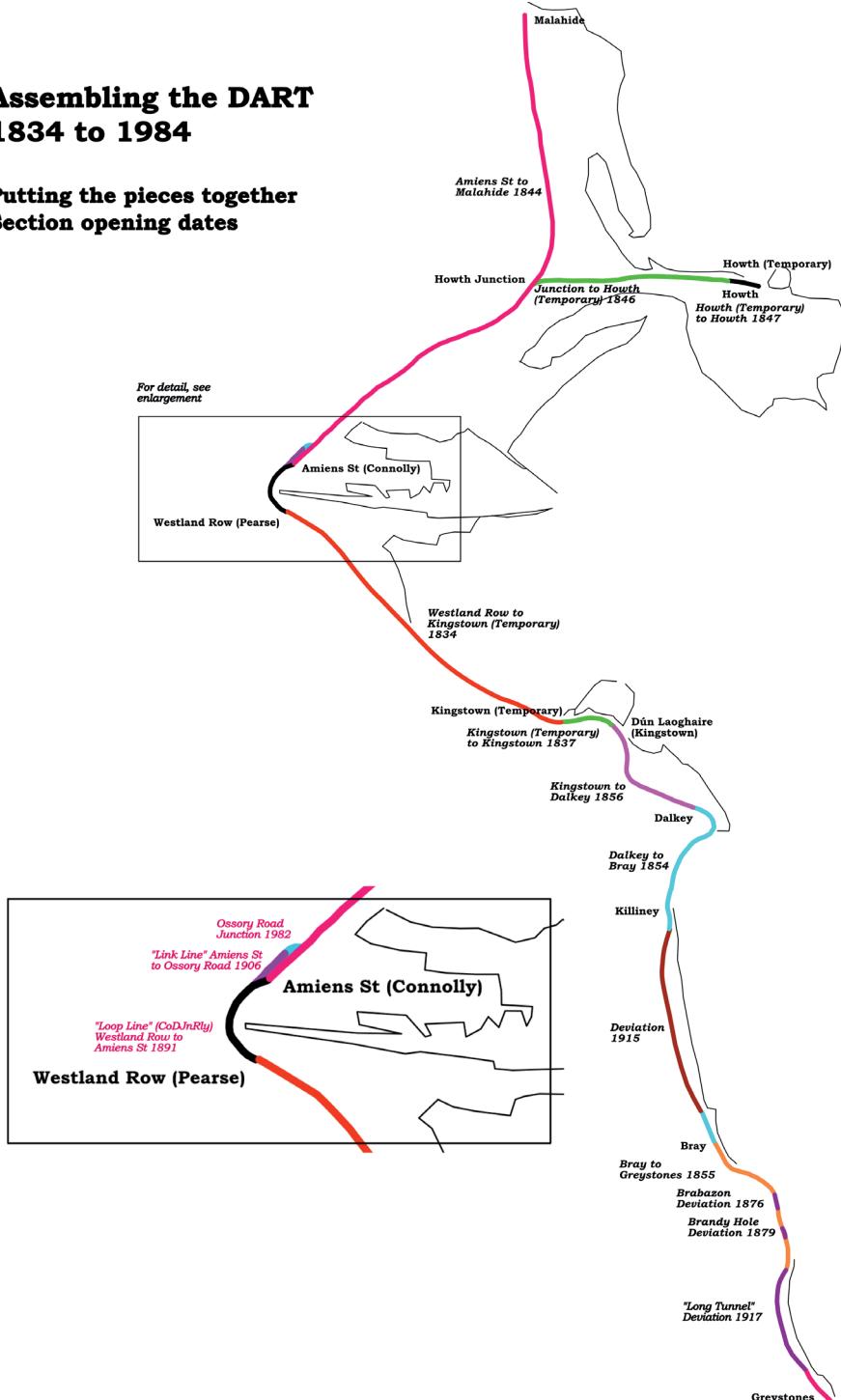
Bernard C Byrne, Retired DART Driver



Down and Up DART services, both formed by 6-car sets of the original 1984 rolling stock, meet just south of the footbridge at the White Rock Bathing Place on 28 January 2019. Mount Eagle, the home of Irish railway electrical engineer Eoghan O'Brien, is directly above the two leading cars of the southbound train. (Photo © Michael J. Walsh)

Assembling the DART 1834 to 1984

Putting the pieces together Section opening dates



List of Stations

Station	Dates	Notes
Malahide	1844	
Portmarnock	1844	
Clongriffin	2010	
Baldoyle	1844-1846	
Howth	1847	
Howth (temporary)	1846-1847	
Sutton	1846	Footnote 1
Bayside	1973	
Howth Junction	1846	"Junction" until 1912
Kilbarrack	1969	
Raheny	1844	
Harmonstown	1957	
Killester	1845-1847; 1923 to date	
Clontarf	1844-1852; 1898-1956	
Clontarf Road	1997	
Amiens St (GNR) terminus	1844	Connolly 1966
Amiens St Junction	1891	"Loop Line" station
Tara St	1891	Footnote 1
Westland Row	1834	Pearse 1966
Grand Canal Dock	1998	
Lansdowne Road	1870	Footnote 1
Serpentine Ave	1835-1835	
Sandymount	1835-1841; 1860-1862; 1882-1901; 1928-1960; 1984 to date	Ireland's most closed and reopened station. Footnote 1
Sydney Parade	1835-1841; 1862-1960; 1972 to date	Sydney Parade from c. 1895 to 1960
Merrion	1835-1862; 1882-1901; 1928-1929; 1930-1935	

Station	Dates	Notes
Booterstown	1835-1960, 1975 to date	
<i>Williamstown</i>	<i>1835-1841</i>	
Blackrock	1834	
Seapoint	1863	Footnote 1
Salthill & Monkstown	1863-1960; 1984 to date	Footnote 1
<i>Dunleary (temporary)</i>	<i>1834-1837</i>	
Dún Laoghaire	1837	Footnote 1
Sandycove & Glasthule	1856	Footnote 1
Glenageary	1867	
<i>Dalkey (Atmospheric)</i>	<i>1844-1854</i>	
Dalkey	1854	
<i>Obelisk Hill</i>	<i>1855-1858</i>	
<i>Killiney (old)</i>	<i>1858-1882</i>	
Killiney	1882	Footnote 1
<i>Ballybrack (1)</i>	<i>1854-1857</i>	
<i>Ballybrack (2)</i>	<i>1857-1882</i>	
Shankill	1977	
Woodbrook	1910-1960; 2025	Golf Course halt
Bray	1854	
<i>Bray Cove Halt</i>	<i>1906-1907; 1929-1929</i>	
Greystones	1855	

Closed stations in *italics*.

Stations opened during DART era in **red.**

Footnotes

1. Station name changed one or more times.

1907-1960 Competition, Decline and near-Closure

1907 Tramway competition affects rail traffic.
Great Northern Railway (Ireland) introduces steam railcar on Howth service to reduce costs.

1916-1924 The Easter Rising, Independence for 26 Counties, Civil War, all of which impinge on rail services.

1925 Amalgamation of all railways wholly within the Irish Free State in the Great Southern Railways (with one exception). The cross-border GNR(I) remains a separate entity.

1934 Electric signalling installed at West Road and between Amiens St and Dún Laoghaire.
The 1891-installed double junction between the Bray line platforms at Amens St and the GNR line north removed and replaced by a single track link.

1941 GNR trains covered some services on the Bray line during a coal shortage.

1945 The GSR is amalgamated with the Dublin United Transport Company to form Córas Iompair Éireann.

1950 CIÉ is nationalised.

1957 After 103 years as a single line, the section through Dún Laoghaire station is reconstructed to provide double track.

1958 The original main line from Harcourt St to Shanganagh Junction, between Killiney and Bray, closed with effect from the last day of the year.

Sep 1960 Minor stations between Lansdowne Road and Dún Laoghaire closed, rail services cut back to morning and evening peak hours only, 13 trains each way, with 3 midday round trips. Northside suburban services remained unaffected.

Jun 1961 All day and evening services restored for the Summer. This winter and summer alternation continued until at least 1968.

Sep 1964 Evening services to Howth withdrawn.

Sep 1964 Evening services to Howth restored for Summer. This winter and summer pattern continued until at least 1968.

DART Forerunner 1967-1979

Sep 1967 Through service Bray to Howth resumed after 60 years, two trains northbound only. One southbound through from Drogheda to Bray.

Jun 1968 Additional northbound service, Dún Laoghaire to Howth.

1969 New bidirectional crossovers installed at Connolly from the Bray platforms to the GNR line, restoring an effective double junction between the two sections, a feature removed in 1934.

Jun 1970 Enhanced suburban service with additional services, the greater number of which are through services between the GNR and Bray sections.

1971-79 Continued expansion of suburban service with an increasingly aging fleet, new stations opened and closed stations reopened, but cutbacks of remaining Summer seaside and evening services.

1975 Dublin Rapid Rail Transportation Study (DRRTS).

Jun 1979 DART Howth to Bray approved.

DART 1984-2002

Ongoing growth in passenger numbers, with peak hour overcrowding at times. Electrified network extended to Greystones (10 Apr 2000) and Malahide (9 Oct 2000) and new stations added to the network. Fleet enhanced by 5 2-car sets in 2000, but two of the original 2-car trains destroyed in a depot fire at Fairview in 2001.

Further fleet enlargement to 144 carriages with 4-car units from Japan, 4 sets in 2001, 3 similar in 2003 and 10 in 2004, the first (and still the only) air-conditioned DART trains.

DART Upgrade 2003-2005

This project, extending over several years, involved all aspects of the DART operation.

- Stations** Platforms extended to accommodate 8-car trains, improved access and facilities for disabled passengers, and provision of emergency escape routes where needed.
- Power Supply** Strengthening supply to accommodate longer and more frequent trains, and modification of overhead lines for operation of longer trains and to fit in with platform extensions.
- Track** Modification of layouts for longer trains, installation of additional storage sidings and lengthening existing sidings.
- Rolling Stock** Mid-life refurbishment of original fleet, and depot modifications to accommodate more and longer trains.
- Signalling** Upgrading of centre-city section to enable operation of up to 16 train per hour, previously 12. Subsequent additional upgrading to accommodate, *inter alia*, services to the Kildare line from Grand Canal Dock via the Phoenix Park Tunnel.

“ Someone recently did a piece of work and if you inflated the cost of the DART in 1984 up today's prices, it would be about half a billion, which sounds like good value for money for what we did.

Éamonn Ballance, Director of Infrastructure, Iarnród Éireann



DART+

The DART+ Programme will revolutionise travel in the Greater Dublin Area. It will see the DART network grow from its current 50km in length to over 150km. Bringing DART travel with all its benefits to new and existing communities.

It will promote multi modal transit, active transport, boost regional connectivity and make public transport the preferred option for more and more people. The DART+ Programme will deliver frequent, modern, electrified services within the Greater Dublin Area (GDA) and will improve connectivity to Regional towns and cities.

The DART+ Programme will involve rail improvements from:

- DART+ West – Maynooth and M3 Parkway to the City Centre
- DART+ South West – Hazelhatch & Celbridge to the City Centre
- DART+ Coastal North – Drogheda to the City Centre
- DART+ Coastal South – Greystones to the City Centre
- DART+ Fleet – purchase of new train fleet to increase train services.

“



On top of the DART there is a V shaped pantograph that collects power from the overhead line and feeds it into the train. In railway terms it is normally referred to as a pan. The electrical control operator asked the Driver to drop his pans. It was misconstrued by passengers adjacent to the cab, who could hear the conversation and they interpreted it as “Driver, drop your pants!”

Oliver Doyle, Retired Operations Schemes Development Manager

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The granite rock that we were trying to reduce turned out to be tougher than was imagined. We spent a year and a half there installing the slab track. They did use dynamite for a while, but there was a bit of a incident where a journalist was having a meal in some restaurant and a rock fell on his table after one of the explosions, so there was a lot of controversy about it at the time.

Joe Walsh, Retired Manager, Operations



Sydney Parade, April 2024. (Photo © Ciarán Cooney)