

Addressing the Gap

LIRR President's Testimony

Raymond P. Kenny
Acting President - MTA Long Island Rail Road
February 8, 2007

Good Morning and thank you for giving me this opportunity to speak about the gap between platforms and trains and how the MTA Long Island Rail Road is addressing this matter.

I want to preface my remarks by letting you know that I am a native Long Islander. I started with the Railroad in 1970 as a Summer Ticket Clerk. I ride the trains regularly, and I like to think of myself as someone who focuses on what we can do, not on what we can't.

In my presentation, I'll describe actions we have taken, and outline proposals for additional measures that will either reduce the gap, or limit customer exposure to large gaps. I'll give you a comprehensive review that includes information about our history, our infrastructure, work accomplished to date, future plans and specifically, concerns about the Syosset Station.

Complex Operating Environment



The Long Island Rail Road exists in a complex operating environment. We serve more than 81 million customers annually at 124 stations including 3 New York City terminals and a major transfer point at Jamaica ... 7 days a week, 24 hours a day.

Complex Operating Environment



It was in 1834 --- 173 years ago -- that the Long Island Rail Road was chartered. Long Island has changed dramatically since then, and so has the Railroad. Over the years, Long Island's towns and villages grew up around our tracks. We left the age of steam and low level platforms for electric trains and high-level platforms that made it safer and easier for customers to board, but created a gap between our trains and platforms.

Complex Operating Environment



In the early part of our history, the Long Island Rail Road expanded by acquiring other competing railroads. Today, we have 11 branches, with station locations and routes that were chosen, developed or acquired long ago.

Complex Operating Environment



St. James



Jamaica

Because our system was built or acquired over time, the Railroad does not have a uniform infrastructure. And while we still have some historic reminders of our past, other stations and parts of our system have seen significant changes. This contributes to the complexity of our system.

Complex Operating Environment



LIRR and Amtrak



NJ Transit



Freight Operations

The Long Island Rail Road shares Penn Station and large segments of track with other carriers. Each day, we must choreograph our train movements, balancing the needs of our daily commuters with leisure and long distance travelers, other railroads (like Amtrak and New Jersey Transit) and a rail freight operation.

Complex Operating Environment



Bi Level

M3



M7

Not only do we coexist with the sometimes competing needs of other service providers, we do so with a fleet that includes a variety of train cars with different characteristics and dimensions; new electric trains, older electric cars and a diesel fleet.

Complex Operating Environment



The speed of our service also adds to the complexity of the operation. Local trains slow down and stop at every station to pick up customers, while our popular express trains pass through at higher authorized speeds of up to 80 miles an hour. It's important to note that trains – at almost any speed -- tend to “rock” with lateral (side to side) motion which requires more space between the platform and the train.

What is “the Gap”?

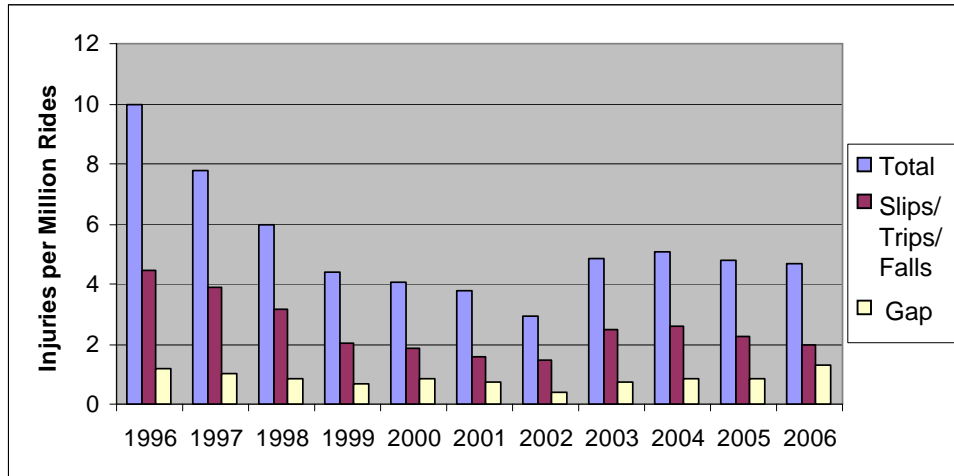
- Necessary space between the train and the platform required to operate safely at authorized speeds.



With all the variations and complexities of our system, we know these simple facts: A gap of some size is necessary to allow the safe passage of trains. If the gap between the train and platform is too narrow, the train could strike the platform. And if the gap is wide, our customers will encounter difficulty as they board or exit the train.

LIRR Customer Accident History

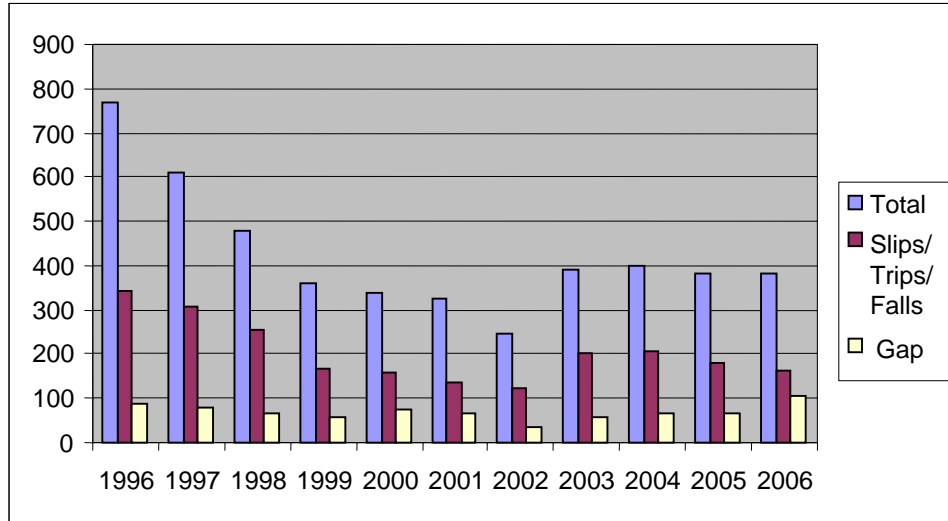
Accidents Per Million Rides



Over the last 10 years, we have averaged less than 1 gap accident per million rides. While some gap accidents have resulted in a customer falling through the gap to track level, such accidents are the exception, rather than the rule.

LIRR Customer Accident History

Accidents by Type



Customer safety is the top priority of the Long Island Rail Road, and I am pleased to report that our total number of customer accidents (which you see here in blue) has been reduced by about 50 percent over the last decade – from almost 800 in 1996 to 384 in 2006. But we still have work to do to -- since it's our goal to have no customer accidents at all -- even one is too many. By far, the largest number of customer injuries are caused by slips, trips and falls – shown on the bar chart in purple. Gap-related accidents, shown in yellow, are the second highest cause of customer accidents.

Gap Calculator

Gap-Related Standards on Straight Track

- 5' 8" space from track centerline to platform edge
- Passenger cars = 10' wide at threshold
- 10' divided by 2 = 5'
- 5' 8" minus 5' = 8" gap

All Railroads must also prevent accidents caused by trains striking the platform. To do this, we strive to maintain a 5 foot 8 inch space from the centerline of track to the platform edge, which generally results in a gap of about 8 inches.

Here's how this is calculated:

- The standard Long Island Rail Road car width, measured at the door threshold, is 10 feet.
- Divide the width of the train car in half (10 divided by 2 = 5 feet, which is the distance from the center of the car to the door threshold)
- Subtract 5 feet from the 5-foot, 8-inch space between the track centerline and the platform edge to derive the size of the gap.

Elements Determining Gap Size

Curved Track



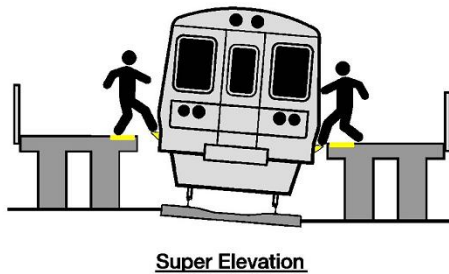
Generally, gaps at curved platforms are wider than 8 inches. A larger space is needed to safely accommodate rectangular rail cars as they swing around a bend. As a rule, every degree of track curvature adds one inch to the gap required for safe passage of trains.

Elements of Gap: Syosset



Syosset is a prime example of how a curve affects the gap. Long Island Rail Road tracks reached Syosset prior to the Civil War. For reasons that are buried in history, the tracks through Syosset were built on a curve. Since the 1800's, a whole community with shops, restaurants and services that commuters depend on -- has grown up around Syosset Station.

Elements of Gap: Super-Elevation



In some curved areas, including Syosset, the tracks are banked, with one rail slightly higher than the other. This “super-elevation” is necessary to maintain stability when achieving desired operating speeds. But for every inch of super-elevation, an additional inch of gap space is needed to prevent platform strikes.

Both passenger and freight trains operate over Syosset’s electrified tracks. The station has two side platforms with 24 door locations, and as a result of the curve and super-elevation, most of the gaps are 10 inches or more.

We have some specific ideas on how to address the Syosset gaps – and I’ll outline these solutions later in my presentation.

Customer Experience/Gap Size

Variables:

- Rail wear
- Wheel wear
- Car suspension system
- Passenger load

There are other variables that affect the size of the gap a customer may encounter on any given day. These variables, or tolerances, include the effects of wear on running rails, and on train car wheels. The state of a car's suspension system, and whether or not the train is crowded, can also have an impact.

LIRR Objective

- Provide customers with a safer environment while continuing to maximize capacity and reliability

As we work to provide customers with a safer environment, we want to maintain current service levels. As the busiest commuter railroad in the nation, we operate 728 trains daily on eleven branches. Our AM and PM peak service is designed to serve our core commuter market with as much efficiency and reliability as possible – to get customers to work and back home again safely and on-time. To provide the service customers expect, our peak trains operate with headways as frequent as every two minutes. In finding solutions to gap concerns, it's important that we do not adversely impact reliability.

Gap Mitigation Goals

- Gaps should be minimized, allowing for
 - Safe passage of trains
 - Reduced risk of customer injuries

Nevertheless, it is our goal to reduce gaps wherever possible to allow for the safe passage of trains, and reduce the risk of customer injuries.

Gap Mitigation Goals

- Near-term: Identify and remediate largest gaps
- Longer term: Reduce the gap to smallest possible system-wide.
- Strive to achieve current FRA recommendation on maximum gap sizes
 - On tangent: 7” to 10”
 - On curves: 10” to 13”

Our more immediate efforts will be focused on those gaps which are larger and present a more serious risk.

Over the longer term we will attempt to reduce gaps to the smallest possible system wide, which may include evaluating and eliminating system constraints. To do so we will:

- Evaluate operations at Penn Station and other pinch points,
- Open discussions with Amtrak regarding the requirement that trains using Penn Station be no more than 10 feet wide; and
- Strive to mirror the current FRA recommendations for gap size, though it will not be possible to achieve this at all locations

Ways to Mitigate Gap

Near Term

- Physical Solutions
- Operational Solutions
- Public Awareness

Longer Term

- Re-evaluation of gap standards
- Engineering Solutions
- On-going program to measure gaps and remediate if necessary

Because of the varied nature of our stations and infrastructure, there is no one single gap solution that will work universally. Using a multi-faceted approach, we have begun implementing various near-term ways to address the gap, including:

- Physical Solutions to the existing infrastructure
- Operational Solutions to our service delivery
- And by alerting our customers in a more aggressive manner to the caution they must exercise

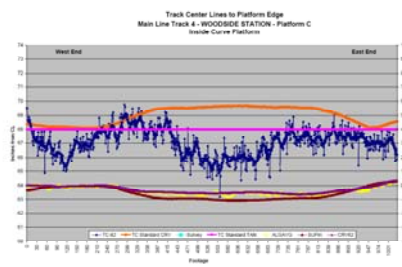
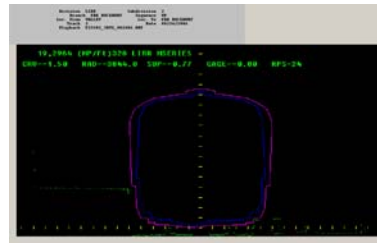
Longer term plans include:

- A re-evaluation of gap related standards.
 - We will review the impact of reducing the 5 foot, 8 inch centerline standard to 5 foot, 7 inches
 - And we will review the impact of increasing car width at door thresholds.
- Engineering Solutions – such as gap fillers - will be examined
- And we will initiate a program to measure gaps annually and make physical improvements as needed

Please allow me to outline these efforts....

Platform Edge Measurements

- 262 Platform Edges measured at 124 stations



Prior to making improvements, the first step is taking measurements. The Railroad has 262 platform edges including 161 that are fully tangent (straight) and 101 that are curved or partly curved. Using a Track Geometry Car between August and November 2006, we took electronic measurements at two-foot intervals at all 262 platform edges, from the centerline of track to the platform edge.

Physical Solutions

Track Surfacing



Track surfacing is performed by all railroads to ensure track stability and rail alignment. It is not considered a conventional gap solution in the railroad industry. However, we have taken a fresh look at this track maintenance task and its application with regard to tracks adjacent to platforms. Since August, we have used manpower and machinery to shift over 71 thousand feet of track for 24 platforms at 16 stations, reducing the gap where it has been feasible to do so by using this solution.

Physical Solutions

Realign Platform Slabs



In some cases, we found that a reduction in the gap could be achieved by shifting the platform slightly closer to the rails. As a result, we have realigned over 7 thousand linear feet of platform slabs on 16 platforms at 11 stations.

Physical Solutions

Edgeboard



At stations where the two previous solutions could not accomplish our goal, we are affixing wooden edgeboards to help reduce the gap. So far, over 53 hundred feet of edgeboard has been installed on 9 platforms at 7 stations.

Operating Solutions

Zoning Off Cars



In addition to physical solutions, we are also investigating Operating Solutions. The first one I will describe involves zoning off cars. When you zone off cars it means that the car doors are kept closed at certain locations to prevent customers from encountering wider gaps. Prior to August 2006, we did this at Penn Station Track 17 and on several tracks at Flatbush Avenue. We recently expanded this at Flatbush and at other stations.

This solution limits customer encounters with wider gaps, but it can increase crowding as customers gather in cars where doors will open; and can add inconvenience where customers walk through cars to access open doors. It can also increase train dwell time in the station.

Operating Solutions

Relocation of Car Markers



We have identified station platforms where one end has a wider gap, usually due to a curve. We are planning to change train stopping patterns at some of these stations by relocating car markers used by engineers as a stopping guide. In most cases, relocating the car markers will require customers to walk farther when entering or exiting their train. We are implementing this solution at the Lawrence Station.

Operating Solutions

Platform Conductors



In a pilot program, started in November 2006, we expanded the use of Platform Conductors during rush hours to monitor train boarding. Platform conductors, like this one in Syosset, are equipped with hand-held radios to communicate with train crews and they can observe and assist passengers, whenever feasible. When station gaps are remediated, Platform Conductors can be redeployed.

Public Awareness Elements




Another solution was introduced recently at Flatbush Avenue in a special public awareness effort. We are adding red warning zones to call attention to the edge of platforms where there is a wider gap. We will expand this to most other stations with wider gaps.

Public Awareness Elements



Other public awareness efforts have been stepped up since August. Although we've had gap warning signs on our trains and at stations since the early 1990's ... a newly designed icon delivers the message with a fresh, dramatic visual that we hope will get customers attention. Currently in production, new "Watch the Gap" warning decals will be installed on our trains starting in March. Station signs featuring the new design will start going up in the spring.

Public Awareness Elements




Watch the Gap

Your safety is our highest priority. We're taking this opportunity to remind you that all Long Island Rail Road stations have gaps between the train and the platform. The safe passage of our passengers is our top priority. We've taken steps to further raise awareness such as expanding on-board announcements as well as posting pictograph signs on trains to remind passengers of the steps that you can take to ensure a safe one:

- Board your train safely
- Stand on the yellow safety line, away from the train
- Watch the gap when boarding or exiting the train before you step onto the train
- Stand straight on and always look forward when entering or exiting a train
- When you enter the train to allow for a safe entry, please be sure to hold onto a handrail or a train crewmember if you need assistance navigating the gap

Long Island Rail Road




Watch the Gap

ON BOARD YOUR TRAIN

- Never touch the train doors when they are opening or closing.
- Never lean on the doors.
- Never try to keep the doors from closing by sticking an arm, leg, briefcase or other object in the way.
- When standing in the vestibule, never place bags near the door or anywhere that may pose a tripping hazard.

MOBILITY IMPAIRED CUSTOMERS

- Mobility impaired customers may enlist the help of a train crewmember when boarding or exiting trains. A sturdy, steel bridge plate can be placed across the gap for easy movement on and off trains.
- Mention your destination to train crewmembers so that they can provide you with assistance when exiting the train.



Watch the Gap

- Look for these signs throughout our system.
- Please watch your step when entering and exiting the trains, and pay special attention to the gap between the train door and the station platform.
- When traveling with young children, be sure to hold their hands while entering or exiting the train.
- Always keep a safe distance from the edge of the platform.

Cuidado con el espacio vacío

- Busque estas señales en todo nuestro sistema.
- Cuando ingrese o salga de los trenes mire donde pisa, y preste especial atención al espacio que queda entre la plataforma de la estación y la puerta del tren.
- Cuando viaje con niños pequeños, asegúrese de tomarlos de la mano cuando entre o salga del tren.
- Siempre mantenga una distancia segura del borde de la plataforma.

Long Island Rail Road
Going your way—the safe way.

A new gap brochure with safety suggestions and tips was produced and distributed to customers on trains and at stations, and a flyer with gap safety tips in Spanish and English is also being distributed.

Public Awareness Elements



A “Watch the Gap” information poster has been placed on trains and in all stations and terminals.

Public Awareness Elements



“Watch the Gap” reminders are being stenciled on our platforms. So far, they are at 27 stations. Additionally, “Watch the Gap” signs are being attached to platform edges, so waiting customers can read a reminder as they gaze over to the other side of the tracks.

Public Awareness Elements



**AVPS SIGN W/ GAP MESSAGE
AT 41 STATIONS**



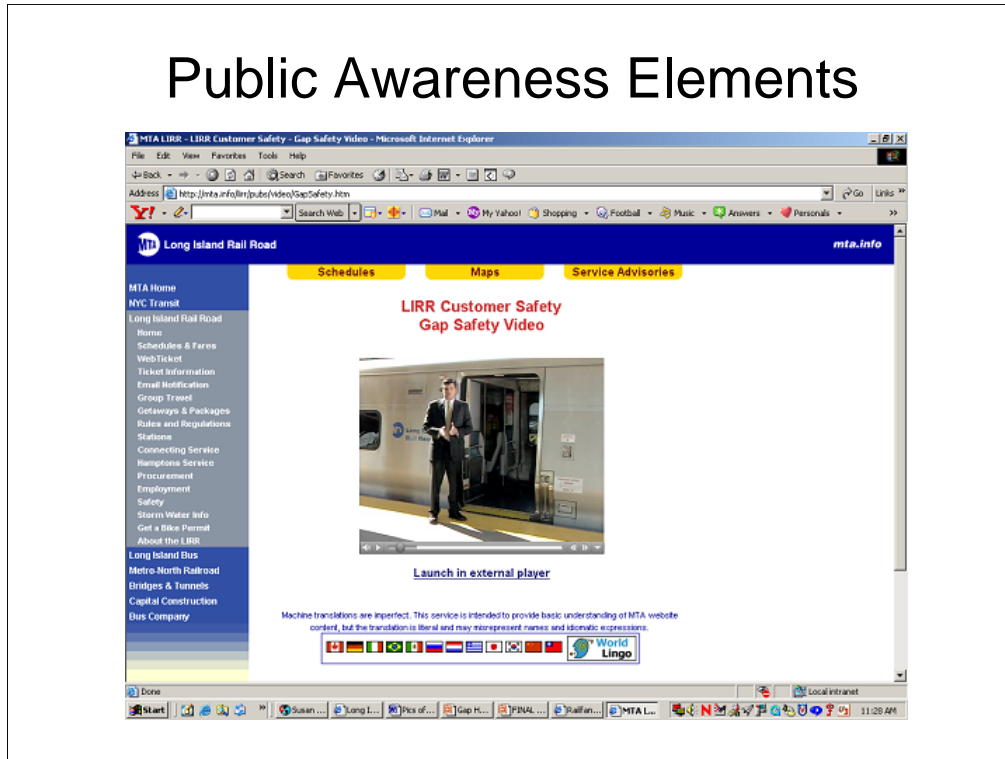
**CONDUCTOR
ANNOUNCEMENTS**



**M-7 ON-BOARD SIGN
W/ GAP MESSAGE**

“Watch the Gap” reminders have been added to announcements and electronic signs throughout our system – at stations and on trains.

Public Awareness Elements



And a very informative Gap Safety video has been developed for our customers and is easily accessible on our website.

Near Term Mitigation Priority

Goal: Address largest gaps on curves

- Identify curved platforms with gaps at door locations greater than 10"
 - 32 platform edges identified
- Develop site-specific mitigation plans to minimize these gaps
 - 18 developed to date
 - 14 remaining, to be completed by February 28, 2007
- Implement mitigations as developed

After the analysis of each platform with gaps greater than 10 inches, we are developing multifaceted site-specific plans that include a combination of physical solutions, operational measures and public awareness campaigns. So far, 18 of these locations have been addressed. The remaining 14 such sites will have mitigation plans completed by the end of this month.

Flatbush Avenue



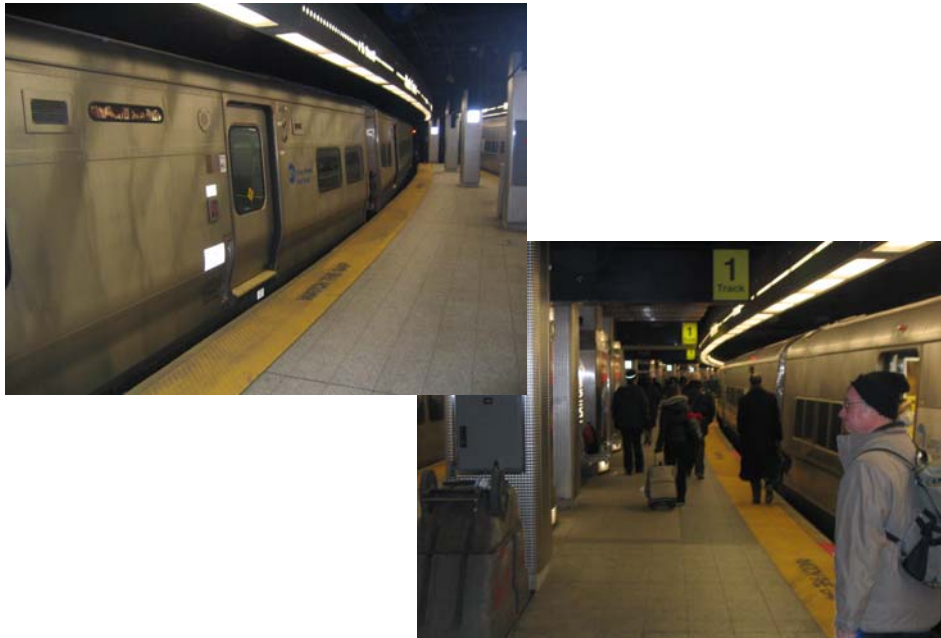
The Flatbush Avenue Terminal in Brooklyn is an example of how a multi faceted approach can be applied to minimize gaps that are greater than 10 inches.

Flatbush Avenue



Edgeboards were added on the platform facing Tracks 1 and 2 to reduce the gap.

Flatbush Avenue



As of January 26, we are opening fewer cars at Flatbush Avenue.
On Track 2, only the doors in the eight western-most cars open.

On Tracks 3 & 4, only the doors in the four western-most cars open. A crew member is positioned at the west door of the fifth car to assist customers.

90 trains are affected each weekday; 17 AM peak, 15 PM peak.

Initially there were 48 door locations at Flatbush with gaps greater than 10 inches.
The measures described have reduced that number from 48 to 6.

Flatbush Avenue



In January, Special Platform Conductors were redeployed to Flatbush Avenue – two special platform conductors were assigned to Platform A, track 1, the first starting at 6 AM; and the second starting at 2 PM.

Syosset: Current Efforts



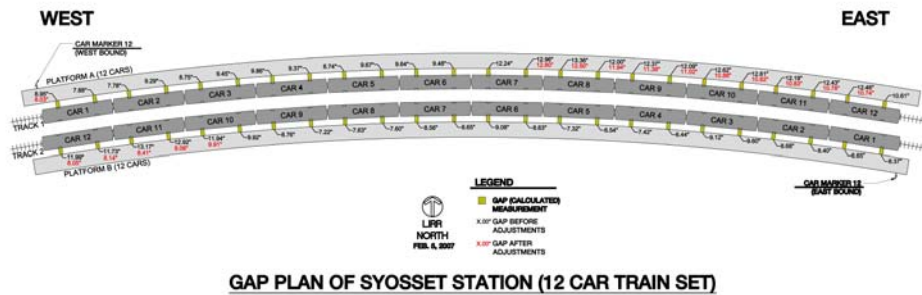
At Syosset, a multi-faceted approach is also being used:

- Morning and evening platform conductors are available
- Platform gap lighting – to draw customer attention to wider gaps – is in place at door locations
- Gap announcements are made regularly at the platform and onboard trains
- Crews are instructed to assist customers whenever possible
- At your request, Senator Marcellino, and thanks to your assistance, we will be installing cameras at Syosset by the end of this month. Engineering crews have been performing preparatory work prior to delivery of the cameras and monitors - including running conduit for electrical and camera wiring, and installing posts for cameras and monitors to be mounted on. When complete, these cameras will allow crewmembers to better inspect the platform, and offer aid if they see a customer in trouble.

But we think we can do more at Syosset...

Syosset – Track 2

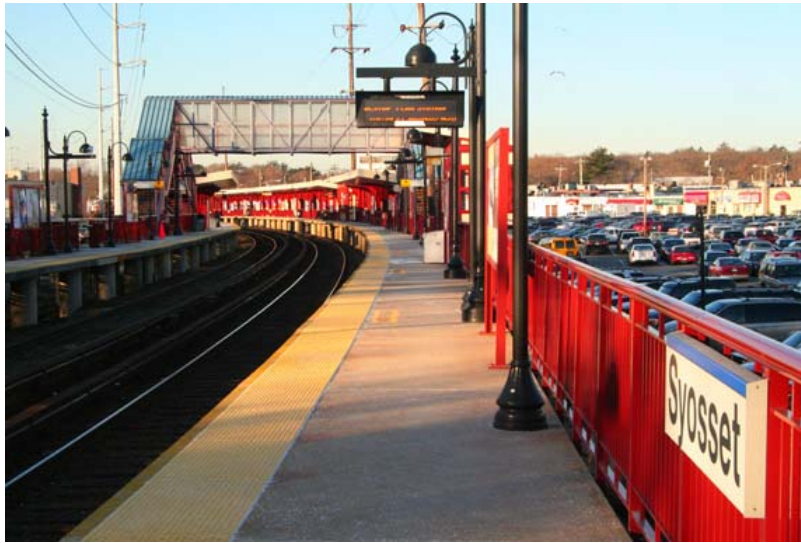
- 5 locations with gaps >10”
- Physical Solution:
 - Platform shifting has reduced all 5



On Track 2, we identified 5 door locations with gaps greater than 10 inches (we are calling these “Level 1” locations).

By shifting 250 feet of platform at the west end, we eliminated all 5 “Level 1” door locations. This was completed on Saturday, February 3.

Syosset – Track 1



Track One (the north side) at Syosset presents our greatest gap-related challenge because of its curvature and because it is not a terminal station. In the AM peak, 16 westbound trains travel through Syosset on Track One. Of these, six are express trains that by-pass the station, and ten are local trains that make the station stop. At car door locations, most of the gaps are 10 inches or more.

Physical solutions, including edgeboards and platform shifting, were recently completed on track 1 at five door locations.

In the short term, we are providing extra announcements and will design special signs for Syosset.

But there are potential longer term solutions that we are currently evaluating:

Syosset – Track 1



Because of the unique problems presented by Syosset, the Railroad will retain a consultant to review train operations, as well as station and track infrastructure, to recommend physical or operational changes that may allow a reduction to the gaps.

Longer-term Strategies: Engineering & Standards

Long-term possibilities under review

- Evaluating revisions to existing standards
 - Retrofit cars with wider threshold plates to add 4" or 2"
 - Change distance from centerline of track to platform from current 5'8" to 5'7" (NY State minimum)
- Retractable Gap Fillers

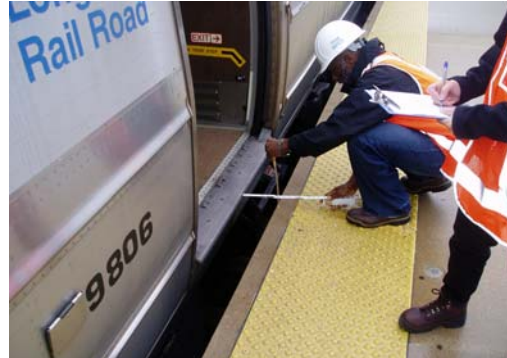
Long-term systemwide solutions under review that may benefit Syosset include revising our standards, such as:

- Widening existing 10-foot cars by installing wider threshold plates. If we can widen cars to 10 feet 4 inches, we would reduce gaps by 2 inches. Widening cars to 10 feet 2 inches would reduce the gap by one inch.
- We will consider reducing our existing 5-foot, 8-inch Track-Centerline-to-Platform-Edge standard to 5-foot, 7-inches. This would reduce most gaps at straight platforms to 7 inches.

We are examining the use of Retractable Gap Fillers. Now in use at 3 indoor subway stations, a consultant review is required to determine if there is a product compatible with outdoor use that would not deploy when non-stop trains move through the station. We would also need to understand the operational impacts associated with increased station dwell time needed for deployment and retraction. In this regard, we have finalized a scope of work for a consultant who will perform a feasibility study that we estimate will be complete in April 2007. We are open to new ideas regarding other types of GAP fillers that attach to platforms, and devices that attach to cars. We may wish to consider using gap fillers at at some critical door locations, together with public information that would direct customers to them.

On Going LIRR Strategies

- Annual initiative to measure and mitigate gaps
- Participate in industry forums
- Accident review



In addition to re-evaluating our gap-related standards, other longer-term strategies will include:

A new annual initiative in which we will conduct gap measurements at all our stations, and use these measurements to mitigate gaps where possible.

We will participate in industry forums. As part of this process, we hope to share data and gain insight on how to deal with gap-related concerns.

The Railroad has formed a Customer Safety Committee to review all gap accidents, to ensure that we have accurate measurements and accurate accident reports.

Longer-term Strategies: Public Awareness



In the longer term – our Public Awareness strategy will focus on:

- More specific, targeted gap reminders at stations with wider gaps
- Ensuring that customers understand that operating safely requires space between the platform and the train
- And the relevance of personal responsibility – such as holding a child's hand, refraining from pushing or shoving in crowded situations, putting down cell phones, and turning off personal electronic devices when boarding or exiting the train

Addressing the Gap

MTA Long Island Rail Road

That concludes my presentation. Thank you Senator Marcellino and to all of the Senators, for the opportunity to share this information. I'll be happy to answer any questions you may have.