Introduction

Freight on Transit (FOT) describes any operation that uses public transit vehicles or infrastructure to move something other than passengers. It can mean moving goods alongside passengers on buses, attaching cargo trailers to transit vehicles, operating freight vehicles between transit trips on subway lines, etc. This report describes the most successful and/or notable FOT operations, including how they work, the factors that make them successful, the negative impacts of operations, the origins, and how each operation or implementation process might apply to transportation in the Greater Toronto and Hamilton Area (GTHA). The operations are divided into the following categories:

**FOT EX - freight on existing transit trips**
**FOT NEW - new freight trips on existing transit infrastructure**

FOT-EX operations increase the efficiency of transit trips by adding freight to passenger service. Goods may be located alongside passengers, in separate cargo areas, or in trailers attached to the vehicle. They may be operated by a public transit agency or the arrangement may be informal, with users taking advantage of the speed, price, and convenience of public transit when transporting smaller items in congested areas.

FOT-NEW operations differ from FOT-EX as they move freight on new trips using public transit infrastructure. All examples in this report are relevant to rail operations only as no examples of FOT-NEW operations using buses were found. FOT-NEW is typically higher impact and more expensive than FOT-EX and requires official partnerships or lease agreements between shippers and transit agencies as well as moderate-to-heavy investment in rail infrastructure including tracks, vehicles, and/or vehicle modifications. The main advantages of FOT-NEW are reduced congestion, emissions, delivery time, and delivery cost.
Freight on Transit Handbook

A summary of best practices

Table of Contents

i. Introduction .............................................................................................................. i
ii. Table of Contents .................................................................................................... ii

FOT-EX Operations

1. Greyhound Courier Express, Canada................................................................. 1
2. Matkahuoito, Finland .......................................................................................... 2
3. ic:kurier, Germany .............................................................................................. 3
4. A Way Express, Canada ...................................................................................... 4
5. Dabbawalas, India .................................................................................................. 5

FOT-NEW Operations

1. CarGo Tram, Germany.......................................................................................... 6
2. Cargotram, Switzerland ...................................................................................... 7
3. Guterbim, Austria................................................................................................... 8
4. Tramfret, France ................................................................................................... 9
5. City Cargo, The Netherlands .............................................................................. 10
6. Garbage Subways, USA..................................................................................... 11
7. San Diego Imperial Valley Railroad, USA ....................................................... 12
## Greyhound Courier Express

**Canada and USA**

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved Parties</td>
<td><strong>Greyhound Bus Lines</strong> - Intercity Bus Operator</td>
</tr>
</tbody>
</table>

### Description

**Operation**

Greyhound is an intercity bus operator running roughly 130 routes to over 3,700 locations in Canada and the United States. On top of passenger services they offer a freight service called *Greyhound Courier Express* in Canada and *Greyhound Package Express* in the USA. Buses ship pieces of freight up to 100 pounds, providing deliveries for both business to business and consumer to consumer clients. Packages are normally picked up and dropped off at a greyhound agent although they also partner with express couriers to offer door to door deliveries. Freight is carried in luggage bays or in trailers attached to the back of the bus.

**Benefits**

The freight service is intended to generate revenue and offset the high-cost per mile on passenger routes while serving areas not typically served by other express delivery companies. Revenue generated by freight is significant; other intercity bus operators report freight revenue exceeding that of ticket sales. Customers use this service as it is generally less expensive than other couriers and provides both frequent and regular deliveries even at times when other delivery companies don't operate, such as at night and on weekends.

**Costs**

As bus drivers need to be able to lift up to 100 pounds, it limits the applicant pool for the organization. As well, bus drivers lifting heavier items can increase the risk of injuries and costs to the company as a result of disability payments. Finally, drivers may spend extra time loading and unloading freight causing delays, or take detours to deliver or pick up freight at terminals without any passenger loading and unloading.

### Similar Operations in the GTHA

GO Transit operated a freight service called *Bus Parcel Express* that was discontinued in the 1970s so that drivers could focus on providing excellent customer service. Ontario Northland offers freight service on their bus routes linking Toronto with northern Ontario.

### Lessons to be learned in the GTHA

Carrying freight on intercity buses is common practice, but is not typical on regional transit vehicles.

### Further Reading

- Greyhound Courier Express - http://shipgreyhound.ca/
**Matkahuolto**  
Finland

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational since 1933</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved Parties</td>
<td>Matkahuolto - Conglomerate of nearly 400 regional, local and intercity bus operators</td>
</tr>
</tbody>
</table>
| Description | **Operation**  
Matkahuolto is a conglomerate of about 400 Finnish regional and intercity bus agencies offering parcel service on its comprehensive network. While Greyhound and others offer only intercity deliveries, Matkahuolto offers urban and local deliveries as well. Drop-offs and pickups are generally made at one of 10,100 bus terminals and agencies located at retail outlets, but bus drivers are able to collect packages as well. The organization also partners with logistics firms to offer international deliveries.  

**Why it works**  
This operation takes advantage of travel patterns and existing infrastructure as nearly 85% of transit trips in Finland, outside of Helsinki, are made by bus. The success of Matkahuolto is also related to its highly developed tracking and scheduling system which is well coordinated across its different routes. In addition, there are numerous freight options for customers based on their needs, how fast they want the package delivered and how much they are willing to pay. Due to the advanced tracking system, customers can closely follow their package and have the option to directly pick up their package from a bus driver.  

**Benefits and Costs**  
These are the same as those for other intercity bus operators that offer a package service. However, due to advanced tracking and partnerships with local transit agencies, the level of service is much higher and allows Matkahuolto to generate more revenue. Like Greyhound, revenue generated from freight service allows them to serve less frequent routes and expand into new areas. There are no reports of delays related to freight service, but this does not mean that they don’t occur.  

**Similar Operation -> Bussgods, Sweden**  
A similar service is offered in Sweden called Bussgods or Bus Goods. Bussgods and Matkahuolto work together making bus freight service between the two countries very easy. Bussgods tends to send freight on buses outside of peak periods. |

| Lessons to be learned in the GTHA | A service like Matkahuolto may be feasible when there is close interoperability between regional agencies. It would be worth an economic analysis and, should a service be feasible, be advised by Matkahuolto directly about their tracking system. |
Bussgods (Swedish) - [http://www.bussgods.se/](http://www.bussgods.se/) |
### ic:kurier

**Germany**

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational since 2003</th>
</tr>
</thead>
</table>
| Involved Parties | **Lufthansa Cargo** - Delivery company specializing in same day deliveries; primarily air cargo  
**Deutsch Bahn AG** - German Railroad |
| Description | **Operation**  
ic:kurier is a service offered through *Time Matters*, a branch of Lufthansa Cargo offering same day deliveries. The service offers same day deliveries of high value documents, laptops, or other urgent deliveries at prices and travel times comparable to air cargo. Deliveries are offered between 140 stations in Germany as well as trips to Paris and Vienna. As train stations are typically located in downtown areas, this makes it more convenient for customers, and even faster than air travel for shorter distances. Door to door deliveries are offered or customers may drop off and pickup packages directly at train stations. Cargo is located in a special area on trains and requires no upgrades to vehicles. |
| Why it works | This operation works because Deutsch Bahn AG offers many regional rail trips per day and rail travel is quite common in Germany. Adding the freight service is done at low cost, providing revenue for rail operators, a convenient service for customers, and increased delivery flexibility for Lufthansa Cargo. |
| Benefits and Costs | This is a highly successful FOT operation. Same day deliveries are becoming commonplace and due to frequent train trips, may be offered throughout the day and overnight. Trains are not sensitive to weather or congestion and ic:kurier offers discounts on return customers and bulk shipments. While there are no reported negative effects on passenger travel, it is possible that conflicts could arise between passengers and freight operators. |
| Related Operations in North America | **-> VIAPAQ and Amtrak Express**  
VIA Rail, Canada’s intercity passenger rail operator also offers same day and overnight courier service between cities in Ontario, Quebec, New Brunswick and Nova Scotia though less frequent trips make the service much less well-used. Amtrak, the intercity passenger rail operator in the United States offers a courier service on passenger train trips called Amtrak Express, though they do not guarantee same day or next day deliveries. They advertise delivery times of 3-7 days. |
| Lessons to be learned in the GTHA | VIAPAQ could be advertised more widely to increase usage. With plans for greater interoperability across the region, a network of mobility hubs, and two-way, all-day GO service, there will be increased options for same day deliveries within the region. |
## A-Way Express

**Toronto, Canada**

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational since 1987</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved Parties</td>
<td>A Way Express - Social Purpose Courier Company</td>
</tr>
</tbody>
</table>

### Description

#### Operation

* A Way Express is one of at least four Toronto-based courier companies that use public transit to make deliveries, giving couriers a transit pass, or metropass, rather than a bike or car. A Way also calls themselves a “social purpose courier” company as they exclusively hire couriers with mental health challenges. They offer same day deliveries within a network served by the TTC, also offering rush and premium service guaranteeing deliveries within one or two hours respectively. Couriers travel long haul distances using the bus, subway and streetcar networks and on foot.

### Costs and Benefits

* Metropasser couriers provide low emission, cheap, and fast deliveries, especially during congested periods while avoiding variable fuel and parking costs associated with van and truck operations. The service is limited as it can only offer deliveries within an area served by the TTC (south of Finch; East of Kipling; generally west of Victoria park) and it is subject to TTC delays, breakdowns, and peak period crowding.

### Related Operation: Good Foot Delivery

* Good Foot Delivery offers a courier service very similar to A Way using foot couriers riding public transit in Toronto, and offers employment to those with developmental disabilities.

### Other Metropasser Couriers

* Greenteam Courier and QA courier offer metropasser deliveries as part of larger scale courier operations. Greenteam offers deliveries in Toronto while QA employs metropassers in various Canadian cities. It is assumed that metropassers exist in other countries but these are the most notable. DHL also partnered with a British company called JogPost to make deliveries during the London Olympics and Paralympics using metropasser and jogging couriers.

### Lessons to be learned in the GTHA

* The metropasser model already works. With greater regional interoperability and increased transportation service, there may be opportunities to expand the model into the wider GTHA region.

### Further Reading

- A Way Express - http://www.awaycourier.ca/
- Good Foot Delivery - http://goodfootdelivery.com/about/
- QA Courier - http://www.qacourier.com/
# Dabbawalas

**Mumbai, India**

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational since 1880</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved Parties</td>
<td>Nutan Mumbai Tiffin Box Suppliers Association (NMTBSA) - Lunch Delivery Service</td>
</tr>
<tr>
<td>Description</td>
<td>Operation</td>
</tr>
<tr>
<td></td>
<td>Dabbawala is a Hindi word that means “box carrier” or “lunch pail man”. Mumbai’s Dabbawalas are a team of nearly 5,000 deliverymen moving upwards of 200,000 lunches every day using a multimodal supply chain that includes the Mumbai Suburban Railway for the long haul portion of the trip. Lunches are prepared in suburban homes then delivered to office workers in the urban core travelling in aluminum pails called “tiffins”. In the suburbs, one Dabbawala will pickup lunches from homes on foot or on a bike, and transport them to the commuter rail station where they are sorted and put on the right train. The tiffins travel into the urban core free of congestion and once they arrive to the destination, are delivered to the appropriate office buildings again by bike or walking deliverymen. The supply chain is reversed in the afternoon as empty tiffins are collected from offices and returned to the appropriate home in the suburbs.</td>
</tr>
<tr>
<td>Why it works</td>
<td>Businessmen in Mumbai prefer to eat a home cooked meal rather than eating a sandwich or fast food, meaning that there is a built in market for this service. Trains are extremely crowded during normal commuting hours, so much so that even carrying a lunch pail proves difficult for business men traveling to work during the AM peak travel period. The Dabbawala take advantage of these patterns on the suburban rail network, carrying lunches after the AM peak which makes travel smoother. Empty tiffins are then returned before the PM peak begins. This is one of the most complex and impressive supply chains, achieving Six Sigma certification based on a delivery accuracy of 99.999999%; roughly one missed delivery in every 16 million or one missed delivery every 3 months. This is achieved despite an estimated 50% literacy rate of deliverymen. The tiffins are coded with a series of symbols and colors indicating the appropriate train and end destinations. As well, each Dabbawala is a part owner of the company and often delivers the same route for years resulting in familiarity as well as a personal stake in the group’s success.</td>
</tr>
<tr>
<td>Lessons to be learned in the GTHA</td>
<td>There is no business quite like the Dabbawala. The market is largely a product of Indian society, eating habits, work habits, gender roles, etc. Tiffin Day is a Toronto company that delivers Indian food in Tiffin Boxes using E-Bikes rather than Public transit. Similar Tiffin lunch delivery operations exist in London, England and Silicon Valley, California.</td>
</tr>
</tbody>
</table>
Toronto Tiffin Day - [https://www.tiffinday.com/](https://www.tiffinday.com/) |
### CarGo Tram
Dresden, Germany

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational since 2001</th>
</tr>
</thead>
</table>
| Involved Parties | **Volkswagen** - Auto Manufacturer  
**Transportation Services of Dresden (DVB AG)** - Public transit operator |
| Description | **Operations**  
The Dresden CarGo Tram moves car parts between a logistics center and a factory using a 4 km section of the passenger tram network connected directly to the two activity nodes with rail spur tracks. The 60 meter long trams run all day between passenger tram service, carrying up to 60 tons of goods and eliminating three truck movements per trip. The five section vehicles consist of three freight units and two control units to allow movement in both directions.  

**Origin**  
The CarGo Tram came out of Volkswagen’s desire to build a “transparent factory” in downtown Dresden where spectators could witness the auto manufacturing process from start to finish. This type of attraction required a central location as well as increased goods movement activity. As the city is highly sensitive to congestion, Volkswagen built the CarGo Tram to service the factory using the existing tram network to avoid this congestion.  

**Benefits and Positive Impacts**  
- Each CarGo Tram trip eliminates three truck movements providing the associated environmental benefits and congestion relief.  
- The CarGo Tram has never disrupted passenger travel. It uses the “follow” method, closely trailing passenger trams with logistics managed by the DVB AG, the passenger tram operator.  
- The operations are profitable and competitive with trucks.  

**Costs**  
- Each of the 2 CarGo Trams cost approximately 3.3 million Euros when they were constructed in 2000  
- Initial construction costs were low due to the proximal locations of the factory and distribution center to the existing passenger tram line.  

**Lessons to be learned in the GTHA**  
The CarGo Tram is successful because there is enough capacity on the tram network, as well as a guaranteed flow of goods, between the two nodes. The nodes are located close to the tram network, and there was close communication and collaboration between Volkswagen and DVG.  

**Further Reading**  
DVB AG Official Site, *The Cargo Tram*  
# Cargotram

**Zurich, Switzerland**

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational since 2003</th>
</tr>
</thead>
</table>
| Involved Parties | ERZ - Waste collection agency  
VBZ - Public transit operator |
| Description | **Operations**  
The Cargotram transports garbage items and recyclables too large for regular collection from nine drop-off points to recycling and waste treatment plants located near the tram network in Zurich using a hub and spoke delivery pattern. Citizens have to pay to have larger items collected by garbage trucks or they can leave them at any of the Cargotram collection points for free. They can access the collection schedule by visiting the municipal waste collection website, then take large waste/recyclable items to the appropriate drop-off point on the right day to be collected by the Cargotram.  

**Origin**  
Zurich is highly congested and garbage trucks stuck in traffic cause emissions and congestion. The Cargotram was a sensible solution to this problem and was implemented quickly and cheaply due to the conversion of old passenger trams into waste collecting vehicles and because of the close location of waste processing infrastructure to the extensive passenger tram network.  

**Benefits and Positive Impacts**  
- The annual elimination of 5,000 km of truck trips and 960 hours of idling time results in 37,500 liters of diesel saved and 5 tons of CO₂ emissions saved annually.
- Congestion is eliminated by removing garbage truck trips as well as personal trips between home and waste processing facilities.
- The service is useful to citizens who can take garbage to proximal collection points rather than directly to the dump or having them collected for a fee, saving them time and/or money.

**Costs**  
- Very low startup costs of ~32,000 Euros in 2003 due to location of infrastructure and conversion of existing trams into waste collecting vehicles.

**Lessons to be learned in the GTHA**  
The idea of a waste collecting tram is highly transferable to many cities but will only have congestion reductions if trams are operated on a separate Right of Way. Cargotram Zurich benefited from good communication between stakeholders, planning, cooperation of the transit agency, and high uptake from citizens.

**Further Reading**  
Presentation from Best Urban Freight Solutions Conference  
http://www.bestufs.net/download/conferences/Amsterdam_Jun05/BESTUFS_Amsterdam_June05_Neuhold_ERZ.pdf  
ERZ Cargotram (in German) - http://www.stadt-zuerich.ch/content/ted/de/index/entsorgung_recycling/sauberes_zuerich/entsorgen_wiederverwerten/cargotram_elektrotram/tram_was_was_nicht.html
# Guterbim

**Vienna, Austria**

<table>
<thead>
<tr>
<th>Status</th>
<th>On hold / defunct after 2005 and 2007 pilot tests</th>
</tr>
</thead>
</table>
| **Involved Parties** | **Austrian Ministry for Transport and Innovations** - Federal Government  
Wiener Lienen - Public transit operator  
Vienna Consult and Tina Vienna - Engineering Consultants |
| **Description** | **Operations**  
The Guterbim, operated by Wiener Lienen, Vienna’s public transit agency, only operated for a short time making internal deliveries of spare transit vehicle parts between a warehouse and satellite maintenance facilities during two pilot tests in 2005 and 2007. Operations and vehicle design were almost identical to the Zurich Cargotram.  
**Origin**  
The Guterbim, launched to shift deliveries from trucks onto the tram network to reduce the impacts of urban goods movement and circumvent truck and parking restrictions in downtown areas. The project was sponsored by the Austrian Ministry of Transport, and operated by Wiener Lienen, Vienna’s public transit operator with input from different engineering consultants.  
**Failure**  
While two pilot tests showed that the Guterbim did not negatively affect passenger travel, the operation was put on hold after the service was not taken up. No shippers had activity nodes located near enough to the tram network to justify the start-up costs. |
| **Lessons to be learned in the GTHA** | Freight on transit operations require a willing shipper or customer base in order to help cover costs and provide a business case for implementation. The customer base should be secured before investing time and money in advanced logistics and vehicle design. |
| **Further Reading** | *GuterBim, Vienna’s Cargo Tram Attempt*  
# TramFret

**Paris, France**

<table>
<thead>
<tr>
<th>Status</th>
<th>Planning stages and Stakeholder Engagement after successful pilot test</th>
</tr>
</thead>
</table>
| Involved Parties | **Paris Transport Authority (RATP)** - City public transit operator  
**Ile de France Regional Transport Authority (STIF)** - Regional transportation agency  
**Paris City Government**  
**Ile de France Regional Government**  
**Private Partners/Stakeholders** *(Pending survey and engagement process)* |

## Description

### Operations

The only operation of the TramFret (Freight tram) was a 2011 pilot test that inserted empty trams during passenger service hours to see if the additional tram traffic would cause any disruptions to passenger travel. The pilot test was a success as each 80 ton tram managed to operate during passenger service hours without slowing down passenger travel. The next step was a survey to engage private sector stakeholders to identify suitable customers to make the mode shift from trucks onto the TramFret. The 100+ km of tram lines operated by the Ile De France Transport Authority means that there is a large possibility that a suitable shipper can be found that operates a logistics pattern somewhat parallel to a section of the network.

### Origin

The TramFret project is being sold as a means of reducing truck movements in downtown Paris. Currently 90% of the 1 million daily deliveries in Paris are undertaken on trucks resulting in high congestion levels, disruptions, and pollution. Before making any serious investments in vehicles or spur tracks, the project leaders are focused on identifying suitable customers.

### Similar Project -> Monoprix Deliveries

This is not Paris’s first instance of urban rail freight as the supermarket Monoprix has made the shift from trucks to a combination of urban rail and natural gas vehicles to serve 90 of its locations. This mode shift has large environmental savings and continues despite 26% higher costs than trucks.

## Lessons to be learned in the GTHA

TramFret is approaching the concept of implementation differently than Guterbim as they are delaying making vehicles until a suitable private sector partner is found. This planning process should be a more suitable way to plan Freight on Transit operations in the GTHA to avoid making any necessary infrastructure investments. Freight on transit is a difficult sell and must have considerable political and financial support before investing time and money.

## Further Reading

http://www.apur.org/sites/default/files/documents/APBROAPU534_0.pdf “Le Project TramFret” (French)
## City Cargo

**Amsterdam, Netherlands**

<table>
<thead>
<tr>
<th>Status</th>
<th>Declared Bankruptcy in 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved Parties</td>
<td></td>
</tr>
<tr>
<td>City Cargo</td>
<td>Logistics operator</td>
</tr>
<tr>
<td>Amsterdam City Government</td>
<td>Public transit operator</td>
</tr>
<tr>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>Operations</td>
<td></td>
</tr>
<tr>
<td>The City Cargo project was designed to improve urban deliveries and reduce the impacts of freight in downtown Amsterdam by using consolidation centers connected to the tram and roadway, freight trams making deliveries into urban areas operating on the passenger network, and small electric trucks making last mile deliveries to shops and markets. Though full implementation never occurred, two successful pilot tests showed that the operations were feasible as 7.5 ton fully loaded cargo trams were inserted into the network and did not disrupt passenger travel.</td>
<td></td>
</tr>
<tr>
<td>Proposed Benefits (from original feasibility study)</td>
<td></td>
</tr>
<tr>
<td>- Removal of 50% of trucks in urban areas</td>
<td></td>
</tr>
<tr>
<td>- Reduce emissions by 20%</td>
<td></td>
</tr>
<tr>
<td>- Cost savings for shippers due to lower operating costs</td>
<td></td>
</tr>
<tr>
<td>Failure</td>
<td></td>
</tr>
<tr>
<td>The project had considerable momentum running two successful pilot tests in 2007 and 2008 and generating upwards of 65 million euros from investors. City Cargo estimated about 50 trams and 400 electric trucks would be needed for full implementation which they estimated could eliminate nearly 50% of truck trips in Amsterdam. The city and GVB were in favor of the operations under two conditions: that passenger service would not be disrupted and that they could operate without subsidies. The first condition required additional investments in tracks which City Cargo could not cover on their own. Unable to convince GVB or the city to provide subsidies, the company went bankrupt.</td>
<td></td>
</tr>
</tbody>
</table>

| Lessons to be learned in the GTHA | Unlike successful projects in Dresden and Zurich that started small focusing on a single commodity and a simple distribution network, City Cargo aimed high. The operation was extremely expensive, with many difficult stakeholders. This suggests that freight on transit should be a gradual process. The refusal on the part of the city and GVB to subsidize may have been a political decision as well as a financial one suggesting that champions are needed to push these projects through initial resistance. A smaller, less comprehensive project may have had less resistance. |

| Further Reading | City Cargo Case Study - http://www.eltis.org/index.php?id=13&study_id=1547 |
# Garbage Subway

**New York City, USA**

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involved Parties</td>
<td>Metropolitan Transportation Authority (MTA) - Public transit operator</td>
</tr>
</tbody>
</table>

## Description

**Operation**

8 modified subway trains empty 90 tons of garbage from the New York City Subway stations every night during late hours when passenger trains run far less frequently. The modified trains are made up of a gutted subway car which transports the cleaning crew pulling a number of flatbed cars carrying rows of wheeled trashcans. The trains leave the yard with empty trash cans and are switched with full ones along the garbage run with each train visiting 40-50 stations each night.

**Benefits**

The amount of garbage emptied by the refuse trains every night is equal to approximately 6 garbage trucks resulting in emissions and congestion savings. In addition, it is a more direct way of emptying garbage from the subways so saves time as well.

**Costs**

The garbage trains do not smell good, contribute in no small part to rodent problems at stations, and are reportedly unpleasant to passengers waiting for trains late at night.

**Similar Operation -> Toronto Tokyo Rose**

The TTC operated a similar operation from 1968-2000 using gutted subway cars to empty trash from subway stations along the Yonge and Bloor lines. The trash trains were discontinued after one of them caught fire destroying the vehicle and part of Old Mill station prompting the TTC to switch to more traditional trash collection methods.

## Lessons to be learned in the GTHA

Toronto discontinued the trash trains not because of any large problems with the operations but because of one specific incident, the fire in 2000.

## Further Reading

- Newspaper article on Garbage Subways
- BlogTO Post on Toronto Trash Trains
  - [http://www.blogto.com/city/2012/05/a_brief_history_of_the_tokyo_rose_garbage_train/](http://www.blogto.com/city/2012/05/a_brief_history_of_the_tokyo_rose_garbage_train/)
## San Diego Imperial Valley Railroad

**San Diego, USA**

<table>
<thead>
<tr>
<th>Status</th>
<th>Operational</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Involved Parties</strong></td>
<td></td>
</tr>
<tr>
<td>San Diego Imperial Valley Railroad (SDIV) - Short Haul Freight Mover</td>
<td></td>
</tr>
<tr>
<td>San Diego Metropolitan Transit System (MTS) - Public Transit Operator</td>
<td></td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Operation</td>
</tr>
<tr>
<td>SDIV is a short haul freight mover that shares tracks with the San Diego Trolley, a light rail vehicle similar to Toronto’s streetcars operated by MTS, the public transit operator in San Diego. SDIV operates on the trolley lines outside of passenger hours between 1 and 4 AM leaving it only enough time to run a single freight train each night, normally carrying things like aggregate, lumber, sand, and a number of other items. Freight on transit operations occur on two different sections of the Trolley system: on the Orange line which runs from downtown San Diego to the North East and on the Blue Line which runs from downtown south to the Mexican border. The operation is successful due to the good communication between SDIV train operators and MTS employees that oversee operations on trolley lines.</td>
<td></td>
</tr>
<tr>
<td><strong>Origin</strong></td>
<td></td>
</tr>
<tr>
<td>The lines used by the San Diego Trolley used to be exclusive freight lines, but were converted to trolley lines in 1981. This reduced freight services greatly. Freight trains continued to operate outside of passenger hours informally until the resolution of the FRA shared track waiver in 2000.</td>
<td></td>
</tr>
<tr>
<td><strong>Costs and Benefits</strong></td>
<td></td>
</tr>
<tr>
<td>The SDIV operations on Trolley lines provide crucial freight connections to downtown San Diego. The portion of operations on the Blue Line is especially critical as it is a key freight link to Mexico that is cheaper than trucks, especially when factoring in long wait times at border crossings. Due to the short time windows however imposed by the FRA waiver and safety regulations, operations are fairly low scale with the three hour window only allowing a single freight train trip due to travel time and time spent loading and unloading. In terms of costs and benefits for the MTS, SDIV pays them to use their tracks which brings in additional revenue. Freight services do no disrupt passenger travel, but they do force maintenance crews fixing trolley lines to operate around freight schedules.</td>
<td></td>
</tr>
<tr>
<td><strong>Similar Operations</strong></td>
<td></td>
</tr>
<tr>
<td>The shared freight/transit operations are made possible by a Federal Railway Administration (FRA) waiver hat allows freight vehicles on transit rails. As of 2008 there were nine total FRA shared track waivers but fewer operations taking advantage of the status. The short time windows make it difficult to run a large scale operation.</td>
<td></td>
</tr>
<tr>
<td><strong>Lessons to be learned in the GTHA</strong></td>
<td></td>
</tr>
<tr>
<td>The origin of the San Diego Trolley is similar to that of GO Transit as passenger service was added to freight lines with passenger service eventually overtaking freight service. CN moves freight on lines used by GO Transit but not in areas in the central downtown core. Connections to the downtown core could be possible by connecting to light rail lines used by TTC streetcars but would require expensive upgrades and overnight deliveries could disrupt maintenance schedules.</td>
<td></td>
</tr>
<tr>
<td><strong>Further Reading</strong></td>
<td></td>
</tr>
</tbody>
</table>