Long Island Rail Road: On-Time Performance by the Numbers (2017)

Report 12-2018

OFFICE OF THE NEW YORK STATE COMPTROLLER

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Executive Summary

In 2017, the Long Island Rail Road (LIRR) had its worst on-time performance in 18 years. An estimated 9.2 million riders were inconvenienced by trains that were late, canceled at the terminal before departing, or terminated en route before reaching their destinations. These delays and cancellations had an estimated cost of nearly $75 million in lost productivity.

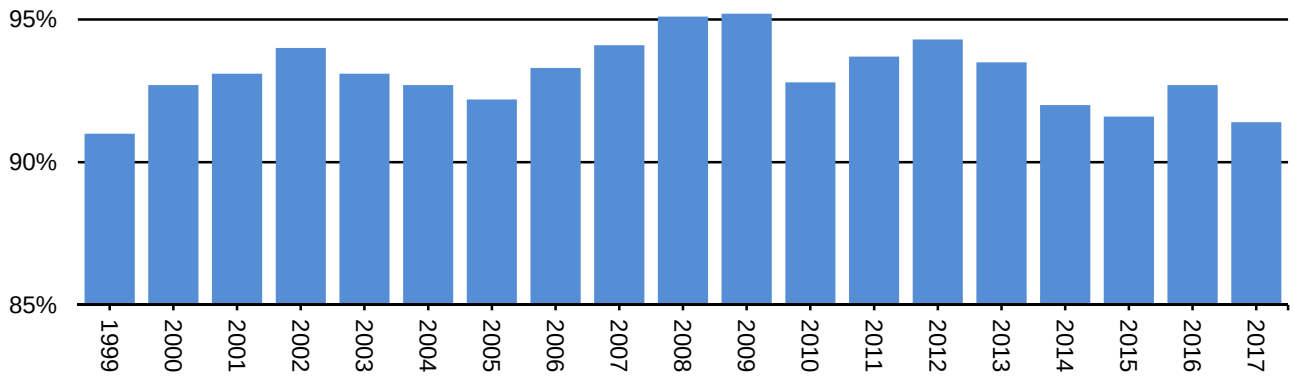
The LIRR's on-time performance peaked at 95.2 percent in 2009, but fell sharply in 2010 (see Figure 1). While performance improved over the next two years, it began to deteriorate again in 2013. On-time performance improved slightly in 2016, but fell to 91.4 percent in 2017, the lowest level since 1999 and well below the target set by the LIRR (94 percent). In total, 21,362 trains were late, canceled or terminated in 2017, nearly one-fifth more than in 2016. Performance was affected by an increase in Amtrak-related incidents (Amtrak owns and operates Pennsylvania Station), as well as an increase in incidents attributed to the LIRR.

A commuter train is considered on time by the LIRR if it arrives within 5 minutes and 59 seconds of its scheduled arrival time. Thus, a train is considered late only if it arrives at its final destination 6 minutes or more after its scheduled arrival time. By this measure, only a relatively small percentage of the 248,215 trains operated by the LIRR in 2017 were late or canceled. However, many commuters had a different experience because of their route or time of travel.

Key findings in this report include:

- 19,218 trains were late in 2017, which was 19 percent more than in 2016. Of this amount, 7,040 were more than 10 minutes late (3,442 were more than 15 minutes late).
- 1,377 trains were canceled at the terminal before departure, 9 percent more than in 2016. Another 767 trains were terminated en route, a 35 percent increase from 2016.
- Amtrak was responsible for more than half of the increase in late, canceled and terminated trains. In total, Amtrak was responsible for 3,074 late, canceled and terminated trains, an increase of 150 percent since 2016.
- The LIRR was responsible for 6,542 late, canceled and terminated trains (20 percent more than in 2016), with more than two-thirds caused by equipment problems.

FIGURE 1
Annual On-Time Performance for LIRR



Source: Long Island Rail Road

- Trains using Penn Station during the morning and evening peak travel times had an on-time average of only 83.8 percent during the first half of 2017, far lower than one year earlier (92.1 percent) and the LIRR's systemwide target (94 percent).
- The on-time performance of trains using Penn Station during peak periods improved to 90.2 percent during the last four months of 2017 after the completion of emergency repairs by Amtrak during the summer months. However, this performance was virtually the same as one year earlier during the same period (90.1 percent), and much lower than the LIRR's systemwide target (94 percent).
- Trains arriving at Penn Station between 8:30 a.m. and 9:30 a.m. during the morning peak (when 29 percent of commuters arrive in the morning) were late, canceled or terminated 17 percent of the time (up from less than 13 percent in 2016).
- Trains departing Penn Station between 5:30 p.m. and 6:30 p.m. during the evening peak (when 37 percent of commuters depart in the evening) were late, canceled or terminated 21 percent of the time (up from 15 percent in 2016).
- Trains were delayed by an average of 12.3 minutes (down from 13.2 minutes in 2016). While these results were better than in 2016, the LIRR operated 1,388 fewer trains in and out of Penn Station during peak periods in 2017.
- For the fourth year in a row, the 6:05 p.m. train from Penn Station to Wantagh was the most frequently canceled train. This train, which carries an average of 990 passengers each night, was canceled 45 times (18 percent of the time). The 6:05 p.m. train and the preceding train were canceled on the same night 29 times (11 percent of the time).
- The 5:59 p.m. train from Penn Station to Babylon had the worst on-time average of any train during the evening peak (63 percent). The 7:01 p.m. train from Penn Station to Port Washington had the second-worst on-time average (less than 65 percent of the time).
- The LIRR attributes one-quarter of all late, canceled and terminated trains to its customers. Most of these delays occurred when demand exceeded the level of service provided by the LIRR (e.g., special events, such as concerts or sporting events). Other factors include short platforms, which require passengers to walk through the train to board or exit. The LIRR, not the customer, bears responsibility for these conditions.

The LIRR notes that operations are constrained by the limited platform space at Penn Station and by the East River tunnels that connect Manhattan to Long Island, which were damaged by Superstorm Sandy. Amtrak, which is responsible for the station and the tunnels, must ensure that they are properly maintained. In addition, the federal government should keep its commitment to help fund the Gateway project, which would construct a new rail tunnel under the Hudson River and expand Penn Station.

The number of late, canceled and terminated LIRR trains attributed to Amtrak in 2017 was much higher than the year before, but the LIRR itself was responsible for more than twice as many delays as Amtrak. Moreover, most of the delays attributed to the LIRR were avoidable since they were caused by equipment problems. New York State and the MTA must ensure that the LIRR has the resources to properly maintain and modernize its assets, and the LIRR must manage its resources effectively to improve on-time performance.

Why Trains Are Late or Canceled

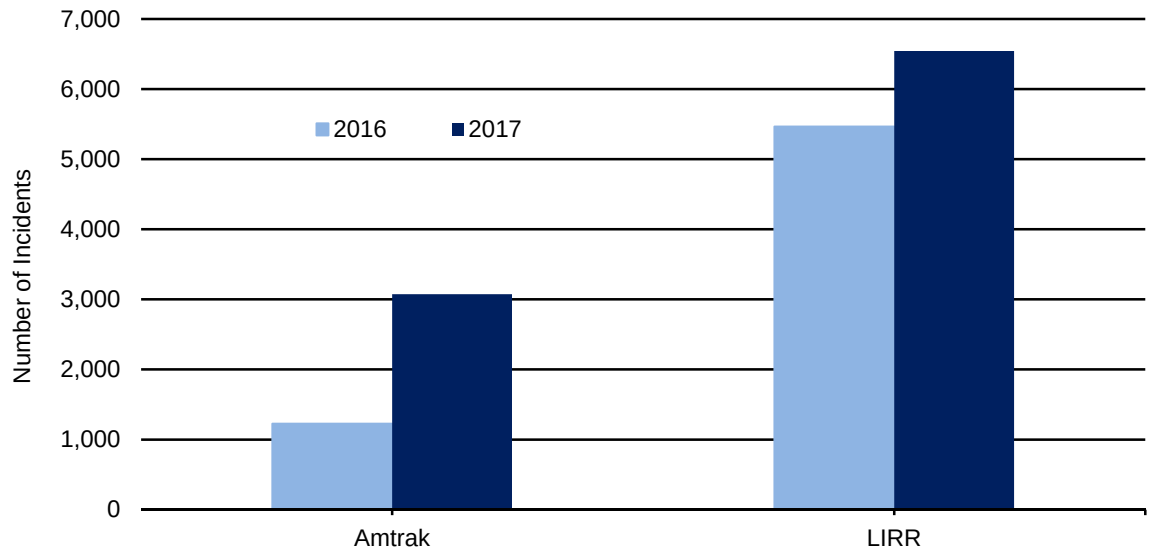
Trains may be late, canceled or terminated for a number of reasons, including inclement weather, slow passenger boarding, the presence of an unauthorized person on the tracks, equipment failure, track work, police investigations, and issues arising from Amtrak, which owns Pennsylvania Station and the underwater rail tunnels that connect Manhattan to Long Island.

In 2017, there were a total of 21,362 late, canceled and terminated trains, which was 3,411 (19 percent) more than in 2016. Amtrak was responsible for 14 percent of all incidents, but it accounted for 54 percent of the increase. The number of incidents attributed to Amtrak more than doubled, rising from 1,227 to 3,074 (see Figure 2).

The LIRR was responsible for nearly one-third of all late, canceled and terminated trains in 2017, and for one-third of the increase since 2016. The LIRR was responsible for 6,542 incidents, 20 percent more than in 2016 (an increase of 1,077 incidents). More than two-thirds of the incidents (4,606) were caused by unscheduled track and signal repairs or mechanical problems with the trains, 25 percent more than in 2016. The number of incidents caused by human error and other unplanned factors (831), such as crew error, manpower shortages and scheduling problems, increased by 71 percent. Another 1,105 incidents were caused by scheduled maintenance and capital work, 15 percent fewer than in 2016.

FIGURE 2

Delay Incidents Related to Amtrak and the LIRR, 2016 and 2017



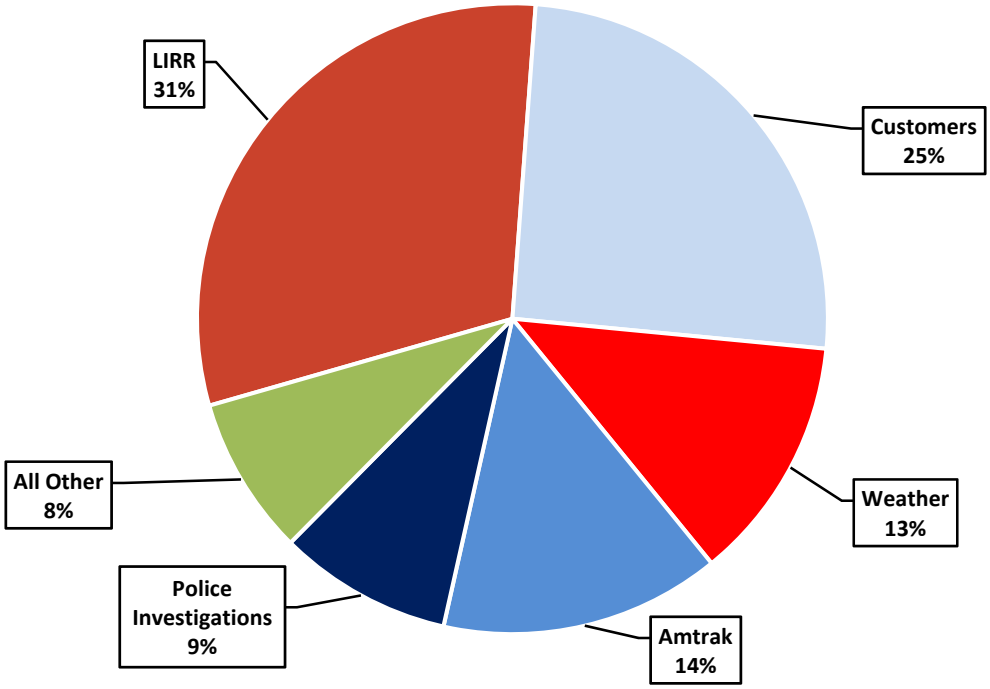
Source: Long Island Rail Road

As shown in Figure 3, the LIRR attributed one-quarter of all late, canceled and terminated trains in 2017 to its customers. Only 17 percent of these incidents were caused by sick passengers. According to the LIRR, nearly all of these incidents (82 percent) were caused by passengers boarding or exiting trains.

Most of the delays from boarding and exiting the trains occurred when demand exceeded the level of service provided by the LIRR, mostly for special events and holiday getaways. Other contributing factors include short platforms (requiring passengers to walk through the train to exit) and trains that are late to the terminal ((leaving too little time to board). The LIRR, not the customer, bears responsibility for these conditions.

Weather, the least avoidable cause of late, canceled and terminated trains was responsible for only 13 percent of the incidents in 2017, and police investigations were responsible for 9 percent.

FIGURE 3
Why LIRR Trains Are Late, Canceled or Terminated



Sources: Long Island Rail Road; OSC analysis

Most Frequently Canceled Trains

In 2017, the number of canceled trains totaled 1,377, which was 8 percent more than in 2016 and the highest number since at least 2008.[1] Another 767 trains were terminated en route. (Nearly three-quarters of all train terminations occurred during weekends and other off-peak periods.) Figure 4 shows the most frequently canceled trains in 2017. All departed Penn Station during the evening peak. Ten of the 11 trains were on the Babylon and Port Washington branches. In most cases, the trains were canceled by the LIRR to alleviate backlogs caused by service disruptions.

Two-thirds of all train cancellations occurred during the first half of the year, when Penn Station was plagued by problems related to Amtrak-owned tracks, signals and switches, as well as derailments that limited the number of tracks available in the station. Train cancellations totaled 362 during the last four months of 2017 after the completion of emergency repairs in Penn Station, which was slightly higher than during the same period the year before (344).

The 6:05 p.m. train from Penn Station to Wantagh has been the most frequently canceled train for the past four years. This train was canceled 45 times last year (31 times more often than the average of all other trains), an increase of 66 percent from 2016. On average, it was canceled 17.7 percent of the time, up from 10.6 percent in 2016. The 5:40 p.m. train from Penn Station to Seaford, which precedes the 6:05 train on the Babylon branch, was canceled 16.5 percent of the time. Both trains were canceled on the same night 29 times during 2017 (11 percent of the time).

FIGURE 4

Most Frequently Canceled LIRR Trains in 2017

Origin	Destination	Scheduled Departure Time	Canceled Trains	Percentage of Trains Canceled	Estimated Ridership
Penn Station	Wantagh	6:05 p.m.	45	17.7%	990
Penn Station	Great Neck	5:50 p.m.	44	17.3%	800
Penn Station	Seaford	5:40 p.m.	42	16.5%	980
Penn Station	Huntington	6:30 p.m.	31	12.2%	1,010
Penn Station	Wantagh	5:19 p.m.	31	12.2%	970
Penn Station	Babylon	6:33 p.m.	27	10.6%	910
Penn Station	Port Washington	6:11 p.m.	24	9.4%	1,100
Penn Station	Port Washington	5:26 p.m.	24	9.4%	760
Penn Station	Wantagh	4:57 p.m.	22	8.7%	570
Penn Station	Port Washington	7:01 p.m.	19	7.5%	1,080
Penn Station	Port Washington	5:11 p.m.	19	7.5%	720

Note: Ridership estimates are based on 2016 data.
Sources: Long Island Rail Road; OSC analysis

[1] The LIRR could not provide the number of train cancellations prior to 2008.

Longest Train Delays

While extreme delays are uncommon, they do occur. A total of 195 trains were late by more than one hour (16 percent less than in 2016), including 14 trains that were late by more than two hours. Figure 5 shows the 11 longest delays in 2017 (a few examples are discussed in more detail below). Six occurred in the last three months of 2017, and five occurred on weekend days. All had relatively low ridership.

- On Sunday, November 19, 2017, signal problems caused the 7:04 a.m. train from Montauk to Jamaica to be delayed by more than two hours and 45 minutes.
- On Saturday, November 25, 2017, the 12:10 p.m. train from Jamaica to Montauk struck an unauthorized person on the tracks, which resulted in a delay of more than two and a half hours.
- On Tuesday, January 3, 2017, the 10:56 p.m. train from Huntington to Penn Station struck a car, which resulted in a delay of more than two and a half hours.
- On Thursday, March 28, 2017, the 7:27 p.m. train from Babylon to Speonk was delayed because of an unauthorized person on the tracks, which resulted in a delay of more than two and a half hours.
- On Monday, February 13, 2017, heavy winds caused a power outage, which delayed the 3:15 p.m. train from Ronkonkoma to Penn Station by two and a half hours.

FIGURE 5

Longest LIRR Delays in 2017

Date	Origin	Destination	Scheduled Departure Time	Scheduled Arrival Time	Length of Delay (mins)
11/19	Montauk	Jamaica	7:04 a.m.	9:56 a.m.	166
11/25	Jamaica	Montauk	12:10 p.m.	3:01 p.m.	158
1/3	Huntington	Penn Station	10:56 p.m.	12:01 a.m.	156
3/28	Babylon	Speonk	7:27 p.m.	8:27 p.m.	155
2/13	Ronkonkoma	Penn Station	3:15 p.m.	4:37 p.m.	149
4/9	Port Washington	Penn Station	4:10 a.m.	4:55 a.m.	145
10/29	Jamaica	Montauk	9:41 p.m.	12:20 a.m.	140
6/29	Jamaica	Montauk	1:10 a.m.	3:57 a.m.	134
11/7	Port Jefferson	Jamaica	4:06 p.m.	5:39 p.m.	130
11/23	Speonk	Babylon	2:05 p.m.	3:05 p.m.	128
12/16	Ronkonkoma	Penn Station	2:40 p.m.	3:59 p.m.	128

Sources: Long Island Rail Road; OSC analysis

Trains with the Worst On-Time Performance

Figure 6 shows the 10 trains with the worst on-time performance during the morning peak in 2017. While on-time performance systemwide during the morning peak was 91.1 percent in 2017, the on-time performance for these trains ranged from 70.9 percent to 79.1 percent.

- The 7:32 a.m. train from Ronkonkoma to Penn Station was late, canceled or terminated 29 percent of the time, more than three times as often as the systemwide average. This train, which carries an estimated 1,160 passengers each day, had the worst on-time performance during the morning peak in 2014 and 2015, and the third-worst in 2016.
- The 7:58 a.m. train from Bethpage to Penn Station had the second-worst on-time performance and was late or canceled 28 percent of the time.
- The 8:04 a.m. train from Huntington to Penn Station was late or canceled one-quarter of the time. It had the third-worst performance in 2017 and the fourth-worst in both 2015 and 2016. Moreover, it was the most crowded train in 2016, operating at nearly 104 percent of seating capacity.

FIGURE 6

Worst On-Time Performance for LIRR During the Morning Peak in 2017

Origin	Destination	Scheduled Departure Time	On-Time Performance	Estimated Ridership
Ronkonkoma	Penn Station	7:32 a.m.	70.9%	1,160
Bethpage	Penn Station	7:58 a.m.	72.4%	1,070
Huntington	Penn Station	8:04 a.m.	74.8%	1,100
Montauk	Long Island City	5:39 a.m.	76.4%	630
Port Washington	Penn Station	8:08 a.m.	76.4%	1,120
Babylon	Penn Station	7:45 a.m.	76.4%	860
Port Washington	Penn Station	8:18 a.m.	76.4%	630
Great Neck	Penn Station	8:24 a.m.	77.2%	870
Port Jefferson	Hunterspoint Ave.	6:57 a.m.	77.6%	690
Valley Stream	Penn Station	8:03 a.m.	79.1%	890

Note: Ridership estimates are based on 2016 data.
Sources: Long Island Rail Road; OSC analysis

Figure 7 shows the 10 trains with the worst on-time percentage during the evening peak in 2017. While the on-time performance systemwide during the evening peak was 86.2 percent in 2017, the on-time performances for these trains ranged from 63 percent to 73.6 percent. Nine of the 10 trains with the worst on-time performance in the evening peak period departed from Penn Station.

- Of the 10 trains with the worst on-time performance in 2017, six operated on the Port Washington branch or the Babylon branch.
- The Babylon train departing Penn Station at 5:59 p.m. was late or canceled at the terminal 37 percent of the time, or nearly four times more often than the systemwide average.
- The Oyster Bay train, scheduled to depart Penn Station at 6:16 p.m., was late, canceled or terminated more than one-third of the time. Moreover, this is the only train from Penn Station that serves Oyster Bay during the evening peak. This train had the worst on-time performance during the evening peak in both 2014 and 2015, and the third-worst in 2016 and 2017.

FIGURE 7

Worst On-Time Performance for LIRR During the Evening Peak in 2017

Origin	Destination	Scheduled Departure Time	On-Time Performance	Estimated Ridership
Penn Station	Babylon	5:59 p.m.	63.0%	990
Penn Station	Port Washington	7:01 p.m.	64.6%	1,080
Penn Station	Oyster Bay	6:16 p.m.	65.0%	630
Penn Station	Babylon	5:36 p.m.	66.5%	1,040
Penn Station	Seaford	5:40 p.m.	68.5%	980
Penn Station	Port Washington	6:24 p.m.	70.9%	1,010
Penn Station	Port Washington	6:11 p.m.	71.7%	1,100
Penn Station	Huntington	6:08 p.m.	72.0%	1,200
Long Island City	Patchogue	4:27 p.m.	73.2%	370
Penn Station	Huntington	4:31 p.m.	73.6%	820

Note: Ridership estimates are based on 2016 data.
Sources: Long Island Rail Road; OSC analysis

Pennsylvania Station

Most LIRR commuters (87 percent) travel to or from Penn Station in Manhattan's central business district. Last year, 13,237 Penn Station trains were late (including 2,057 that were more than 15 minutes late), 21 percent more than in 2016. Another 1,098 trains were canceled at the terminal (13 percent more than in 2016), and 563 were terminated en route (31 percent more than in 2016).

Trains using Penn Station were 45 percent more likely to be late, canceled or terminated during the morning and evening peaks than at off-peak times. Peak trains using Penn Station were 71 percent more likely to be late, canceled or terminated than trains using Atlantic Avenue, the second-busiest western terminal in New York City.

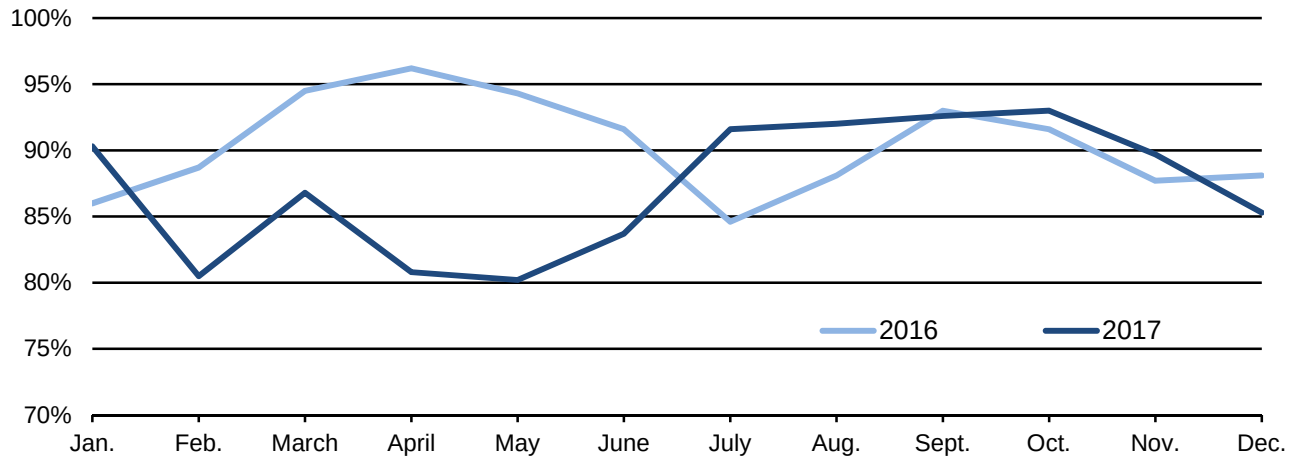
Overall, the on-time average for trains traveling to or from Penn Station during peak periods was 87.1 percent in 2017, compared with 90.5 percent in 2016. On-time performance averaged 89.7 percent during the morning peak and 84.2 percent during the evening peak.

Figure 8 shows the on-time performance of Penn Station trains during peak periods in each month of 2016 and 2017. In the first half of 2017, these trains had an on-time average of 83.8 percent (compared with 92.1 percent during the same period in 2016), reaching a low point in April and May (when on-time performance during the evening peak averaged 73.5 percent). Much of the deterioration in service during the first half of 2017 was attributed to problems related to Amtrak-owned tracks, signals and switches, as well as derailments that limited the number of tracks available in the station.

In July and August 2017, the LIRR operated on a reduced schedule while Amtrak conducted emergency repairs in Penn Station. With fewer trains to operate, on-time performance improved in July and August, averaging 91.8 percent.[2] After the completion of emergency repairs, trains operating during peak periods to and from Penn Station had an on-time average of 90.2 percent during the last four months of 2017, virtually the same level as one year earlier (90.1 percent).

FIGURE 8

On-Time Performance of Penn Station LIRR Trains During Peak Periods



Sources: Long Island Rail Road; OSC analysis

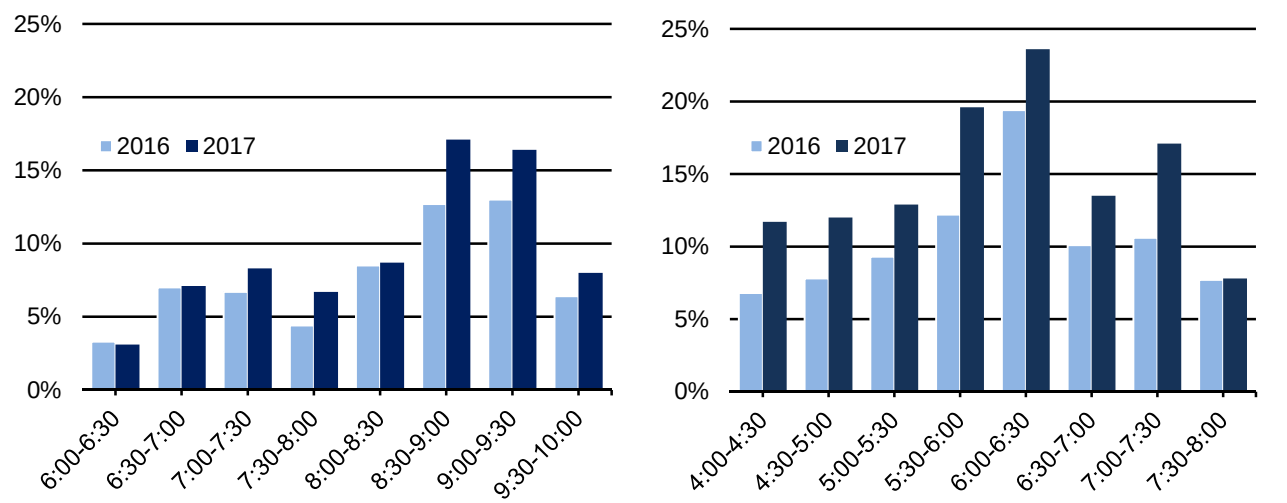
[2] OSC estimates that 1,247 fewer trains served Penn Station during peak periods in July and August 2017.

Figure 9 shows the percentage of Penn Station trains that were late, canceled or terminated by half-hour increments during periods of peak demand in 2017. According to 2016 LIRR ridership records, 29 percent of all passengers traveling to Penn Station during the morning peak period arrive between 8:30 a.m. and 9:30 a.m. In 2017, 16.9 percent of these trains were late, canceled or terminated, twice as often as trains serving Penn Station at other times during the morning peak (up from 12.8 percent in 2016).

LIRR ridership records also show that 37 percent of the passengers who depart Penn Station during the evening peak leave between 5:30 p.m. and 6:30 p.m. In 2017, more than one-fifth of these trains were late, canceled or terminated, nearly twice as many as at other times during the evening peak (up from 15 percent in 2016).

FIGURE 9

Percentage of Penn Station Trains Delayed, Canceled or Terminated in 2017



Sources: Long Island Rail Road; OSC analysis

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