M.I.A.

the wheels of the NEW Boston!

BOSTON

1962

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—Contents—

Besides, a wife, whose actions and thoughts were as perfectly calculable and as accurately calculated as the trains in a Bradshaw, was possessed of sterling qualities which, however estimable, were more suited to a housekeeper than a mistress.—- E.F. Benson, "Dodo", 1893, ch.2

Thanks to Brendan Whyte for bringing this to our attention.

Where do all the passengers come from?

By JIM WELLS

EMIRATES AIRLINES HAS WON an award: See http://www.worldairlineawards.com/index.htm, but one wonders why? Emirates has 3-4-3=10 seating across its Boeing 777 aircraft whereas other operators have 3-3-3=9, e.g. Singapore Airlines and British Airways. The cabin is narrower than a B747's. Perhaps the voters don't travel economy.

Emirates is of real interest to Australians because Qantas has entered into an alliance with them. Emirates must be doing something right because it is enormous. From Wiki we learn that it flies to 130 cities in 77 countries – 3,000 flights per week and is the fourth largest international operator.

Its home country is small—a population of about 8 million—so the airline is largely reliant on passengers transiting its Dubai hub which, by the way, has a terminal (3) that cost $US4.5b and is the largest building in the world by floor space.

Transiting through hubs has become less common in recent years as aircraft now have much longer ranges (flying distances) and airlines much prefer terminators – out and back flights – no milk runs.

A quick glance at the globe shows that the major markets that can't be operated by non stop flights are Australasia to Europe and South Asia (India) to America. Emirates is in an ideal position to serve the first through Dubai and maybe the second, but only the eastern part of India.

The good news for us collectors is that Emirates still publishes a pdf timetable- most airlines don't. At right is a sample section. The timetable is 351 pages of nothing other than timetables such as this. No route maps, additional information, seating plans, airport diagrams, etc – just timetables. One frustration though is that there are references to general notes but these are not in the book.

Some of the connections look a bit optimistic. Why would one want to backtrack to Dubai to go from Delhi to Ho Chi Minh City (formerly Saigon)?

The Qantas alliance has resulted in the table shown at the top of the next page These flights are Qantas, as the arrow clearly means Codeshare. I think the full Qantas domestic timetable is included.

The number of flights operated must make Qantas executives weep. On page 4, upper left, is a summary of Emirates' daily one way services – all wide body – to the UK from Dubai:

So can we estimate what proportion of Emirate's business derives from Australia/

Emirates takes the top honour at the World Airline Awards being named by travellers as the World's Best Airline in 2013

Days/Validity		Depart		Arrive		Flight No.	Acft	Stp
From Hamburg (HAM) Continued								
Telephone Emirates: 069 945 192 000								
To Shanghai (SHA)								
Daily	1525	HAM	2340	DXB	EK060		77W/FJY	0
	0250+	DXB	1530+	PVG	EK302		380/PJY	0
Daily	2125	HAM	0535+	DXB	EK062		77L/FJY	0
	1035+	DXB	2325+	PVG	EK304		77W/PJY	0
To Singapore (SIN)								
Daily	1525	HAM	2340	DXB	EK060		77W/FJY	0
	0325+	DXB	1500+	SIN	EK354		380/PJY	0
Daily	2125	HAM	0535+	DXB	EK062		77L/FJY	0
	0935+	DXB	2055+	SIN	EK404♦		77W/PJY	0
2	2125	HAM	0535+	DXB	EK062		77L/FJY	0
	0700+	DXB	2040+	SIN	EK348		77W/JY	1
To Sydney (SYD)								
Daily	1525	HAM	2340	DXB	EK060		77W/FJY	0
	0215+	DXB	2205+	SYD	EK414♦		380/PJY	0
Daily	2125	HAM	0535+	DXB	EK062		77L/FJY	0
	0920+	DXB	0510+2	SYD	EK5002✈		380/FJY	0
To Ho Chi Minh City (SGN)								
Daily	0415	DEL	0610	DXB	EK513		773/FJY	0
	0915	DXB	1935	SGN	EK392		77W/JY	0

NZ. On page 4 (right) is a summary of daily one way flights to Dubai. One flight ex Sydney (Bangkok) and one ex Melbourne (Singapore) makes a stop *en route*.

The interesting thing here is the number of flights to/from Perth. If you book Qantas Perth to London you'll travel on an Emirates flight to Dubai and quite likely the whole way.

So multiplying by two for the other direction and by seven to get weekly, Australia accounts for 168 flights per week or 6% of Emirates business. The true figure in revenue terms would be much higher, partly

From Mount Hotham (MHU) GMT+1000 For Reservations please contact your local Travel Agent/ Airline Office							

To Sydney (SYD)

45 01Aug-08Aug	1210	MHU	1330	SYD	EK5188✈	DH8/Y	0
4 15Aug-15Aug	1210	MHU	1330	SYD	EK5188✈	DH8/Y	0
5 28Jun-26Jul	1210	MHU	1330	SYD	EK5188✈	DH8/Y	0
7 From 18Aug	1230	MHU	1350	SYD	EK5190✈	DH8/Y	0
7 30Jun-04Aug	1230	MHU	1350	SYD	EK5190✈	DH8/Y	0
15 09Aug-12Aug	1240	MHU	1400	SYD	EK5188✈	DH8/Y	0
1 29Jul-05Aug	1240	MHU	1400	SYD	EK5188✈	DH8/Y	0
1 26Aug-26Aug	1240	MHU	1400	SYD	EK5188✈	DH8/Y	0
5 From 23Aug	1550	MHU	1710	SYD	EK5192✈	DH8/Y	0
5 19Jul-02Aug	1550	MHU	1710	SYD	EK5192✈	DH8/Y	0
57 30Jun-14Jul	1620	MHU	1740	SYD	EK5192✈	DH8/Y	0
7 From 21Jul	1620	MHU	1740	SYD	EK5192✈	DH8/Y	0

London LHR	5
London LGW	3
Birmingham	2
Manchester	3
Glasgow	1
Newcastle	1
	15

Sydney	3
Melbourne	3
Brisbane	2
Adelaide	1
Perth	3
	12
NZ flights stop in Australia	

New York	2
Washington	1
Dallas	1
Houston	1
Los Angeles	1
San Francisco	1
Seattle	1
Toronto	1
	9

because Australian flights would be longer than average and partly because almost all Australian business would have travel to the west of Dubai, mainly to/from Europe.

I have heard it said that Emirates are going to devote 30 A380's to the Australian market alone.

Wiki suggests that Emirates is very strong in the south Asia to America market. Here's a summary of daily one way flights to North America. Sorry, but that doesn't account for too much of the business.

Emirates is certainly strong in South and East Asia. Most cities have between three and five flights a day. Why this is so is curious as airlines based in Asia can all offer non stop services to Europe.

The mystery remains. Perhaps one day I'll find the time to examine the timetable in detail and confirm Wiki's 3,000 flights a week. One way to do it would be to download all 19 pages of departure information off Dubai Airport's web site.

But wait, there's more. There's another Dubai based airline competing with Emirates – *Fly Dubai* – with 30 Boeing B737-800's. Destinations are short range but do extend to Europe.

More significant for us Australians is an airline based just 120 km away in Abu Dhabi – *Etihad Airways*. Like Emirates it is a full service international airline and serves Australia. So keen are they on Australia they have bought naming rights to a sports stadium in Melbourne (see August

2013 *The Times*). They don't appear to have a downloadable PDF timetable. From Sydney they have eleven flights a week to Abu Dhabi; Melbourne seven. Because they code share with *Virgin Australia*, the latter airline's flights are also shown in their on line system. They have a 10% holding in the Australian airline. Virgin Australia has three flight s a week Sydney – Abu Dhabi, none Melbourne.

Also in this space is *Qatar Airways* who serve Perth and Melbourne. They don't have a PDF either.

Sunday	Monday	Tuesday	Wednesday
May 26	27	28	29
Actual Temp 42° Lo 29°	Actual Temp 43° Lo 29°	Actual Temp 43° Lo 29°	Actual Temp 40° Lo 31°
Hist. Avg. 35° Lo 23°	Hist. Avg. 35° Lo 23°	Hist. Avg. 35° Lo 23°	Hist. Avg. 35° Lo 23°
2	3	4	5

North Korea's "Torure" Rail Transport System

By Curtis Melvin, *courtesy* David Cranney

A FLICKR USER HAS uploaded some interesting pictures of North Korea's railway system. These pictures show some North Korean entrepreneurs have co-opted unused railway assets for private economic activity:

This form of transport is known as "Torure" (도루레), and I recently had the chance to speak with a former resident of North Hamgyong Province who was able to share some of the basic details of how the operation works.

"Torure" train carts are built by *de-facto* private businessmen. They transport passengers and cargo along railway tracks and are very common in North Hamgyong Province. Individuals pay a fare for the ride to the "conductor". From the fees, the conductor takes his wages, covers the cost of the cart, and pays his operating costs, which includes safe passage payments to Korean People's Army soldiers stationed every 3km along the tracks. Unfortunately, I was unable to learn how much the soldiers are paid and how these quantities are determined.

There is no posted schedule of when the carts leave or the routes they travel, but I am told departures and coverage are regular and wide enough that travel is popular and easy.

The cart itself is simple piece of technology. It rolls downhill and is slowed by a friction brake system by the conductor. At the bottom of one hill, all the passengers will disembark and help push the cart up the next hill. Additionally, if a train is coming, all the passengers will help move the cart off the tracks so the train can pass.

Travel by this system is also convenient because passengers will not need to furnish a formal travel permit. As long as they can afford the fee, they are free to travel.

This article appeared in NK*NEWS.ORG which is a US based privately owned subscription website focussed on North Korea. (This article was free.)

Original article is at: http://www.nknews.org/2013/06/north-koreas-torure-rail-transport-system/ accessed on 20/6/13.

Three photos in the article are attributed to Siyang Xue who has posted them on Flickr at http://www.flickr.com/photos/bg2axk/with/8746623585/ (This Flickr collection also contains some very good photos of Chinese and DPRK trains and buses.)

Looong trains
A *Letter* from Scott Ferris

IN THE JUNE EDITION OF THE TIMES, I read the article on "Long Trains" by Jim Wells. About the middle of the 2nd column, Jim makes mention of the reason for the front 4 cars of a Intercity Train stopping at Cowan.

He claims it is so as not to go past the Signal protecting the Crossover and for the difficulty that would render to the Guard.

I would like to point out that this situation happens on the Down Main at Redfern, where a 8car V set will stop past the Signal at the Country End of the Platform.

The Guard would know by the position of where the train has Stopped on the Platform that the Signal was set to proceed and will not be concerned that the signal is now at Stop.

I spoke to Michael Smith at the meeting on Saturday [3-Aug-2013], the reason for Intercity trains to stop with the front 4cars on the Platform at Cowan is due to the Pedestrian crossing. Michael says, this prevents "would be" passengers from trying to dash across the tracks and climbing underneath the stopped Intercity train.

So, Jim was right in the first instance in his article when he said it was as a result of the pedestrian crossing

Great Northern Summer 1947 Timetable

BY STREAMLINER MEMORIES, *courtesy of* TONY BAILEY

THE STREAMLINED EMPIRE Builder was introduced in February, 1947, so this is the first summer timetable featuring that train. A full 21 pages of this 44-page booklet are devoted to Great Northern trains (including connecting Burlington and SP&S trains), partly because 9 of those pages are used to present the Chicago-Seattle route of the Empire Builder and Oriental Limited in excruciating detail.

A dozen more pages have more than 80 timetables for local trains, one of which (Wenatchee to Mansfield, WA) went only on Wednesdays and Sundays; another (Evansville to Elbow Lake, MN) only on Tuesdays; and other schedules were freight only. There are a few timetables for buses and one for the Lake Chelan (WA) Boat Company.

The back cover of the timetable advertises the duplex roomette, claiming "the New Empire Builder is the first post-war train to provide the improved Duplex Roomette." Pullman first introduced duplex roomettes in 1942, but the 1947 versions are apparently "improved." "This private room accommodation is intended for one passenger only," says the ad, "and should not be confused with the Roomette, which is larger and more costly." Roomettes, which were only slightly larger than duplex roomettes, would not be available on any Great Northern train until the 1951 Mid-Century Empire Builder.

Another ad in the timetable promises that, in addition to the streamlined Empire Builder, the GN will soon streamline its Seattle-Vancouver trains. The ad says these will be called "Puget Sounders," but of course, they were actually called the Internationals. Other ads encourage passengers to stop off at Glacier Park; describe food and beverages sold by onboard "train salesmen" ("Meat sandwich . . . 20¢" or $2 today); promote GM's "fast, dependable" freight service; and make passengers aware of a variety of other trains and services.

The rest of the booklet includes four pages of connecting train schedules; six pages of general information such as an index to every station mentioned in the timetables and a list of GN ticket agents; three pages describing the equipment on major GN trains; a two-page centerfold map of the Great Northern system and connections; and four pages providing fares on board GN trains.

Train travel wasn't cheap in 1947. The round-trip coach fare from Chicago to Seattle or Portland was $76.20, which sounds reasonable but is nearly $800 in today's money. This doesn't include a 15 percent federal excise tax, which brings the total to $87.63 or more than $900 today. By comparison, summer coach fares on Amtrak today are under $600.

Sleeping car passengers had to pay a first-class fare, which was $114.25, nearly $1,200 in today's money, plus a fare to the Pullman company that depended on the accommodation, starting at $13.90 each way for an upper berth rising to as much as $43.35 for a drawing room, plus tax. The total cost, including tax, for someone taking a duplex roomette round trip would be $177.15, or more than $1,800 today. Including the basic fares, a "Superliner roomette" on Amtrak today, which can fit two people, would cost about $1,486 round trip for one and $2,080 for two, and those prices include all meals in the diner.

The 1947 timetable also lists "intermediate-class" fares, which I presume were paid by people who wanted to ride in "tourist sleepers." These were available on the Oriental Limited but not the streamlined Empire Builder and consisted of cars with 32 upper and lower berths, which meant passengers could expect to find the washrooms more crowded than in other sleeping cars. The round-trip fare, including the Pullman charge and tax, for someone willing to settle for an upper berth was $129, or around $1,350 today. (Needless to say, Amtrak fares are subsidized and would probably be much higher without those subsidies.)

So rail was not exactly a bargain considering that round-trip air fares between Chicago and Seattle today are under $500 and even first-class fares are under $900. However, in 1947, air fares tended to be about double rail fares.
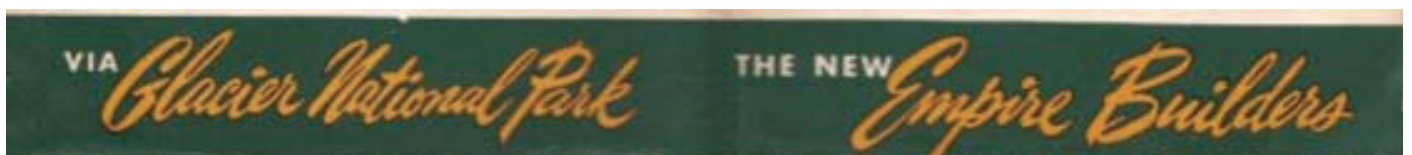
Streamliner Memories — Memorabilia from the Silver Age of Passenger Trains

The General Motors Train of Tomorrow — "Star Dust" Chair Car — "Sky View" Dining Car
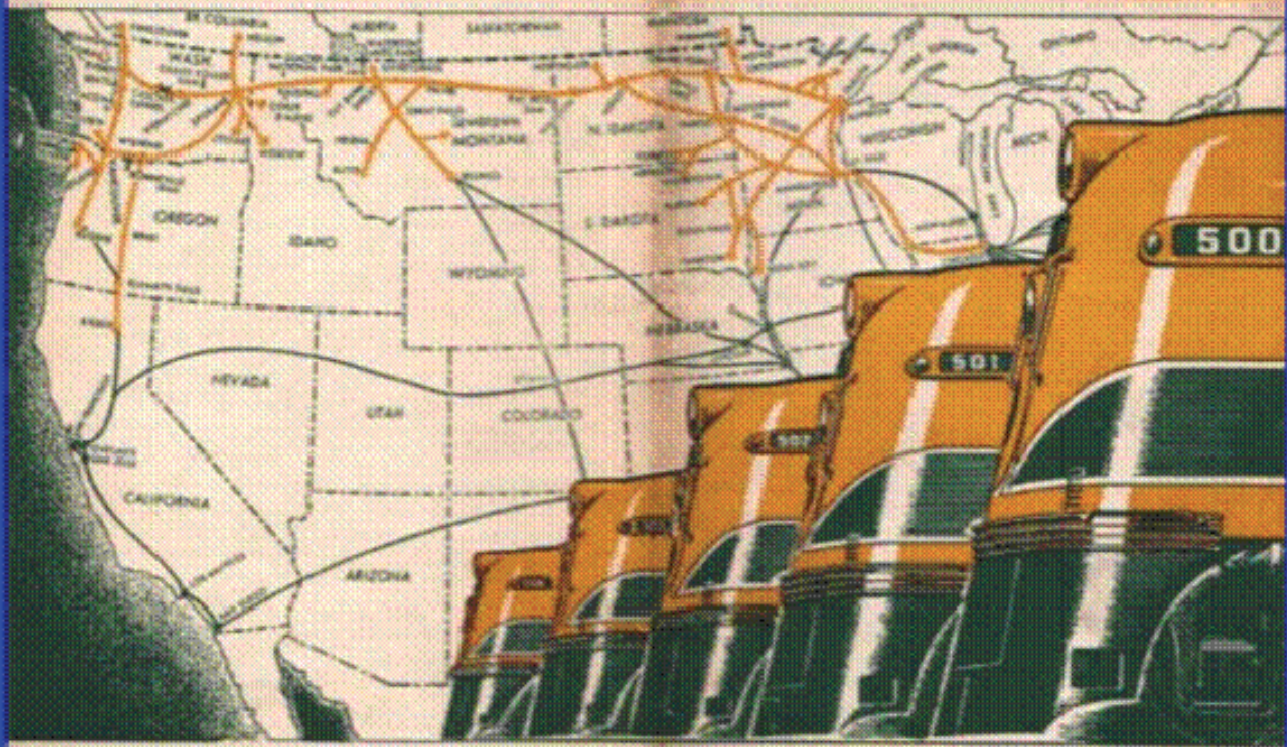
VIA Glacier National Park — THE NEW Empire Builders
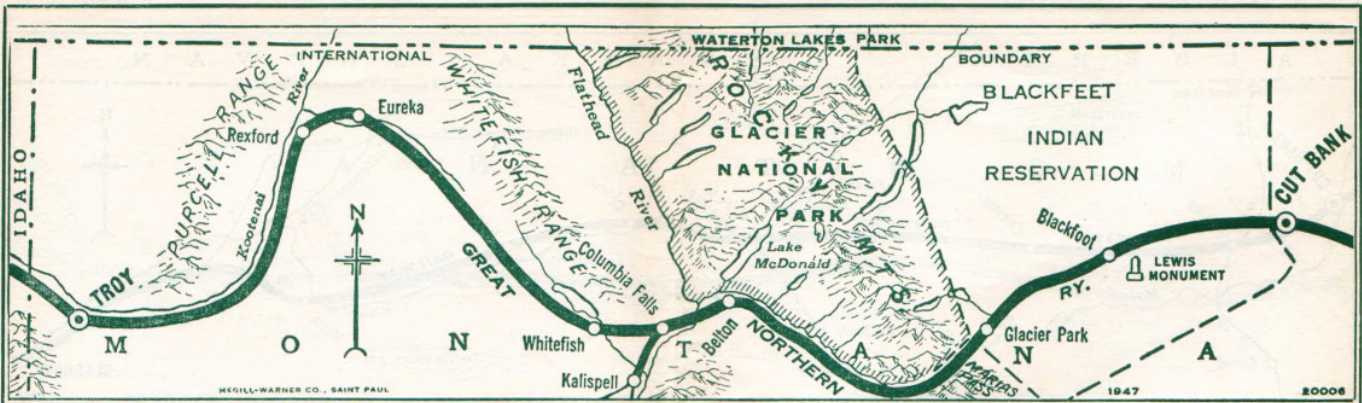
CHICAGO, TWIN CITIES AND PACIFIC NORTHWEST—Continued.

TABLE 6 — Mountain Time

Westbound—Read Down

43 Daily	Fast Mail 27 Daily	Oriental Limited 3 Daily	Empire Builder 1 Daily	Miles from St. Paul		Station		Miles from Seattle	Empire Builder 2 Daily	Oriental Limited 4 Daily	Fast Mail 28 Daily	42 Daily
AM	AM	AM	PM						AM	PM	AM	PM
10 55	6 43	11 10	a 2 45	1053	Lv	Cut Bank	Ar	734	b10 16	7 55	e 12 01	8 05
				1059	"	Gunsight	Lv	725			e f11 49	
				1063	"	Sundance	Ar	721			e f11 44	
				1068	"	Fort Piegan	"	716			e f11 37	
				1073	"	Meriwether...(Lewis Monument)	"	711			e f11 29	
	ef 7 25			1079	Ar	Blackfoot (Chief Mtn. to	Lv	705			e f11 20	
	ef 7 25			1079	Lv	Blackfoot northwest)	Ar	705			e f11 20	
11 45	e 7 42	c11 59		1087	"	Browning...(Blackfeet Indian	"	697		d 7 09	e f11 08	7 19
				1092	"	Triple Divide......Agency)	"	692			e f10 57	
				1095	"	Spotted Robe	"	689			e f10 50	
12 15	ef 8 12	① 12 35		1100	Ar	Glacier Park 11...(Glacier	Lv	684		① 6 45	e f10 40	6 55
				1103	Lv	Bison	Park	681			e f10 33	
				1106	"	Rising Wolf	Hotel)	678			e f10 27	
	ef 8 40			1112	"	Summit.(Continental Divide, John F. Stevens Statue)		672			e f10 15	
				1119	"	Blacktail (Horseshoe Curve)		665			e f 9 53	
				1122	"	Singleshot		662			e f 9 43	
				1126	"	Nimrod...(Flathead Riv.)		658			e f 9 31	
	e 9 20			1130	"	Essex....(Scalplock Mtn.)		654			e 9 20	
				1136	"	Pinnacle...(Mt. St. Nicholas 9,385 ft.)		648			e f 9 06	
	ef 9 53			1141	"	Hidden Lake (Double		643			e f 8 56	
	ef10 14	① 2 20		1146	"	Red Eagle......Mtn.)		638			e f 8 45	
				1157	"	Belton (Belton Gateway) (Lake McDonald Hotel)		627		① 4 40	e f 8 25	
	ef10 30			1165	"	Coram (Flathead River)	"	619			e f 8 10	
PM	AM		2 45	1172	"	Columbia Falls 62	Lv	612		4 15	AM	PM

(Glacier National Park region: Flathead River — GLACIER NATIONAL PARK; Blackfeet Indian Reservation; Kootenai River)

249 Daily	247 Daily	243 Daily	245 Daily						248 Daily	250 Daily	244 Daily	246 Daily
8 10	4 25	11 45	2 50	1172	Lv	Columbia Falls 62	Ar	612	4 10	6 20	10 00	2 30
8 40	4 55	12 15	3 20	1186	Ar	Kalispell (Flathead Lake)	Lv	626	3 40	5 50	9 30	2 00

251 Daily	241 Daily	27 Daily	3 Daily							4 Daily	28 Daily	242 Daily	252 Daily
6 45	10 10	---	2 45		1172	Lv	Columbia Falls 62	Ar	612	4 15		11 25	8 05
f 6 51	f10 16				1175	Lv	Half Moon	Ar	609			f11 19	f 7 59
7 00	10 25	e 11 00	3 00 / 6 15		1180	Ar	Whitefish (Whitefish Lake)	Ar	604	6 55	4 00	7 45	11 10	7 50
		e 11 05	3 10 / 6 15		1180	Lv	Whitefish	Lv	604	6 55	3 50	e 7 30	
		ef11 16			1185	"	Vista		599		g	e f 7 20	
		ef11 25			1191	"	Lupfer		593		g	e f 7 10	
		ef11 35			1197	"	Olney		587		g	e f 6 59	
		ef11 44			1203	"	Radnor		581		g	e f 6 48	
		ef11 56			1210	"	Stryker (Stillwater River)		574		g	e f 6 27	
		ef12 05			1216	"	Trego (Wolf Mountains)		568		g	e f 6 17	
		ef12 14			1220	"	Fortine (State Fish Hatchery)		564		g	e f 6 08	
		ef12 23			1226	"	Tobacco		558		g	e f 5 57	
		e 12 35			1232	"	Eureka (Tobacco River)		552		g	e 5 47	
		e 12 50			1241	"	Rexford		543		g	e 5 31	
PM	AM	PM	PM / PM						AM	PM	PM	AM / PM

a—Stops to discharge revenue passengers from Williston and east, and to receive revenue passengers for Spokane and west.
b—Stops to discharge revenue passengers from Spokane and west, and to receive revenue passengers for Williston and east.
c—Stops to discharge revenue passengers from points east of Williston.
d—Stops to receive revenue passengers for points east of Havre, where No. 4 is scheduled to stop.
e—Carries coach passengers only.
f—Flag stops for revenue passengers.
g—Stops to receive revenue passengers for south of Shelby or east of Havre, where No. 4 is scheduled to stop.
①Nos. 3 and 4 stop at Glacier Park and Belton during Glacier National Park season June 15 to September 15. Westbound Train No. 3 will stop at Glacier Park for fifteen minutes during the Park season.

GENERAL INFORMATION

STANDARD TIME.—All time shown in Great Northern published schedules of its lines east of Williston, North Dakota, is Central time; between Williston, North Dakota, and Troy, Montana, is Mountain time; west of Troy, Montana, is Pacific time.

Eastern Time A.M.	Central Time A.M. Between Chicago, St. Paul, Minneapolis and Williston, North Dakota	Mountain Time A.M. Between Williston, North Dakota and Troy, Montana.	Pacific Time A.M. Between Troy, Montana and Seattle, Portland, Pacific Northwest California

CONNECTIONS AT CHICAGO

PENNSYLVANIA RAILROAD—Union Station

52	22	70	76	48	°28	58	78	42	2-32	54			113	25-45	75-63	5	77	49	°29	59	71	23	79	89
....	8 00	11 30	1 30	h2 00	2 30	3 30	3 50	4 30	5 30	7 30	10 15	Lv Chicago ....CT. Ar	12 50	6 20	6 30	6 40	7 05	7 20	8 00	7 35	9 45	1 35	3 40	4 40
....	6 50	9 30	10 38	11 27	11 38	12 20	12 49	2 32	2 44	7 00	8 00	Ar Pittsburgh ....ET. Lv	† 2 00	6 55	10 00	10 55	11 21	11 53	12 55	12 22	2 10	4 55	7 55	8 40
....		6 40						8 04		10 25		" Baltimore			9 03					5 15	6 15	8 52	12 32	....
....		7 35						8 50		11 15	4 10	" Washington			8 10					4 30	5 30	8 05	11 35	....
....	4 57	5 51	6 25	6 51	7 03		9 31	9 50	2 40	3 42	" North Philadelphia........	4 33	9 35	11 32	3 58	4 34	5 08	6 19		7 14	9 31	1 08	1 14
....	6 30	7 30	8 00	8 30	8 30		11 00	11 30	4 15	5 15	Ar New York .... " Lv	2 55	8 00	10 00	2 25	h3 05	3 35	5 00		5 45	8 00	11 40	11 45

316	320	306			315	319	307	216	208	236	204	200			215	207	237	203	201
9 35	1 00	11 05	Lv Chicago ..... Ar		3 20	8 50	6 50	9 35	1 00	9 20	10 30	11 30	Lv Chicago ..... Ar		3 20	8 50	5 45	7 15	7 00
2 10	5 05	3 20	Ar Indianapolis.. Lv		10 50	4 35	2 15	5 29	7 38	....	5 59	....	Ar Dayton..... Lv		....	3 30	....	11 59	....
5 00	7 50	6 10	Ar Louisville.... Lv		8 30	2 00	11 30	6 15	8 30			8 55	Ar Cincinnati... Lv		3 00	10 00	....		11 40

NEW YORK CENTRAL SYSTEM—La Salle Street Station

90	22	64	°26	°68	③2	66	98	28	6	46	Central Time	5	65	⑪1	°67	27	97	63	°25	19	257	59	35	73
....	11 00	6 00	4 15	4 00	3 00	h3 30	1 30	2 30	2 00	11 30	9 35 Lv Chicago........CT. Ar	7 00	7 15	h8 15	7 40	8 05	9 20	9 20	8 00	11 50	2 00	3 20	5 00	9 30
....	4 00	10 50	9 25	....	7 43	8 28	6 20	7 25	6 45	4 25	3 10 " Toledo.........ET. "	3 05	4 12	5 18	....	4 55	6 13	6 13	.....	8 20	10 25	12 18	1 25	6 15
....	6 20	....	11 45			9 30	....	....	6 55	5 45	" Cleveland....... "	12 30								6 05	8 00	....	11 20	4 00
....	9 45	3 45	2 55				11 05	12 50	11 20	10 50	9 40 Ar Buffalo........ " Lv	8 20	11 30		12 06	1 25	1 25		2 45			8 05	....
....	3 44	8 55	8 20	5 38			....	6 25	4 25	4 00	3 27 " Albany.......... "	12 46	6 01	6 55	....	6 50	7 55	7 55	7 32	9 10	....	1 40	....
....	7 00	11 59	11 30	8 30	8 30	9 30	7 20			7 00	" New York...... "	9 15	3 15	4 15	3 45		5 10	5 00	6 15		11 30		....
....	9 15	....	1 35					11 45	9 20		9 10 Ar Boston........ " Lv					2 15	2 30		3 00			7 50	....

MICHIGAN CENTRAL R. R.—Central and La Salle Street Stations

		346	°316	342	40	358	30	308	8	44	③76	Central Time	°315	39	17	③75	159	323	31	345			
....		1 10	11 59	11 30	10 20	8 00	d3 45	12 30	1 40	8 45	9 30 Lv Chicago........CT. Ar	7 20	8 30	11 15	5 00		8 10	d8 45	5 55			
....		10 35	7 55	7 40	4 35	2 35	9 45	7 05	7 40	4 25	3 35 Ar Detroit.........ET. Lv	11 59	3 15	7 15	12 50	1 15	2 40	4 45	11 15			
....					9 29	8 30			12 35	9 40	.... " Buffalo....... " "	10 19	2 25		8 15							
....					5 45				9 00	6 50	.... " New York..... " "	12 00	6 00		11 35							
....									11 45	9 10	Ar Boston....... " Lv		3 00		7 50							

MICHIGAN CENT.—CANADIAN PAC.—Central Sta'n

342	358	76			39	17	23
11 30	8 00	9 30	Lv Chicago......CT. Ar	8 30	1 00	8 00
2 55	8 30	10 10	Ar Toronto......ET. Lv	10 00	°11 45	8 00
10 15	5 45	7 00	" Montreal........ " Lv	3 30		10 30
5 25	°10 00	12 35	Ar Quebe.. " Lv	6 00		5 30

BALTIMORE & OHIO R. R.—Grand Central Station

	8	6	26	10		7	3-15	5	5-25	27-9
....	10 00	4 15	3 45	10 40	Lv Chicago........................Ar	2 40	12 30	7 15	7 25	6 15
....	8 00	1 48	1 34	10 25	Ar Pittsburgh.........E.T. Lv	6 30	2 42	11 20	11 35	8 55
....	3 30	8 40	8 25	6 30	" Washington....... " .... "	10 45		4 30	4 40	1 00
....	4 38	9 38	9 38	7 38	" Baltimore........ " .... "	9 35	5 54	3 23	3 23	11 52
....	6 38	11 17	11 17	9 28	" Philadelphia....... " .... "	7 47	3 58	1 22	1 22	10 15
....	9 05	1 45	1 45	12 00N'N	Ar New York........ " (42nd St.) Lv	5 15	1 25	10 50	10 50	7 50

THE ALTON R. R.—Union Station

	9	7	5	3	1	11	19		2	4	6	18	10	22	8	
....	11 59	11 30	6 55	4 50	11 45	8 45	8 25	Lv Chicago...............Ar	2 08	5 15	9 30	9 40	7 45	11 59	6 30	....
....	4 40	3 40	10 25	7 56	2 50	2 15	11 40	Ar Springfield..............Lv	8 58	1 54	5 05	6 21	3 03	7 40	2 18	....
....	7 43	7 08	1 00	10 00	4 55	7 05	1 45	Ar St. Louis..............Lv	8 58	11 55	2 45	4 30	12 30		11 45	....

ILLINOIS CENTRAL—Central Station

5	21	19	17	3	1		4	2	22	20	18	6		⑤53	9			10	⑤52		3		4
5 00	5 15	11 00	11 55	7 20	8 00	Lv Chicago... Ar	8 40	11 55	2 10	10 10	7 30	9 30	....	⑧8 10	10 10	Lv Chicago... Ar	7 15	⑤10 55	....	7 20	Lv Chicago.. Ar	8 40
....	10 25	4 10	7 15	....	....	Ar St. Louis... Lv	....	9 00	5 00	12 30	....	....	....	9 57	4 10	Ar Birmingham. Lv	12 01	8 58	11 20	Lv Little Rock.. Lv	4 20
2 12	....	....	7 40	4 57	" Memphis... "	8 00	2 38	....	....	11 45	....	2 35	10 05	" Columbus.. "	7 40	6 15	1 00	Ar Hot Springs Lv	2 30
9 30	....	....	6 40	11 55	Ar New Orleans Lv	8 00	....	....	....	5 00	....	8 30	" Savannah... "	10 30				
											....	8 45	7 20	Ar Jacksonville Lv	10 00	12 10			
											....	3 45	4 00	Ar Miami..... Lv	1 45	5 35			

NEW YORK CENTRAL SYSTEM—SOUTHERN RY.—Central Station

414	416	406	438	4	410		415	3	419	405	443	437
....	†7 15	9 45	1 00	9 20	4 40	11 45	Lv Chicago............CT. Ar	2 40	19 55	6 00	8 35	5 30	6 45
....	12 40	1 40	5 05	2 15	8 10	4 10	Ar Indianapolis............C.R. Lv	10 20	9 25	1 30	4 40	12 20	1 55
....		5 15	8 55	6 30	11 10	7 50	Ar Cincinnati..............E.T. Lv	9 00	8 30	12 00	3 20	10 10	11 55
....				9 15		9 10	Lv Cincinnati (Sou. Ry.)..E.T. Ar	7 55					9 55
....				5 20		4 20	Ar Chattanooga (Sou. Ry.).C.T. Lv	10 15					12 01
....				10 40		9 35	Ar Atlanta (Sou. Ry.)..... " Lv	7 10					8 40
....				1 10		12 40	Ar Macon (Sou. Ry.).... " Lv	4 25					5 20
....				7 55		7 45	Ar Jacksonville (Sou. Ry.).E.T. Lv	9 30					9 30

CHESAPEAKE & OHIO RY.—N. Y. Central Sys.—Central Sta'n

						2 00	10 05	Lv Chicago..............CT. Ar	2 45	8 45	2 45
						6 00	2 15	Lv Indianapolis.........CT. Ar	10 25	4 40	10 25
						9 20	5 40	Ar Cincinnati............E.T. Lv	9 15	3 30	9 15
						9 45	6 30	Lv Cincinnati...........E.T. Ar	8 20	2 15	7 00
						6 15	2 02	Ar White Sulphur Springs..E.T. Lv	12 11	6 30	6 20
						8 00		Ar Hot Springs...........E.T. Lv	⑧	⑧	⑧
						1 00	8 30	Ar Washington...........E.T. Lv	6 30	11 25	11 45
						1 10	8 30	Ar Richmond.............E.T. Lv	6 01	11 00	12 01
						9 30	4 55	11 45 Ar Norfolk..............E.T. Lv	2 30	6 45	8 50

°Pullman cars only.
°Except Saturday.
†Daily except Sunday.
③Seats reserved.

⑧Limousine service to Covington, Va., will be provided without additional charge to passengers holding tickets reading from Hot Springs.
⑤Coach streamliner. Lv. Chicago every 3rd day.

⑧Coach streamliner. Lv. Florida every 3rd day.
d—LaSalle St. Station.
h—Coach train. All seats reserved.

Schedules and information shown in this page has been compiled from information furnished by the railroads represented at the time this folder was printed and is subject to change without notice.

SUGGESTIONS TO AID IN READING THIS TIME FOLDER

Locate your destination in STATION INDEX contained on pages 3, 4 and 5. The numbers shown opposite each station indicate the TIME TABLES in which the train service to each station is shown.

Numbers shown opposite station names in certain time tables, as, for example, "Willmar 22, 30" refer to other time tables which show connecting or additional train service to such stations.

Time from 12.01 midnight to 12.00 noon is shown by LIGHT FACE figures; time from 12.01 noon to 12.00 midnight by BOLD FACE figures.

The Man Who Never Returned

By a cast of thousands, including **Jackie Steiner, Walter A O'Brien, the Kingston Trio** *and* **Wikipedia,** *compiled with commentary by* **Geoff Lambert**

LET ME TELL YOU THE STORY
of a man named Charlie
On a dark and fateful day
He put ten cents in his pocket
and he kissed his loving family
And he went to ride the MTA.

Did he ever return? No, he never returned
And his fate is still unlearned
He may ride forever 'neath the streets of
Boston
He's the man who never returned.

Chorus

Charlie handed in his dime at the Kendall
Square Station,
And he changed for Jamaica Plain
When he got there the conductor told
him, 'One more nickel'
Charlie couldn't get off the train.

Chorus

As his train rolled on through greater
Boston
Charlie looked around and sighed
"Well, I'm sore and disgusted and I'm
absolutely busted
I guess this is my last long ride."

Now all night long Charlie rode through
the tunnels,
Saying, "What will become of me?
Oh, how can I afford to see my sister in
Chelsea
Or my brother in Roxbury?"

Chorus

"I can't help," said the conductor
"I'm just working for a living but I sure
agree with you
For the nickels and dimes you'll be
spending in Boston
You'd be better off in Timbuktu."

Chorus

Charlie's wife goes down to the Scollay
Square Station
Every day at a quarter past two
And through the open window she hands
Charlie a sandwich
As his train goes rumbling through.

Chorus

Now, citizens of Boston, don't you think it
is a scandal
That the people have to pay and pay?
Join Walter A. O'Brien and fight the fare
increase
Get poor Charlie off that MTA!

Did he ever return? No, he never returned
And his fate is still unlearned
He may ride forever 'neath the streets of
Boston
He's the man who never returned.

This well-known folk song about Charlie on the M.T.A. is actually entitled "M.T.A.," which stands for Metropolitan Transit Authority, the predecessor of today's MBTA. The song was written as a campaign song for the 1949 Boston mayoral race of Walter A. O'Brien, Jr. O'Brien was the candidate of the Progressive Party, and the song was meant to call attention to O'Brien's opposition to the recent fare increase, which saw subway riders charged an extra nickel to exit trains at stops above ground. That's the reason for the last verse of the song.

Most of the lyrics of the song were written by Jackie Steiner, a young O'Brien supporter and classically-trained vocalist who had just discovered folk music. Bess Hawes, another O'Brien supporter and

member of a famous folk song-collecting family, contributed the song's most intriguing verse, about Charlie's wife.

Hawes also chose the tune, setting the lyrics to the melody of a song she had sung as a member of the Almanac Singers called "*The Train That Never Returned*," which itself was based on a Civil War-era song, "*The Ship That Never Returned."*

Despite its popularity, "M.T.A." didn't do much to help O'Brien's campaign fortunes. He finished last in the field of five candidates, As the years went by, O'Brien's campaign song continued to charm all who heard it. A former O'Brien campaign volunteer taught it to folk singer Will Holt, who recorded it for Coral Records in 1957. Upon its release, "M.T.A." seemed well on its way to becoming a hit, quickly climbing the music charts. But radio stations suddenly stopped playing the song and record stores refused to stock it after receiving complaints, especially in the Boston area, that the song glorified a "radical" - because in 1955, O'Brien, his wife, and other Progressive Party members had been accused by Massachusetts′ version of the House Committee on Un-American Activities of being "Communists or Communist sympathizers."

In 1959 the Kingston Trio recorded "M.T.A." Mindful of what happened two years earlier, however, they changed the name of the political candidate mentioned at the end of the song from the real Walter to a fictional "George" O'Brien. Without Walter O'Brien's name, the controversy disappeared and the single of "M.T.A." reached #15 on the Billboard chart, and the album on which it appeared reached #1.

Since then, "M.T.A." has become a part of American folklore, sung around campfires and recorded by artists from all over the world in styles ranging from folk to funk and rock to reggae.

Jackie Steiner and Bess Lomax Hawes, who wrote "M.T.A." went on to have long and successful careers performing, teaching and collecting folk music. Hawes died in 2009, and Al Katz of the Boston Peoples Artists died in 1997. But Steiner and the other surviving members of the group have fond memories of Walter O'Brien, and are proud of the progressive politics they shared and in the role they played in creating the folk classic known as "Charlie and the MTA."

The **CharlieCard** is a MIFARE-based, contactless, stored value smart card used for electronic ticketing as part of the Automated Fare Collection (AFC) system installed by the MBTA at its stations and on

its vehicles. The CharlieCard was made available to the general public beginning December 4, 2006. The last metal token was sold on December 6, 2006, at Government Center station.

One of the rejected names for the farecard system was "The Fare Cod", a pun on both the way locals might pronounce "Card" and the fish that was once integral to the Massachusetts economy, and also a reference to other transit cards named for ocean animals, such as London's Oyster and Hong Kong's Octopus. Another rejected name was T Go card with the T being the symbol for the MBTA.

The CharlieCard can store value (keep a cash balance) and hold a combination of time-based passes which allow unlimited rides during a set period of time. Passengers use the plastic, RFID-based CharlieCard by tapping it flat against a target on a gate or a vehicle farebox. If left in a wallet, the card can usually be read when the wallet is placed on the reader. The entire card must be completely flat against the target or else the system might double-charge the customer. The gate or farebox then either automatically debits the cost of the passenger's ride, or verifies that the card has a valid transfer or that the card has a pass that is valid for travel at the given time and location. Transit riders can add value or a monthly pass to their cards at machines located at MBTA stations and vehicles, MBTA ticket offices, retail sales terminals at select outlets and online.

The original CharlieCards showed no expiration date, but they did expire without warning five years after they were first activated. The first cards began expiring around November 2011. Users may tap their cards at a kiosk to find information on the expiration date; this information is not available online. To replace an expired CharlieCard, users must go to the Downtown Crossing pass sales office during weekday business hours, or mail the card to the MBTA. Money left on the expired card can be moved to the replacement card. This policy is in violation of Massachusetts Gift Certificate Law because a Stored Value CharlieCard fits the definition of an electronic card with a banked dollar value, yet currently there is no telephone or internet way for a customer to learn their balance, so Stored Value CharlieCards are supposed to never expire, according to the law, even though they currently expire for non-use.

At present, CharlieCards work on the Mata's subway and bus services, most of which were converted in 2006. They were originally expected to be usable on MBTA commuter rail and ferry boat services by

December 2008, with testing on the Commuter Rail originally planned for summer 2008. However, testing has been pushed back to 2009, and full implementation is not expected until 2011.CharlieCards will not be accepted on THE RIDE. However in early 2013 the MBTA has failed to implement CharlieCard service on the commuter rail or ferry service.

CharlieCards are gradually being expanded to the other transit authorities in Massachusetts. with testing on the Commuter Rail originally planned for summer 2008.

The automated fare collection equipment is also compatible with the Mata's CharlieTicket, a paper card with a magnetic stripe that operates as a stored-value card or time-period (monthly, weekly, or daily) pass. The MBTA first implemented the stored-value CharlieTicket on the Silver Line in February 2005. The ticket is inserted into a slot in the gate or farebox, the fare is deducted, and the remaining balance is displayed on a small screen. The ticket is then returned to the rider even if there is no remaining value.

Charlie Cards can be reloaded and CharlieTickets can be purchased and reloaded at Fare Vending Machines (FVMs) in converted stations and elsewhere in the system including buses. All FVMs accept credit and debit cards; most also accept cash and coins, including the discontinued MBTA tokens. The AFC fareboxes on buses and light rail trains accept CharlieCards, Change Tickets, CharlieTickets, cash (up to $20 bills), coins, and MBTA tokens. When customers pay with cash on the bus, they may receive their change on a "ChangeTicket".

The MBTA gives a discount for CharlieCard users that began with the fare increase that took effect on January 1, 2007, and continuing with the July 1, 2012 increase. For example, a subway or trolley ride costs $2 with a CharlieCard but $2.50 with a CharlieTicket or cash. Local bus riders get a $0.50 discount with a CharlieCard ($1.50 vs. $2), express bus riders pay an extra $1 or $1.50 depending on the route, and similar surcharges had been planned for commuter rail, and harbor ferries, but not THE RIDE. The MBTA also plans to continue providing the cards themselves free of charge, at pass offices, at stations throughout the system, at local retailers, and online.

There is also a senior citizen/disabled citizen Charlie pass, with reduced fares for qualifying individuals, called a "Senior/ TAP" (Transportation Access Pass) CharlieCard. Middle school and high school students also can obtain a discounted Char-

A Subway named Mobius

A.J. Deutsch *and* Isaac Asimov *with commentary by* Geoff Lambert

*I*N A COMPLEX AND INGENIOUS *pattern, the subway had spread out from a focus at Park Street. A shunt connected the Lechmere line with the Ashmont for trains southbound, and with the Forest Hills line for those northbound. Harvard and Brookline had been linked with a tunnel that passed through Kenmore Under, and during rush hours every other train was switched through the Kenmore Branch back to Egleston. The Kenmore Branch joined the Maverick Tunnel near Fields Corner. It climbed a hundred feet in two blocks to connect Copley Over with Scollay Square; then it dipped down again to join the Cambridge line at Boylston. The Boylston shuttle had finally tied together the seven principal lines on four different levels. It went into service, you remember, on March 3rd. After that, a train could travel from any one station to any other station in the whole system.*

There were two hundred twenty-seven trains running the subways every weekday, and they carried about a million and a half passengers. The Cambridge-Dorchester train that disappeared on March 4th was Number 86. Nobody missed it at first. During the evening rush, the traffic was a little heavier than usual on that line. But a crowd is a crowd. The ad posters at the Forest Hills yards looked for 86 about 7:30, but neither of them mentioned its absence until three days later. The controller at the Milk Street Cross-Over called the Harvard checker for an extra train after the hockey game that night, and the Harvard checker relayed the call to the yards. The dispatcher there sent out 87, which had been put to bed at ten o'clock, as usual. He didn't notice that 86 was missing.

It was near the peak of the rush the next morning that Jack O'Brien, at the Park Street Control, called Warren Sweeney at the Forest Hills yards and told him to put another train on the Cambridge run. Sweeney was short, so he went to the board and scanned it for a spare train and crew. Then, for the first time, he noticed that Gallagher had not checked out the night before. He put the tag up and left a note. Gallagher was due on at ten. At ten-thirty, Sweeney was down looking at the board again, and he noticed Gallagher's tag still up, and the note where he had left it. He groused to the checker and asked if Gallagher had come in late. The checker said he hadn't seen Gallagher at all that morning. Then Sweeney wanted to know who was running 86? A few minutes later he found that Darin's card was still up,

although it was Darin's day off. It was 11:30 before he finally realized that he had lost a train.

The title of the story borrows from the famous Tennessee Williams play, A Streetcar Named Desire which was produced three years before this story was published.

Plot: After the completion of a new addition to a subway system, the Boylston Shuttle, making the system completely closed, one of the trains disappears, with more than 300 passengers on board. A mathematician named Tupelo says that because the system is closed and interconnected, the subway must still be there, but in the 4th dimension. An investigation turns up nothing. Months later, Tupelo boards a subway car, and doesn't notice for several minutes that the newspapers the passengers are reading are months old. Train 86 has returned and the passengers have no idea that any extra time has elapsed.

The germ of the plot of this story rests in the "Möbius strip" so-called because its

properties were first carefully analyzed by a German mathematician, August Ferdinand Mobius, in the mid-nineteenth century. In the story, the name is spelled Mobius, because magazine printers usually didn't have type of an "o" with two dots over it, a symbol that belongs in the German alphabet.

You can easily construct a Mobius strip (right) for yourself. Take a piece of ordinary note paper about eleven inches long and cut a strip half an inch wide. Bend it in a circle so that the two short edges overlap. Give one of the ends a single twist and then paste them together so that the bottom side of one end adjoins the top side of the other.

The Mobius strip possesses only one side. If you make a pencil mark along the strip anywhere and keep drawing that mark till you return to the starting point, you will find the mark on the side that seems below as well as on that which seems above. The single side is both below and above. For the same reason, the Möbius strip pos-

sesses only one edge.
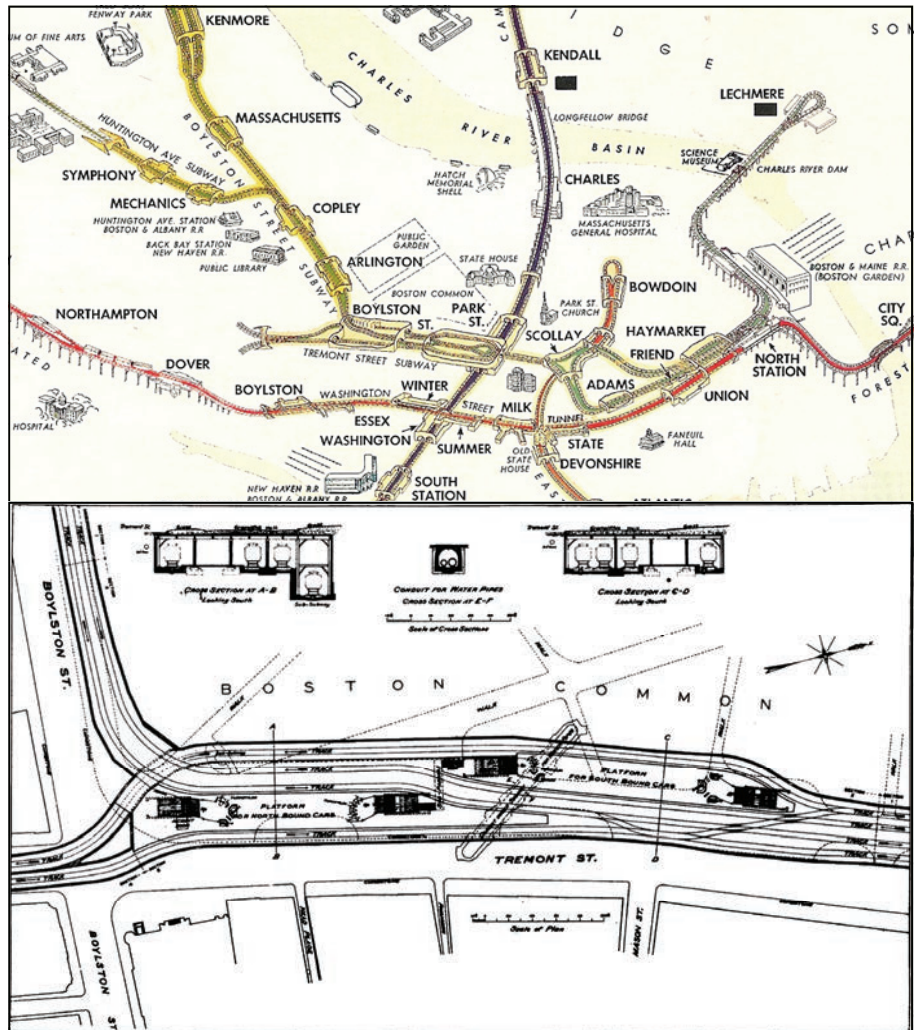
The properties of the Möbius strip are an example of the sort of thing studied in that branch of mathematics called "topology." The study of topology leads into the discovery and analysis of all kinds of figures very different from the common ones of everyday life. Their properties are so unusual that it is easy to imagine that you could build a subway network so complicated that its properties would be paradoxical in the fashion of the Mobius strip, only more so.

In 1950, when Deutsch (who died in 1969) wrote the story, he was in the Astronomy Department at Harvard University. Naturally, then, he wrote the story about the Boston subway system. Look at the maps of the Boston subway system (which is by no means as complicated as that of New York) and follow the references in the story, available by email from *The Times* Editor. Did Deutsch exaggerate the complexity of the system? Could the system, however complex, develop the kind of topological oddness Deutsch describes?

There is an odd coincidence in the story that has nothing to do with the story itself and that Deutsch could not have planned. One of the chief characters in the story is Kelvin Whyte. Well, in 1967, Boston elected a man named Kelvin White as mayor and he is still in that office as I (Isaac Asimov, 1972) write this.

History and timetables: The history of the Massachusetts Bay Transportation Authority (MBTA) spans two centuries, starting with one of the oldest railroads in the US. Development of mass transportation both followed existing economic and population patterns, and helped shape those patterns.

The predecessor of many of today's MBTA lines, was the Boston Elevated Railway, colloquially known as the BERy. It was formerly known as the West End Street Railway. The rapid transit lines have evolved into the Red, Blue and Orange Lines. The only streetcars that remain are the various branches of the Green Line and the Ashmont-Mattapan High Speed Line; the rest have been converted to buses.

The BERy and, indeed its successor the MTA, did not publish public timetables, but there seem to have been Employee Schedules. On page 14 is a Starter's Timetable for the Main Line prior to the Forest Hills and Everett Extensions. Look and you'll see that there are ten trains in different directions scheduled at the same Tower (C) all inside nine minutes, some at the same time. They even have trains departing on the half minute. There are a total of 189 trains departing between 8 AM and 9

ORDINARY STRIP, NO TWIST — MÖBIUS STRIP

PASTED TOGETHER

PASTED TOGETHER

TWIST

TOP SIDE — BOTTOM SIDE

TOP SIDE — BOTTOM SIDE
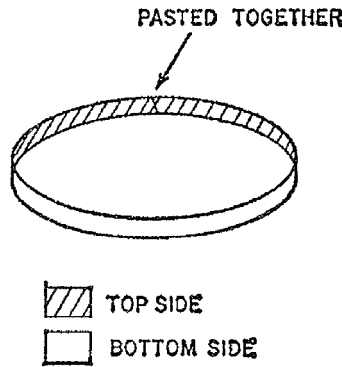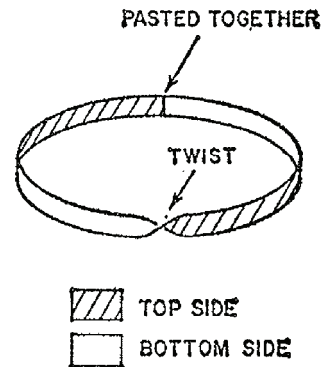
28 — MATTAPAN — ASHMONT
via HIGH SPEED TROLLEY

WEEKDAY		SUNDAY	
Leave MATTAPAN	Leave ASHMONT	Leave MATTAPAN	Leave ASHMONT
5:05 AM	5:15 AM	5:52 AM	6:02 AM
5:28	5:38	6:15	6:25
Ev. 12 min.	Ev. 12 min.	6:38	6:48
6:04 AM	6:14 AM	7:00	7:10
6:15	6:25	7:24	7:34
★	★	7:48	7:58
7:12 PM	7:10 PM	8:12	8:22
Ev. 12 min.	Ev. 12 min.	8:36	8:46
12:00 M	11:58 PM	9:00	9:10
12:13 AM	12:13 AM	9:24	9:34
12:28	12:28	9:48	9:58
12:45	12:42	10:12	10:22
	1:05	10:36	10:46
		11:00	11:10
		11:24	11:34

SATURDAY		11:48	11:58
Leave MATTAPAN	Leave ASHMONT	12:12 PM	12:22 PM
5:05 AM	5:15 AM	12:36	12:46
5:28	5:38	1:00	1:10
Ev. 12 min.	Ev. 12 min.	Ev. 12 min.	Ev. 12 min.
6:40 AM	6:50 AM	8:12 PM	8:22
6:51	7:01	8:36	8:46
★	★	9:00	9:10
8:44	8:54	9:24	9:34
Ev. 12 min.	Ev. 12 min.	9:48	9:58
11:32 AM	11:42	10:12	10:22
★	★	10:36	10:46
7:01 PM	7:11 PM	11:00	11:10
7:12	7:22	11:24	11:34
Ev. 12 min.	Ev. 12 min.	11:48	11:58
12:00 M	11:58 PM	12:13 AM	12:28 AM
12:13 AM	12:13 AM	12:45	1:05
12:28	12:28		
12:45	12:42		
	1:05		

★ - Frequent service, intervals 9 min. or less.
For further information call 522-5700

27-28 (3M) 6/20/64

CAR SERVICE BY HOURS FROM PARK ST SUBWAY STATION, ON LOOP AND ON THROUGH TRACK.

(Based on schedules in effect April 12, 1911.)

-CARS LOOPING AT PARK ST STATION.-

Lines Looping at Park St.	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 6	6 to 7	7 to 8	8 to 9	9 to 10	10 to 11	11 to 12	12 to 1	1 to 2	2 to 3	3 to 4	4 to 5	Trips Per Day
14 Grove Hall via Huntington Ave																		1	1						2
83 Ashmont St Sta.-		2	4	4	4	4	4	4	4	6	4	4	6	10	4	4	4	4	3						69
207 Forest Hills via Jamaica Plain		3	5	6	4	4	4	4	5	6	6	10	6	4	4	4	4	1							92
212 Jam.Plain via So.Huntington Ave		2	9	15	8	6	4	6	8	8	10	14	6	7	4	4	4	4							123
219 Chestnut Hill via Ipswich St		3	7	10	7	6	6	6	7	8	8	10	11	7	7	6	5	4	2						127
312 Milton-crosstown	1	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	1						109
655 Spring Hill		3	5	5	3	3	3	4	4	4	5	6	5	5	4	3	4	2	1						74
700 Belmont via Mt Auburn St		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	1						72
704 Watertown via No.Beacon St		4	5	6	4	4	4	4	4	4	4	8	4	4	4	4	4	3	1						79
707 Arlington Hts via Harvard Sq.	1	4	7	8	8	8	8	8	8	8	8	8	8	8	6	8	8	8	8	5	1				158
712 Newton via Mt Auburn St		2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3							65
722 Harvard Square via Broadway		1	2	2	2	2	2	2	3	2	3	4	2	2	2	2	2	2							39
744 Brookline St via Cottage Farm		4	7	7	5	4	4	4	4	4	5	8	5	4	3	3	3	1							82
746 Mt Auburn via Huron Avenue	1	3	4	4	4	7	8	4	4	4	6	9	8	8	7	4	4	4	1						98
752 Waverley via Mt Auburn St		4	5	9	4	4	4	4	4	4	7	7	4	4	4	4	3	1							84
759 No.Cambridge via Harvard Sq.			1	3	1							6	6												20
905 Allston via Beacon St		3	5	11	8	8	8	8	8	8	8	9	9	4	4	4	4	3	2						118
906 Oak Sq. via Commonwealth Ave			4	10							4	9	1												28
920 Reservoir via Brookline Village			4	8	4	4	4	4	4	4	8	11	5	4	4	4	4	1							81
921 Newton Line		4	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	3	1						73
923 Newton Line-Commonwealth Avenue		2	6	8	7	6	6	6	6	6	6	10	12	7	6	6	6	3	1						116
927 Oak Sq. via Brookline Village	1	4	4	4	4	4	4	4	4	4	4	8	4	5	4	4	4	1							73
932 Newton via Commonwealth Avenue	1	5	9	12	11	10	10	10	10	10	13	14	11	11	8	8	9	5	4						163
940 Reservoir via Beacon St		1	5	20	9	8	8	8	8	8	8	16	22	6	10	5	4	2							157
942 Newton Line		5	4	4	4	4	4	4	4	4	4	5	4	4	4	4	3	1							74
953 Allston via Brookline Village	1	1	1	5								2	3												13
960 Allston via Longwood Avenue		2	4	4	4	4	4	4	4	4	4	4	4	5	4	4	4	1							68
Total looping at Park St Station,	6	69	124	185	125	118	117	118	128	129	138	168	201	134	128	107	104	84	75	22					2261

Baseball, circus, and other extras, not included.

RAPID TRANSIT LINE	WEEKDAY						SATURDAY						SUNDAY					
	FIRST TRIP	RUSH HOUR SERVICE	MIDDAY SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
RED LINE																		
LV ALEWIFE	5:24AM	9 MINS.	14MINS.	12 MINS.	12 MINS.	w 12:15AM	5:24AM	14MINS.	14MINS.	14MINS.	14MINS.	w 12:15AM	6:08AM	16MINS.	16MINS.	16MINS.	16MINS.	w 12:15AM
LV BRAINTREE	5:15AM	9 MINS.	14MINS.	12 MINS.	12 MINS.	w 12:18AM	5:15AM	14MINS.	14MINS.	14MINS.	14MINS.	w 12:18AM	6:00AM	16MINS.	16MINS.	16MINS.	16MINS.	w 12:18AM
LV ALEWIFE	5:16AM	9 MINS.	14MINS.	12 MINS.	12 MINS.	w 12:22AM	5:16AM	14MINS.	14MINS.	14MINS.	14MINS.	w 12:22AM	6:00AM	16MINS.	16MINS.	16MINS.	16MINS.	w 12:22AM
LV ASHMONT	5:18AM	9 MINS.	14MINS.	12 MINS.	12 MINS.	w 12:30AM	5:16AM	14MINS.	14MINS.	14MINS.	14MINS.	w 12:30AM	6:00AM	16MINS.	16MINS.	16MINS.	16MINS.	w 12:30AM
"M" LV ASHMONT*	5:17AM	5 MINS.	8 MINS.	12 MINS.	12 MINS.	1:05AM	5:15AM	26MINS.	12MINS.	12MINS.	26MINS.	1:05AM	6:03AM	26MINS.	12MINS.	12MINS.	26MINS.	1:05AM
LV MATTAPAN*	5:05AM	5 MINS.	8 MINS.	12 MINS.	12 MINS.	12:53AM	5:05AM	26MINS.	12MINS.	12MINS.	26MINS.	12:53AM	5:51AM	26MINS.	12MINS.	12MINS.	26MINS.	12:53AM
BLUE LINE*																		
LV WONDERLAND	5:13AM	5 MINS.	9 MINS.	9MINS.	13MINS.	w 12:26AM	5:25AM	9 MINS.	9 MINS.	9 MINS.	13 MINS.	w 12:26AM	5:58AM	13 MINS.	9 MINS.	9 MINS.	13 MINS.	w 12:26AM
LV WOOD ISLAND	5:15AM	5 MINS.	9 MINS.	9MINS.	13MINS.	12:33AM	5:15AM	9 MINS.	9 MINS.	9 MINS.	13 MINS.	12:33AM	6:00AM	13 MINS.	9 MINS.	9 MINS.	13 MINS.	12:33AM
LV GOV'T CENTER	5:30AM	5 MINS.	9 MINS.	9MINS.	13MINS.	w 1:00AM	5:29AM	9 MINS.	9 MINS.	9 MINS.	13 MINS.	w 1:00AM	6:21AM	13 MINS.	9 MINS.	9 MINS.	13 MINS.	w 1:00AM
ORANGE LINE																		
LV OAK GROVE	5:16AM	6 MINS.	8 MINS.	10 MINS.	10MINS.	w 12:30AM	5:16AM	10 MINS.	10MINS.	10MINS.	10MINS.	w 12:30AM	6:00AM	13MINS.	10MINS.	10MINS.	10MINS.	w 12:30AM
LV FOREST HILLS	5:16AM	6 MINS.	8 MINS.	10 MINS.	10MINS.	w 12:35AM	5:16AM	10 MINS.	10MINS.	10MINS.	10MINS.	w 12:35AM	6:00AM	13MINS.	10MINS.	10MINS.	10MINS.	w 12:35AM
GREEN LINE																		
"B" LV BOSTON COLLEGE	5:01AM	7 MINS.	9 MINS.	10 MINS.	11MINS.	12:10AM	4:45AM	7 MINS.	7MINS.	7 MINS.	11 MINS.	12:10AM	5:20AM	10 MINS.	9 MINS.	10 MINS.	10 MINS.	12:10AM
LV GOVERNMENT CTR.	5:39AM	7 MINS.	9 MINS.	10 MINS.	11MINS.	12:52AM	5:35AM	7 MINS.	7MINS.	7 MINS.	11 MINS.	12:52AM	6:06AM	10 MINS.	9 MINS.	10 MINS.	10 MINS.	12:52AM
"C" LV CLEVELAND CIR.	5:01AM*	7 MINS.	10 MINS.	7MINS.	14 MINS.	12:10AM	4:50AM*	10MINS.	8 MINS.	8 MINS.	10 MINS.	12:10AM	5:30AM*	10 MINS.	10 MINS.	10 MINS.	10 MINS.	12:10AM
LV NORTH STATION	5:55AM	7 MINS.	10 MINS.	7MINS.	14 MINS.	12:50AM	5:30AM	10MINS.	8 MINS.	8 MINS.	10 MINS.	12:50AM	6:06AM	10 MINS.	10 MINS.	10 MINS.	10 MINS.	12:50AM
"D" LV RIVERSIDE	4:56AM	7 MINS.	11 MINS.	10 MINS.	13 MINS.	12:05AM	4:55AM	10MINS.	8 MINS.	10 MINS.	10 MINS.	12:05AM	5:25AM	10 MINS.	10 MINS.	10 MINS.	10 MINS.	12:05AM
LV GOVERNMENT CTR.	5:34AM	7 MINS.	11 MINS.	10 MINS.	13 MINS.	12:47AM	5:34AM	10MINS.	8 MINS.	10 MINS.	10 MINS.	12:47AM	6:06AM	10 MINS.	10 MINS.	10 MINS.	10 MINS.	12:47AM
"E"LV LECHMERE	5:01AM	6 MINS.	8 MINS.	10 MINS.	14 MINS.	12:30AM	5:01AM	10 MINS.	9 MINS.	10 MINS.	10 MINS.	12:30AM	5:35AM	12 MINS.	12 MINS.	12 MINS.	10 MINS.	12:30AM
LV HEATH STREET	5:30AM	6 MINS.	8 MINS.	10 MINS.	14 MINS.	12:47AM	5:30AM	10 MINS.	9 MINS.	10 MINS.	10 MINS.	12:47AM	6:15AM	12 MINS.	12 MINS.	12 MINS.	10 MINS.	12:47AM

★ The first 2 "C" Line AM inbound trips run through to Lechmere Station on Weekdays. ★ The first "B" Line and the second "C" Line AM inbound trips run through to Lechmere Station on Saturday and Sunday.

SILVER LINE	FIRST TRIP	RUSH HOUR SERVICE	MIDDAY SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP	FIRST TRIP	A.M. PEAK SERVICE	P.M. PEAK SERVICE	EVENING SERVICE	LATE NIGHT SERVICE	LAST TRIP
SL1 LV LOGAN AIRPORT	5:38AM	10 MINS.	10 MINS.	10MINS.	12 MINS.	12:45AM	5:33AM	12 MINS.	12 MINS.	12 MINS.	12 MINS.	12:45AM	5:50AM	12 MINS.	8 MINS.	8 MINS.	8 MINS.	12:45AM
LV SOUTH STATION	5:40AM	10 MINS.	10 MINS.	10 MINS.	12 MINS.	12:00AM	5:35AM	12 MINS.	12 MINS.	12 MINS.	12 MINS.	12:00AM	6:12AM	12 MINS.	8 MINS.	8 MINS.	8 MINS.	12:00AM
SL2 LV DESIGN CENTER	6:03AM	5 MINS.	10 MINS.	9MINS.	15 MINS.	12:30AM	6:10AM	15 MINS.	15 MINS.	15 MINS.	15 MINS.	12:35AM	6:50AM	15 MINS.	15 MINS.	15MINS.	15 MINS.	12:34AM
LV SOUTH STATION	5:45AM	5 MINS.	10 MINS.	9 MINS.	15 MINS.	w 12:50AM	5:50AM	15 MINS.	15 MINS.	15 MINS.	15 MINS.	w 12:48AM	6:35AM	15 MINS.	15 MINS.	15MINS.	15 MINS.	w 12:48AM
Additional Waterfront-only service																		
LV SILVER LINE WAY	5:28AM	5 MINS.					5:28AM						6:05AM					
LV SOUTH STATION	5:35AM	5 MINS.	Use SL1/SL2			12:55AM		Use SL1/SL2				12:52AM		Use SL1/SL2				1:00AM
SL4 LV DUDLEY STATION	5:20AM	10 MINS.	15 MINS.	15MINS.	20 MINS.	12:20AM	5:23AM	15 MINS.	15 MINS.	15MINS.	20 MINS.	12:20AM	6:02AM	15 MINS.	15 MINS.	15MINS.	20 MINS.	12:20AM
LV SOUTH STATION	5:40AM	10 MINS.	15 MINS.	15 MINS.	20 MINS.	12:40AM	5:30AM	15 MINS.	15 MINS.	15MINS.	20 MINS.	12:40AM	6:20AM	15 MINS.	15 MINS.	15MINS.	20 MINS.	12:40AM
SL5 LV DUDLEY STATION	5:15AM	7 MINS.	10 MINS.	8MINS.	15 MINS.	12:48AM	5:19AM	10MINS.	10MINS.	11MINS.	11 MINS.	12:46AM	6:00AM	10 MINS.	8 MINS.	9 MINS.	9 MINS.	12:25AM
DOWNTOWN CROSSING	5:30AM	7 MINS.	10 MINS.	8 MINS.	15 MINS.	w 1:02AM	5:34AM	10MINS.	10MINS.	11MINS.	11 MINS.	w 1:00AM	6:15AM	10 MINS.	8 MINS.	9 MINS.	9 MINS.	w 12:47AM

ANNOUNCING THE BIG NEW
MTA LINE
HIGHLAND BRANCH

- FENWAY PARK
- LONGWOOD
- BROOKLINE VILLAGE
- BROOKLINE HILLS
- BEACONSFIELD
- RESERVOIR
- CHESTNUT HILL
- NEWTON CENTRE
- NEWTON HIGHLANDS
- ELIOT
- WABAN
- WOODLAND
- RIVERSIDE TERMINAL

MTA
METROPOLITAN TRANSIT AUTHORITY

AM, with 2262 departures for the day.

Boston's subway was the first in the United States and is often called "America's First Subway" by the MBTA and others. In 1897 and 1898, the Tremont Street Subway opened as the core of the precursor to the Green Line:— the line that was to feature in *A subway named Mobius.*

In 1947, the newly formed Metropolitan Transportation Authority (MTA) purchased and took over the subway, elevated, streetcar, and bus operations from the BERy. The original MTA district consisted of 14 cities and towns — Arlington, Belmont, Boston, Brookline, Cambridge, Chelsea, Everett, Malden, Medford, Milton, Newton, Revere, Somerville and Watertown. Deutsch wrote his story a year later. A 1962 timetable for the Matappan-Ashmont high speed trolley appears on our page 13.

The last two streetcar lines running into the Pleasant Street Portal of the Tremont Street Subway were substituted with buses in 1953 and 1962, and the portal has since been covered over by a public park. It is—hopefully—no longer possible for a train to disappear down a worm-hole.

On August 3, 1964, the MBTA succeeded the MTA, with an enlarged service area of 78 cities and towns. A 79th community (Maynard) joined in or before 1972 and left in or after 1976. The MBTA was formed partly to subsidize existing commuter rail operations, provided at that time by three private railroad companies — the Boston and Maine Railroad, the New York Central Railroad (via the Boston and Albany Railroad) and the New York, New Haven and Hartford Railroad — with the B&M running the north-side lines and the NYC and NYNH&H (both merged into Penn Central in 1968, and taken over by Conrail in 1976) on the south side. The MBTA soon began to subsidize the companies, and acquired the lines in stages from 1973 through 1976, but with major cutbacks in service and coverage area. Since then, many of these lines have seen service return, most notably the Old Colony Railroad (NYNH&H) lines to the South Shore.

Today, timetables are still of the ABC type, showing just frequency of departures; an example appears on our page 14 (bottom).

As with most transit systems today, passengers relay on their apps and MBTA's own real-time service web-sites, an example of which appears at right. It seems that #86 is still rumbling around subterranean Boston– and it appears to be carrying most of the extant copies of the old timetables with it.

Editor's note: Next month we are off to Boston to ride the subway and see all of this for ourselves.

We shall return…...I hope.

HARVARD SQ
PARK ST
COPLEY
NORTH STATION
CHINATOWN
BACK BAY
KENMORE SQ
FENWAY
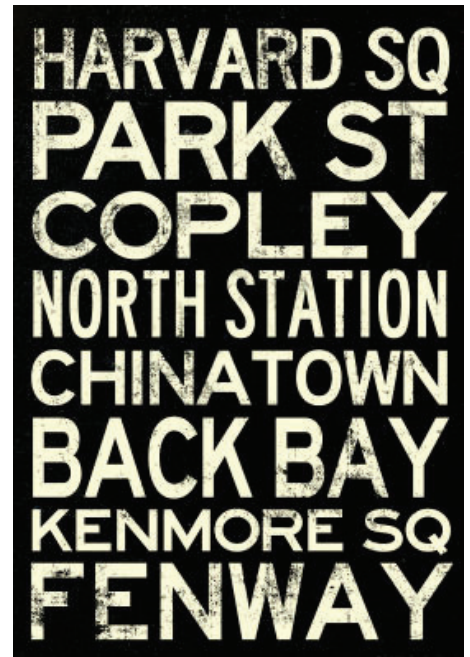
Boston MBTA Schedules and Maps

- Subway PDF Map
- Subway PDF Schedule
- Green Line Schedule

All PDFs can be viewed with Adobe Acrobat Reader version 4.0 or higher.

 Service Alerts

Green Line: **1 Current 1 Upcoming**

Delay: Green Line B branch experiencing minor delays due to disappearing train #86

Accessibility: Escalator 390 SOUTH STATION - Outbound Platform to 2nd Level Lobby out of service due to scheduled repairs**.**

Accessibility: Escalator 389 SOUTH STATION - Outbound Platform to CSA Area out of service due to scheduled repairs.

Click here for all service alerts
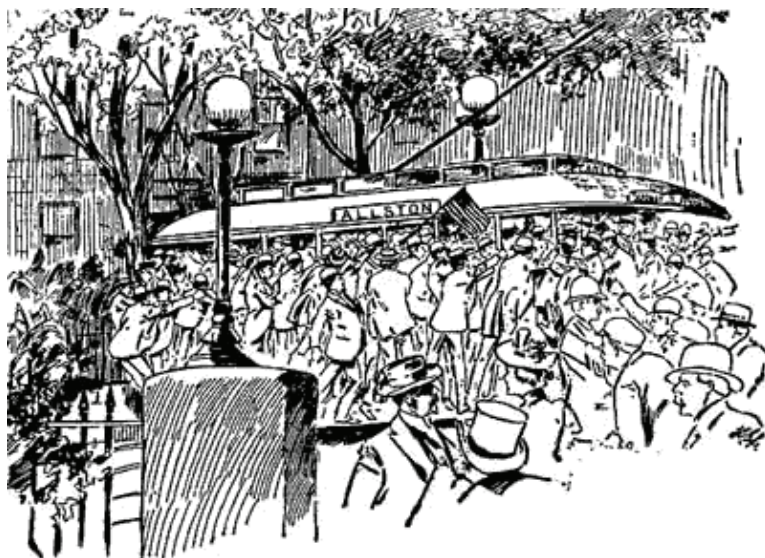
THE CROWDED FIRST CAR AT THE SUBWAY ENTRANCE

Station names (map):

Oak Grove, Malden, Wellington, Sullivan Square, Community College, North Station*, Haymarket*, Science Park, Lechmere, Davis, Alewife, Porter, Harvard, Central, Kendall/MIT, Bowdoin, Gov't Center, Charles/MGH, Park St, State*, Aquarium, Maverick, Airport, Wood Island, Orient Heights, Suffolk Downs, Beachmont, Revere Beach, Wonderland

Boston College, Cleveland Circle, Riverside, Woodland, Waban, Eliot, Newton Highlands, Newton Centre, Chestnut Hill, Reservoir, Beaconsfield, Brookline Hills, Brookline Village, Heath, Kenmore, Hynes/ICA, Copley, Arlington, Boylston, Fenway, Longwood, Prudential, Symphony, Museum of Fine Arts, Brigham Circle, Downtown Crossing, Chinatown, NE Medical Center, South Station, Back Bay, Mass Ave, Ruggles, Roxbury Crossing, Jackson Square, Stony Brook, Green St, Forest Hills, Broadway, Andrew, JFK/UMass, Savin Hill, Fields Corner, Shawmut, Ashmont, Cedar Grove, Butler, Milton, Central Ave, Valley Rd, Capen St, Mattapan, North Quincy, Wollaston, Quincy Center, Quincy Adams, Braintree

Logan International Airport

LEGEND

Transit lines & stop

Commuter rail & station

Terminal station

Free interchange with other lines

Accessible Station

P Parking

*Chinatown: Accessible only in Oak Grove direction
*Haymarket: Accessible for Orange line only.
*North Station: Accessible for Green line only.
*State: Not accessible for Blue line inbound.

Boston Harbor Ferry Services
1 Lovejoy Wharf to Charlestown Navy Yard
2 Lovejoy Wharf to U.S. Courthouse to World Trade Center
3 Long Wharf to Charlestown Navy Yard
4 Hingham Ship Yard to Rowes Wharf, Boston
5 Pemberton Point, Hull to Long Wharf, Boston

Schedule & fare information......(617) 222-3200
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