

Methodology: “Shmutz” Subway Cleanliness Survey, 2005

Background

This report is intended as a follow-up to the April 1998, February 1999, January 2000, February 2001, March 2003, March 2004 and April 2005 NYPIRG Straphangers Campaign surveys, *Subway Shmutz: Cleanliness in New York City Subway Cars*. The methodology followed in this survey is identical to that used in the 2000-2005 reports. One adjustment to the methodology of the 1998 and 1999 surveys is noted below.

Preparation

In July 1997, August 1999 and again in September 2002, our project directors accompanied members of the New York City Transit Passenger Environment Survey (PES) staff on an in-field mock rating of some 15 cars on two subway lines. This session included clarification of New York City Transit’s own rating system. We also received the actual survey form used by PES staff. PES looks at several measurements of the subway car environment, including car and seat cleanliness. Our survey is an in-depth measurement of car floor and seat cleanliness only.

Rating System

PES surveyors evaluate the cleanliness of subway car floors and seats with a four-level rating system in which a score of 1 represents the highest cleanliness rating and a score of 4 represents the lowest. The following definitions are from the New York City Transit’s Passenger Environment Survey, 1st Quarter 1997 and are still in use:

<u>Score</u>	<u>PES terminology</u>	<u>PES definition</u>
1	None	Basically dirt free.
2	Light	Occasional “ground-in” spots but generally clean.
3	Moderate	Dingy floor, one or two sticky dry spots.
4	Heavy	Heavy dirt; <u>any</u> opened or spilled food, hazardous (e.g. rolling bottles), or malodorous conditions, sticky wet spots, any seats unusable due to unclean conditions.

The PES notes that “the nature of the dirt (e.g. spilled food, malodorous floor/seat condition, etc.) is also considered in addition to just the volume.”*

We believe our definitions more accurately reflect the meaning behind each score:

<u>Score</u>	<u>PES terminology</u>	<u>Straphangers Campaign terminology</u>
1	None	Extraordinarily Clean
2	Light	Clean
3	Moderate	Dirty
4	Heavy	Heavily Dirty

In our study, we used a numbered system identical to the one listed above. However, we modified the terms to describe each rating.

* Passenger Environment Survey, New York City Transit, First Quarter 1997, p. 11

Survey

Our project directors trained 44 surveyors. Between September 2, 2005 to January 5, 2006, surveyors rated exactly 100 subway cars on each of 22 lines*, similar to the size of PES samples. We did not survey the Grand Central-Times Square, Rockaway and Franklin Avenue Shuttles because of the short length of these routes. Measurements were taken both on weekdays and weekends, during rush hours, and evening and overnight hours.

Analysis of Survey Data

All survey data submitted was visually inspected for error and then coded for entry into a spreadsheet format. After entering the data, we calculated both by-line and systemwide totals. The percentage of cars rated “dirty” and “heavily dirty” were combined to offer a measurement of the proportion of cars with an unacceptable level of interior dirt. Similarly, “extraordinarily clean” and “clean” rating totals were combined to reflect the proportion of subway cars with an acceptable level of dirt. Systemwide car cleanliness proportion is significant at the .05 confidence level within plus or minus 3%. By-line cleanliness levels are significant at the .05 confidence level within plus or minus 4-11%:

Line	Percent Clean or Extraordinarily Clean	Confidence Interval
1	76%	9%
2	22%	9%
3	75%	9%
4	94%	6%
5	59%	11%
6	79%	9%
7	22%	9%
A	46%	11%
B	24%	9%
C	53%	11%
D	53%	11%
E	2%	4%
F	49%	11%
G	49%	11%
J	17%	8%
L	61%	11%
M	4%	5%
N	65%	10%
Q	69%	10%
R	43%	11%
V	23%	9%
W	56%	11%
System	47%	3%

* The sample size per line is identical to that used in the 2000-2005 surveys. In 2002, two new lines—the V and W—were included in our analysis. In 1999 and 1998 Straphangers Campaign surveyors rated *approximately* 100 cars on each line surveyed.

Table One notes that in the period between the 2004 and 2005 surveys, car conditions deteriorated significantly systemwide. By-line car conditions improved on three lines and deteriorated on fifteen lines. These results are significant at the .05 level.

Comparison with PES Survey Data

The survey's finding of improvement mirror the trend in MTA New York City Transit own Passenger Environment Surveys (PES), which shows a deterioration in subway car cleanliness for the most recently available period. The number of clean car floors and seats (those with no or light dirt) "measured throughout the day while in service" declined from 81% in the second half of 2004 to 79% in the second half of 2005. (The PES used to be issued on a quarterly basis, but now only comes out twice a year. Reduced PES were part of the 2005 budget's "Program to Eliminate the Gap.") In past surveys, New York City Transit has rated subway cars as considerably more clean than has the campaign's surveys.

Credits

The NYPIRG Straphangers Campaign wishes to thank 44 volunteers who assisted in the survey. They are:

Melinda Barrios, Aziza Huda, Pamela Misir, Miguel Montero, Priya Sultan, Kaytrue Ting, Yves Antenor, Erica Berger, Galina Ginzburg, Daniella Weinberg, Andrew Williams, Michell Savagell, Catherine Morel, Moresha Mollette, Jalisa Hart, Daniel Javier, Shelton Anianev, Emmanuel Céspedes, Steve Townsend, Edward Vasquez, Rashida Abuwala, Megan Carley, Steve Mantovani, Mike Gualtieri, Toyin Ajasin Tanisha Clark, Christina Acosta, Deborah Belancourt, Robyn Citizen, Stephanie Cummings, David Harris, Francis "Al" Leyco, Kris Michaels, Kristen Morith, Bethany Bowen, Erin Heath, Julie Hagenbuch, Donald Navarro, Danny Ho, Amber Samalot, Steven Yu, Wei Xin Yuan, Brenae Leary and Courtney Rouson.