NE" YORK DIVISION, ELECTRIC RAILROADERS ASSOCIATION

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The regular monthly meeting of the New York Division, ERA, will be held 8 pm, Friday, April 29, 1960 in Room 'C' of the Fourth Floor YMCA, Penn Station, New York. Doors open 7 pm. Use Elevator at 8 Ave. & 32 St. entrance and turn right as you leave the elevator.

1960

## ENTERTAL NMENT

Trolley Vignettes by Jos. & Richard Brown Color Movies Conade, Midwest & Local Scenes 1954-1959

THIS MONTH'S MEETING IS BEING HELD ON THE FIFTH FRIDAY, APRIL 29, 1960 --and the second section of the second section is a second section of the section of

IRT SERVICE LISTING starts Page 2; Canal Street Subway Story on p. 7 -- \* \* \* \* --

The PARK & RIDE lot at the Westchester Ave. Yards of the IRT Pelham Line has closed and the special train service into the yard with passengers for the Park & Ride has been discontinued. A new park & Ride ... lot is to be constructed at the IND Grant Ave. station near the Queens and Brooklyn dividing line.

MYCTA is considering more service cuts and changes on the BMT. The Fourth Ave. Local would be rerouted through Massau Street and combined with the BMT Jamaica Line. Perhaps the reason is that both lines use two green marker lights. The Brighton Local would run via tunnel and to Astoria at all hours. Forest Hills service would be provided by the Beighton Express. However, NYCTA plans to run the Brighton Exp. in rush-hours only. Perhaps there would be no mid-day EMT to Forest Hills.

IRT SERVICE CHANGES are imminent now that we have published the present services. Covered signs showing the new hours of operation have been seen at the Nevins Street TRT station in Brooklyn. According to reports, the main effect would be to have present owl service start at 9 pm.
However, Pelham trains would be extended to South Ferry and the Brooklyn... terminals would be reversed. Presently all trains run local on Lexington Ave. after 9 pm, Monday through Friday. See Page Six for later details.

PLATFORM EXTENSIONS are to be started this year on the IRT stations at New Lots Ave., Sutter Ave. and Rockaway Ave., Brooklyn, also Boro Hall, Adlantic Ave. and Utica Ave. This is probably for operation of new and cars (in 10-car trains) on Lexington Ave. expresses. Next year Brooklyn stations of the 7 Ave. line will be lengthened. Perhaps, 10-car trains 7111 be restored to the West Side expresses after the job is completed. Friension of BT platforms to accommodate 10 car IND and 9 car BMT trains is scheduled as follows: Sea Beach and West End Exp. stations to start in 1961; Fourth Ave. Local stations in 1962 and Brighton stations in 1963. No schedule has been announced for Eastern Div. BMT.

EMT 2000's continue to be "modernized." Most are 2500's and 2700's livell will The outsides are not painted as were the sample cars. Approval has been given for another 189 in addition to the present 200 being done cone another 189 in addition to the present 200 being done cone report says the 189 will be "speeded-up."

A SUMMARY OF SERVICES ON THE IRT DIVISION, MYCTA (Fobruary 29, 1960) By Alex Friedlander, Arthur Lonte & Henry Raudenbush

Car Types: All IRT cars are 51 feet long but there are now four basic types, none of which can be operated with any other type:

Low V. Built before 1925.

Fliver. Built as High V and converted to Low V. Old type controllers. Numbers 4037-4160 (motor) and 4161-4214 (trailer).

Steinway. Red line under number. World's Fair cars included in this group.

R-Type or SIEE. Build since 1947 and can operate with any other. R-12 5703-5802, R-14 5803-5952, R-15 5953-5999 & 6200-6252 used on 7 R-17 6500-6899 used on routes 1, 2, 3 and 6 (5 and 9 weekends) R-21 7050-7299, R-22 7300-7749 used on routes 1, 2, and 3(5 & 9 wknd) R-26 7750-7859 used on route 6 (Single end kept in pairs)

Markers: the light over the motorman's cab is given first. Route numbers are official but letters are not.

- BROADWAY LINE
- Cars: Base and Rush 8, Weekends 6, Owl 4; All R-Type. 242nd St-South Ferry making all stops. Úses outer loop at South Ferry. Runs all hours except when 10 operates. Markers: Red-Red HFAD AY: Mon-Fri Base 10, Rush 6, northbound rush PM 3; Night 12, Owl 20, Sat 6, Sun 8, Sat-Sun night 8.
- 137th St-South Ferry making all stops. Mon-Fri leaves 137th St. 5:34 AM-11:35 PM, leaves South Forry 6:11 AM-12:26 AM. Markers: White Red. HEAD AY: Base 10, Rush 6, Hight 12.
- IC 242nd St-South Ferry. Same as 1A but does not stop at 191, 181, 157 or 145 Streets. Leave 242nd St. 7:24-8:24 All. (Southbound only) Markers: Yellow - Red HEADWAY: 6, No PM Operation
- 1D Dyckman (200th) St-South Ferry making all stops. Lv Dyckman St 7:34-8:28 All and 3:46-4:46 PM. Lv So. Ferry 8:25-9:03 AM In PM returns to 242nd Street as 1A. Horkets: Green-Red HEADWAY: 6.
- 7th AVENUE-BRONX EXPRESS Cars: Base and Rush 9 (All types); Sat 6, Sun 6, Night 6, Owl 5 (R types)
- 2A Dyre Avenue or E. 180th St.-New Lots Avenue making all stops except between 96th St and Chambers St where it is an express. HEADWAY: Base 10, Rush 5-6; Sat 8, Sun 10, Night, 10-12 Trains to and from E. 180th St - Markers Green-Yellow

Mon-Fri Lv E 180th St 5:02 AM-12:18 AM 5:12 AM-12:26AM 6:33 AM-12:18 AM Lv New Lots AV 5:36 AM- 1:10 AM 5:58 AM- 1:11 AM 7:25 AM- 1:11 AM

Approximate Running time New Lots to Times Square 39 min. Non Rush to 45 min. Rush

4U

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Alternate trains run past E. 180th St to Dyrc Ave during the following
 hours. For the other times see Route 9. Markers: Green-Red
                              Mon-Fri
                                                                        Sun
                            5:22 AM-8:29 PM
 Leave Dyre Ave
                                                7:28 AM-8:37 PM 8:46AM-8:42PM
· Leave New Lots Ave
Pass Times Square (NB) 6:20 AM-7:42 PM
                                                6:41 AM-7:47 PM 8:08AM-7:49PM
     7th Ave-White Plains Express. Runs Owl Service. Markers: Yellow-Red
     Operates from E. 241st St to Flatbush Ave making express stops only
     between 96th St and Chambers St.
                            Mon-Fri
                                                    Sat
     Lv E 241st St
                       12:19 AM-4:41 AM 12:19 AM-4:51 AM 12:20AM-6:12 A
     Lv Flatbush Ave 1:07 AM-5:25 AM 1:08 AM-5:46 AM 1:08AM-7:12 A
     Two trains run from Flatbush to E 180th St only carrying Green-Green
     markers. Lv Flatbush 12:52 AM, Tue-Sat and 6:49 PM, Mon-Fri
     7th AVENUE-LENOX EXPRESS
                Cars and Headway same as Route 2(Exc. Rush, 4-5 min)
     145th St and Lenox Ave-Flatbush Ave making express stops only between
 3A
     96th St and Chambers St.
                        Mon-Fri
                     5:25 AM-12:42 AM 5:35 AM-12:37 AM 7:06 AM-12:42 AM
     Lv 145-Lenox
    Lv Flatbush 5:34 AM-12:56 AM 5:55 AM-12:56 AM 7:22 AM-12:53 AM Note: 145th St-Lenox Ave Station is closed when this service is not
     operating, presently the only TA station with part-time service.
    Markers: Red-White.
     The 3A service is supplemented with extra trips between 145th St-
3B
     Lenox Ave and New Lots Ave as below (Markers: Red-Green)
    Lv 145th-Lenox 8:20, 8:44, 9:07 AM and 5:03 PM
Lv New Lots Ave 6:57 AM and between 3:10 and 3:44 PM
    LEXUNGTON - JEROME EXPRESS
4
           Cars: Base and Ruch 10; Sat-Sun 7; Owl 5. All Low-V
4A Woodlawn-Atlantic Ave making express stops south of 125th St. only.
    Markers: Green-Red
    Woodlawn-Utica Ave same as above. Markers: Green-Green
4U
    Woodlawn-New Lots Ave as above but making all local stops from
4N
    Franklin Ave to New Lots. Markers: Green-White. In addition certain
    trains to and from the yards do not stop at Kingston or Nostrand Aves. Trains leaving Woodlawn at 5:58 am and 11:06 pm on Sat and
    leaving New Lots Ave at 6:322 & 6:462 AM Mon-Fri and 11:582 AM
    Sun skip these two stations.
    Note: Southbound trains leaving Woodlawn from 6:41 to 8:28 All and
    northbound trains passing 125th St from 4:46 to 6:07 PM dc. not
    stop at 138th St using center track between 138th and 149th-Gd. Conc.
                  Ly Woodlawn
                                                 Lv Brooklyn
              4N 11:48PM- 5:24AM

4U 5:36AM- 9:00AM

4A 9:08/AM- 2:25AM

4U 2:33PM-11:36PM
    Mon-Fri
             4N
                                             12:50 1/2 6:46 1/2 M
                                             6:50 M4-10:16 AM
                                          10:33 MI- 3:34 RM
                                             3:33 PM-12:49 AM
              4N 11:48PM- 5:34AM
    Sat
                                           12:502AII 6:592AM
              4U
                   5:46MF-11:36PM
                                             7:02 AM-12:51 AM
                  11:48PT 6:31AM
6:43AM-10:55AM
11:07AM-11:36PM
12:21 PM-12:49 PM
    Sun
              4N
              4A
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HEADWAY: Base 10, Rush 5, Sat 8, Sun 10, Night 10-12, Owl 20.

- LEXINGTON WHITE PLAINS ROLD LINE Cars: Base and Rush 10, Night 7; Low V or Flivvers Sat-Sun 6-7; R Type or Low V
- 5A E. 241st St-White Plains Road and Atlantic Avenue Brooklyn making Express stops south of 125th St. and Lexington Avc. Markers: White-
- 5U Same as above but extended to Utica Ave. Markers White-Red 58 As 5A above from 241st St. to Bowling Green. Then to South Ferry. Markers: Red-Green. This is the night and weekend service but certain rush-hours trains run to South Ferry carrying passengers north of Bowling Green and only northbound in the PM ruch.

  LV Gun Hill Rd. 7:10 MM, LV 241 St 8:20 MM, LV 180 St 3:44, 3:54
  & 4:04 PM. (PM light) LV S. F. 9:31 MM, 4:37, 4:47 and 5:23 PM.

Mon-Fri	·5U	4:53 11-8:49 AM		F77	Northbound	
•	51.	8:57 AM-2:16 PM		5℧ 5∆	5:55 XI-10:21 AM	
	5U	2:24 PIE5:59 PM		5U	10:38 ALL 3:37 PM 3:36 PL 6:54 PM	
Sat		6:09 PI-12:17/M 5:03 / 8:08 / M	_	<u>5</u> S	7:18 P - 1:26 /M	
C	_5S	8:16 MF12:17AH		50 . 59	6:36 <u>M</u> - 9:08 <u>M</u>	_
Sun :	55	-6:24 AM-12:17AM	-	. <u>5</u> 3 –	9:24 AY- 1:26 AY 7:31 AY- 1:26 AY	

- 5F 241 St-Flatbush Ave service in rush hours. Same as 5U to Franklin Ave., then local to Flatbush Ave. Markers: White-Yellow Southbound trains pass Grand Central 6:49-7:49 AM and 4:49-5:36 PM Norhbound trains leave Flatbush Ave. 7:33-8:32 AM and 5:32-6:21 PM 9 trains in AM and 6 trains in PM.
- 5N 241 St-New Lots Ave service to and from the yards. Same as 5U to Utica and then all stops to New Lots. Carkers: Thite-White Mon-Fri Lv New Lots  $5:44\frac{1}{2}$ ,  $6:28\frac{1}{2}$ ,  $6:49\frac{1}{2}$ ,  $7:13\frac{1}{2}$ ,  $7:19\frac{1}{2}$  1;  $352\frac{1}{2}$ ,  $4:02\frac{1}{2}$ ,  $4:42\frac{1}{2}$  &  $5:14\frac{1}{2}$  TM. Southbound trains pass Grand Control at 5:10, 5:42, 6:00, 6:26, 6:36 & 6:46 PM. Sat. trains Lv New Lots  $5:47\frac{1}{2}$ ,  $5:59\frac{1}{2}$ ,  $6:11\frac{1}{2}$  MY and run local to Franklin.

Cortain rush-hour trains to the yards carry passengers to E 238 St. only. Markers: Red-Red. Northbound trains pass Grand Central at

8:40, 8:56, 9:02, 9:12, 9:45 AM; 4:48, 4:58, 5:12, 5:18 \$ 5:24 PM.
5TX Thru express service northbound in the PM rush and southbound in the AM rush skipping all stations between 149th St-3rd Ave and Gun Hill Road except E, 180th St. Ly E 241 St: 6:42-8:20 AM Pass 149 St-Gd. Conc. Northbound 4:50-615

HEADYAYS: Base 10, Sat 8, Sun 10, Rush hours 3 1/3.

LEXINGTON - PELHAM BAY LINE

Cars: Base, Rush and Sat 8, Sun 6, Owl 4. R-17 & R-26 Polham Bay Park and Brocklyn Bridge making all steps. Markers: Red-Red: Runs all hours except when 6X is in operation. HEADWAY: Base 10, Rush 4-6, Sat 5, Sun 7, Night 8, Owl 20.

177 St, Parkehester and Brooklyn Bridge making all stops.
Barkers: White-Red. Lv 177 St 6:41-AM-5:56 PM; Lv B. B. 7:29 AM-6:46
Same as 6P but skips all stations between 177 St and 138 St-3rd Ave except Hunts Point Ave. Operates southbound in AM rush and northbound in PM rush. Lv. Polham Bay 6:34-10:02 AN; Lv B.B. 3:41-6:50PM. Markers: Yellow-Rcd.

## FLUSHING LINE

Cars: Base and Rush 9, Sat and Sun 6, Owl 3-6 Times Square to Main Street naking all stops. Runs at all hours 7L except from 4:44-5:55 PM. Markers: Red-Red. HEADWAY: Base 6, Rush 4, Sat 6, Sun 8, Night 8-12, Owl 20.

Times Square and Willets Point Blvd. making all stops. Lv Willits 7W 8:30, 8:35, All; 5:27-5:42 & 6:17 File Ly Timos Square 4:48-5:51 PM.

7C Times Square tollith St. making all stops. Markers: White-Red. Lv 111 St 7:08-8:56 AM; 2:27-3:27 and 3:54-5:09 Pit. In the AM a number of trains leave Times Square and operate light to lith St or Willits Point Blvd 7:56-10:07 AM.

Times Square and Main St. making express stops only. Operates inbound in AM and outbound in PM (weekdays only). Markers: Yellow-Rcd HEADWAY: Base 10, Rush 4. Ly Main St 6:29-9:56 All; Ly Times Square 3:01-7:32 Pil.

Route 8 was officially designated to the Astoria Line. The els and shuttles were assigned no route numbers. (Except 9 for the . Dyre Ave line). We shall assign #8 to the Third Ave line.

THIRD AVENUE LINE

Cars 6 Steinway (No World's Fair) Markers: Red-Red Makes all local stops between Gun Hill Road and 149th St.-Third Ave. Operates all hours. HELDWAY: Base 12, Rush 5, Sat 15, . Nights and Sunday 20, Owl 30

DYRE AVENUE SHUTTLE SERVICE

Cars 3 (usually R-Types) Markers: Rod-Rod East 180th St-Dyre Avenue making all stops. Operates when Route 2 does not operate through to Dyre Ave. HEADWAY: Mon-Sat 18, Sun 20.
Owl service as follows: Lv Dyre 12:38, 1:03, 1:33, 2:13, 2:53;
3:28, 4:06, 4:41; 5:21(Sat-Sun) Lv E 180 St 12:42, 1:12, 1:50, 2:30, 3:10, 3:45, 4:25, 5:05(Sat-Sun)

42nd STREET SHUTTLE Worlds Fair Cars Markers: Red-Red. Times Square and Grand Contral. HELDWAY Base 42, Rush 22, Owl 10. Runs all

BOWLING GREEN SHUTTLE Two special Low-V cars. Markers: Red-Red Bowling Green and South Ferry. Operates when 5S does not. HEADYAY: Base 5, Rush 4, Owl 15.

Of Threh 1, 1960, all Lexington Ave. trains began oper-NOTE: ating as locals after 9PM on Monday-Friday nights in connection with construction of an express stop at 59th St. Plans are to institute owl service at 9 PM each night with the following changes. Lex-Jerome trains repouted to Flatbuch Ave., 7th Av-Write Plains Road trains rerouted to New Lots Ave and Lex-Pelham extended to

South Forry. For later details, see Page 6

Rush Hour serviced operate Monday to Friday only. at fall the second on the LT indicates Light- No Passengers. curaing speciel tening to long were, of the section) the cases out

Acknowledgement to Martin Schaene for help in preparing this Bulletin

IRT CHANGES IN SERVICE -- APRIL 8, 1960

The list of IRT Services was planned to be more descriptive than it appears on pages 2-5 of this BULLETIN. However, since many changes in service and markers on Friday, April 8th, the listing is more historic than current. The following is a brief summary of some of the new services:

- 1-BROADWAY 1B new markers-Yellow-Red; 1C Green-Red; 1D White-Red
- 2-7 Ave.-BRONX EXP. Regular service is now (2F) E. 180 St. to Flatbush Red-White and (2D) Dyre Ave. to Flatbush, Red-Green.

  New Owl service: E. 241 St-W.P.Rd. to New Lots (via 7 Ave. Exp.) Green-Red
- 3-7 Ave.-Lenox Exp. 3B is now the usual service. Markers: White-Red
- 4-Lewington-Jerome Exp. 4-F Rush-hour service to Flatbush replaced 5F Markers; Green-Yellow. 4N Runs to and from yards. Markers: Green-Green. 4A and 4U are basically unchanged.
- 4-Lexington-Jerome Local Owl service (Southbound at Fulton St. 9:02pm + 6:14 AM; M-F; 12:07am-6:13am Sat.; 12:40-6:16am Sun.) (4-0) All stops in Manhattan, bypasses Hoyt St. in Brooklyn, then all local stops in to Flatbush Ave. Green-Yellow
- 5-Lexington-White Plains Exp. 5A and 5U and 5N basically unchanged.
  5F discontinued. 5-S now uses White-Yellow. services stops about 9 pm Mon-Fri.
  5TX markers reversed to Yellow-Red. 238 St. trains now carry same markers as 241.
- 6-Lexington-Pelham Local. 6P, 6L and 6X are unchanged except replaced by 6S after about 9 pm Mon-Fri. and 12 Midnight or 1 AM on weekends.
  6S Pelham Bay Park to South Ferry. Markers: Green-Red
- Other services are basically unchanged, but Bowling Green Shuttle does not operate when Pelham Line is operating to South Ferry, A new 145 St-Lenox to 135 St-Lenox Shuttle has been inaugurated, probably operating only during the hours 9pm-lam.

Until the elimination of the BMT theatre service on the Brighton Local via Bridge and express in Manhattan, there was an instance of a pure local running express on part of its route. Now with the new IRT service the Lexington-Jerome Local service runs express past Hoyt Street in Brooklyn.

CAR SCRAPPINGS, REPLACEMENTS, ETC.

The engineers who inspected the operations of the TA recommended that cars be replaced after a service life of 35 years, in order to avoid expensive maintenance and frequent breakdowns. The orange of replacing cars steadily after different service ires is given below. In addition the cost of catching up to the standard by 1970 is given.

Service life of cars	Cost of catching up by 1970 (per year)	Cost per year after 1970.
30 years	\$51,360,000	\$26,000,000
3 <b>5</b>	39,360,000	22,288,400
40	29 <b>,</b> 760 <b>,000</b>	19,500,000
45	26,580,000	17,329,000
<i>5</i> 0	20,880,000	15,600,000

The above figures are based on a fleet of 6500 cars, costing \$120,000 each. It should be mentioned that cars purchased by other systems have cost about \$90,000.

ROCKAWAY-AQUEDUCT SERVICE With the opening of the spring meet at Aqueduct Race Track, the shuttle trains on the Rockaway Division have been lengthened to ten cars. The Aqueduct Special is also in operation. In the first few hours that the track Race Track is open each day, certain Rockaway-bound shuttle trains are diverted to run against traffic and stop at the Aqueduct Race Track Platform, LIRR is also running special trains to Ozone Park, with a (shhh) bus connection.

THE CANAL ST. SUBWAY (Construction Route #20)

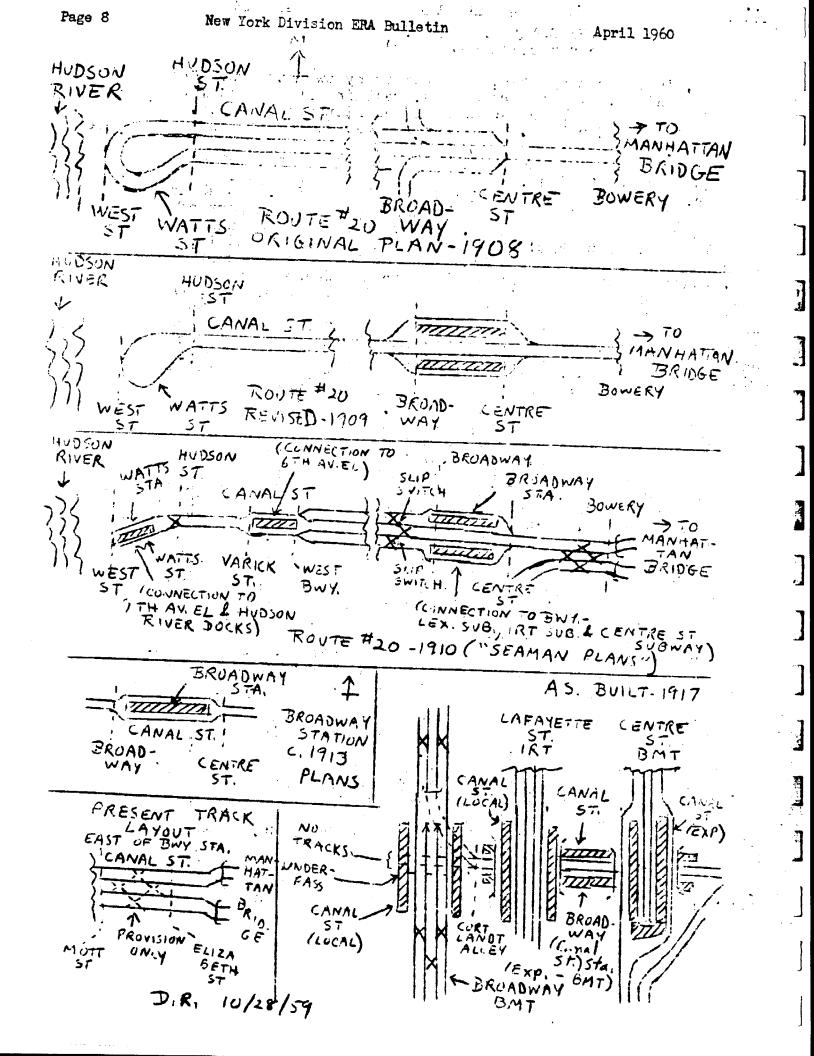
Collect Pond, in lower Manhattan, was drained by two streams. One fed into the East River. The other; a lazy, rambling stream fed into a mosquito infested quicksand and swamp known as Lispenard Meadows, at what is now the foot of Canal St. at the Hudson River, on the west side of Manhattan.

In the very early days of Manhattan, Broadway crossed the latter stream on a single plank "bridge." A more substantial bridge of stone was built later, probably by the British in the Revolution. In about 1800, it was decided to drain Lispenard Meadows by replacing part of the lazy stream with a deep ship canal. However, by the time the canal was actually dug (about 1810), Collect Pond was being filled in, and the grandiose plans came to naught. The canal was at the center of Canal St. (then Duggan St.) from Broadway to the Hudson River. A roadway and trees bordered each side of the canal. In about 1840, the canal was bricked over and became a sewer. The trees were cut down and the street widened to its present width. This is why the present day Canal St. is unusually wide for a lower Manhattan artery. The canal of Canal St. still exists under the paving blocks of the roadway.

The bridge ("Stone Bridge") disappeared when the canal was bricked over. Its remains were rediscovered when Broadway was being excavated for Construction Route #5, Sec. 2A (see below). The bridge was then 8 to 10 feet below the street surface, the street grade having been changed over the years. Stone Bridge is pictured on the station wall mosaics at the Canal St. (local) station of the present BMT Broadway Subway. The mosaic also pictures what appears to be two people kissing at the center of the span. This may be based on a frequent but mistaken assumption that Stone Bridge was one of the once famous "kissing bridges" in Manhattan, Actually the original "kissing bridge" was at Park Row and the second was at 3rd Ave. and 77th St.

The Canal St. Subway route was adopted in 1908, long before the BMT joined the IRT in the "Dual System" Contracts (1913). As originally planned, it was a Manhattan crosstown subway (Construction Route #20) running from the Manhattan Bridge on the East River to West St. near the Hudson River. It was to be 2 track from the Manhattan Bridge to Centre St. and 4 track from there to Hudson St. at Hudson St. it was to split to form a 2 track loop going south from Canal St. via West St. and northeast back to Canal St. via Watts St. There were to be two 2 track branches at Broadway, one south and one north.

This route was later revised by making the route a 2 track line (including a single track loop located as before), removing the branches, and providing a 4 track, 2 island platform station ("Broadway") running from Broadway east to Lafayette St. This 4 track station was deemed necessary to handle the expected traffic from the Broadway-Lexington Ave. Subway, 6 track, 2 island platform express station to be ouilt on Broadway at Canal St. above the "Broadway" station. Later 1910 plans (the so-called "Seaman Plans"), replaced the loop with a 2 track island platform terminal ("Watts Street") on Watts St. between West and Greenwich Sts. Also in the 1910 plans was another island-platform, 2 track station on Canal St. between Varick St. and West Broadway. The 4 track, 2 island platform station ("Broadway") was retained, but 4 tracks continued under Broadway west of the station only as far as Wooster St.



Suprisingly enough, the first section of the Canal St. Subway to be built was never used and is unlikely ever to be. Sec. 2A of Construction Route #5 (The Broadway-Lexington Ave. Subway) was on Broadway Between Walker and Howard Sts. The part of the Canal St. Subway directly underneath was included as part of the same contract. short section of the Canal St. Subway ran from approximately 30 feet west of the west building line of Broadway to about the same distance east of the east building line. It is now a two track tunnel without tracks used for storage. It is closed by wire fencing.

The Broadway-Lexington Ave. Subway was redesigned after commencement of work (on sections south of Bleeker St.) to become part of the ERT (later BMT) Broadway Subway. Before bids were let for Sec. 2A of Construction Route #5, the 6 track express station was replaced with a 4 track local station and the 4 track station of the Canal St. Subway below was changed to a simple 2 track tunnel. A 2 track, single island platform station was planned for Canal St. between the east side of Broadway and Centre St. After bids had been opened for this section, it was further decided to construct a spur from the Canal St. Subway north into the Broadway Subway. This did not prevent any future extension of the Canal St. Subway to West St. as originally planned. The cost of adding the spur to Sec. 2A of Construction Route #5 was \$165,000 and was paid by the New York Municipal Railway Corp. (part of the BRT). Sec. 2A was built by the O'Rourke Engineering Construction Co. Work began on Sept. 16, 1912 and was finished by Jan. 1916.

The city had attempted to get the Canal St. Subway built as early

as 1910, when bids were invited for the entire Canal St. Subway (in 2 sections). The bids, however, were too high. As we have just seen, the part of the Subway under Broadway was built as part of Construction Route #5 between 1912 and 1916. The part of the Canal St. Subway between the Bowery (at Manhattan Bridge) and the east side of Broadway where it met the section of Construction Route #20 being built as part of Sec. 2A of Construction Route #5, was finally built by the Underpinning and Foundation Co. Work began in Oct. 1914 and was finished by Jan. 1918, but subway train operation began on the section on Sept. 4, 1917 (see below).

The spur between the Canal St. and the Broadway Subways began on Canal St. at Cortlandt Alley, curved north (230 ft. radius) crossing the original route of the Canal St. Subway at grade, undercut private property at the northeast corner of Broadway and Canal St., and ended its curve approximately at Howard St., a level below the Broadway Subway. From this point, the spur ramped up to the level of the Broadway Subway to connect with the 2 express tracks of the Broadway Subway between Broome and Grand Sts. The section of the Broadway Subway between Broadway Subway between Broome and Grand Sts. tween Howard and Broome Sts. was part of Sec. 3, of Construction Route #5 and was also built by the Underpinning and Foundation Co. The part of the spur under private property was built to support a 20 floor building, but only the present 3 floor Oltarsh Building was ever built (including the Cinema Giglio- an Italian foreign language movie house).

A new 2 track, outside platform station running from Cortlandt Aleley east to Centre St. was built under Canal St. to replace the 2 track

island platform station planned earlier. However, the original station name ("Broadway") dating back to the 4 track station planned in 1910, was retained although incorrect. The station built never reached Broadway. The name of the station was later changed to "Broadway-Canal St." by the addition of enamelled metal signs to the original mosaic wall signs.

This station was very difficult to build. The street surface was only 10 feet above mean high water (one of the lowest surface points in Manhattan). The station, therefore, had to be built below water level which meant special construction and waterproofing. Also the station undercut 2 existing subway stations, the Canal St. station (local) of the original IRT Subway on Lafayette St. and the Canal St. station (express) of the BRT Centre St. Subway on Centre St.

Construction under Centre St. was greatly simplified by the provisions of the earlier Centre St. Subway (Construction Route #9-0 of the "Brooklyn Loop Lines"). When the latter subway was built, the concrete piles for its structure were deliberately sunk deep enough to provide clearances for the planned Canal St. Subway. The contractor merely excavated around the piles without disturbing the Centre St. Subway above. The original IRT Subway on Lafayette St., required considerable

underpinning.

Canal St. station (Tocal) of the Broadway Subway was built as a 4 track station (see above). The 2 center tracks through the station, normally used for express service, were however dead ended at bumpers at the north end of the station. The center tracks were connected to the outer tracks by crossovers south of the station. These center tracks continue further south into an unused 3 track lower level of City Hall station and are used only for layup and storage. tion and its surroundings will be covered in a forthcoming article in this series.

An escalator was to have been built from the uptown platform of the Broadway station of the Canal St. Subway, going up eastwards to a proposed mezzanine extension of the uptown local platform of the Canal St. station of the IRT Subway on Lafayotte St. The space was constructed, but the escalator was never installed. Instead, the space was converted into a stairway to the uptown local platform of the IRT station. The escalator space, however, can still be seen. Tile for the planned mezzanine extension is also visible at the top of the escalator space. Incidentally, the niches in the walls of the platform of the Broadway station of the Canal St. Subway (now the Broadway-Canal St. station) were designed to hold oak benches. They are now used for slot machines and the passengers waiting for trains must stand.

Initial operation through the Canal St. Subway (and through the Broadway Subway) was on Sept. 4, 1917. An 8 car train of new steel subway cars (now known as types "A" and "B") left the 14th St. - Union Square station at 2:00 PM bound for Coney Island Terminal via the 2 east tracks on the Manhattan Bridge and the West End Line in Brooklyn. Regular operation began in the evening of the same day with service over the bridge but via the Sea Beach Line in Brooklyn. Thereafter normal service over the Broadway Subway was every 3 minutes by alternating Sea Beach and 9th Ave. (Brooklyn) trains. At 9th Ave. station (in the 38th St. cut), connections were provided to both the Culver and West End Lines. The Montague St. Tunnels were not completed so all Broadway Subway service had to be over the bridge. The original plan had been to operate Broadway Subway expresses through the turnols via the the Montague-Willoughby St. Subway in Brooklyn. The topcision to connect the Broadway Subway expresses to the Canal St. Cubway was a wise one and has saved travelling time ever since.