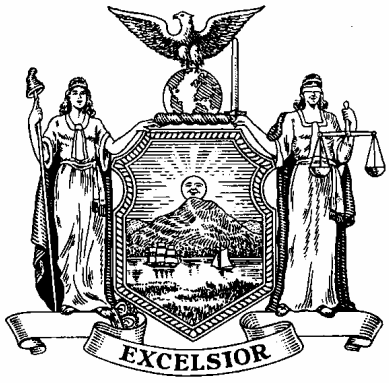
STATE OF NEW YORK



OFFICE OF THE INSPECTOR GENERAL
METROPOLITAN TRANSPORTATION
AUTHORITY

Investigation of the Inspection and Testing of NYC Transit Subway Signals During 1999

MTA/IG 2000-18 **October 2000**

Roland M. Malan
INSPECTOR GENERAL

September 27, 2000

Mr. Lawrence G. Reuter
President
MTA NYC Transit
370 Jay Street
Brooklyn, New York 11201-3814

Dear Mr. Reuter:

This transmits our report following our investigation of charges that the superintendents of the S3 subdivision (S3), Division of Signals (Signals), Metropolitan Transportation Authority, New York City Transit (NYC Transit), instructed several maintenance supervisors (MSs) to enter false information into the signal inspection and testing computer system.

Although we were unable to substantiate the allegation that superintendents instructed the MSs to enter false or inaccurate information into the computer, we did find that they instructed several MSs to conduct only visual inspections at the sacrifice of other scheduled signal tests. In addition, we found that S3 MSs did not follow the policies and procedures promulgated by NYC Transit, which require them to conduct specific visual inspections and tests at various time intervals.

We also determined that certain computer records generated by S3 MSs in 1999, pertaining to their performance of tests and visual inspections on signal equipment, contained false and inaccurate information.

We therefore make recommendations to ensure that MSs conduct their required visual inspections and tests in a timely manner, that NYC Transit review the workload of S3 MSs, that System Safety become involved in the oversight of all required visual inspections and tests that are conducted by the MSs, and that the current or any future computer system be strengthened to ensure accountability, including validating data input.

I am issuing this report pursuant to my responsibilities under Section 1279(4)(c) of the Public Authorities Law.

Sincerely,

Roland M. Malan
Inspector General

EXECUTIVE SUMMARY

BACKGROUND

The Office of the Inspector General (OIG) received an anonymous complaint alleging the superintendents of the S3 subdivision (S3), Division of Signals (Signals), Metropolitan Transportation Authority, New York City Transit (NYC Transit), instructed several maintenance supervisors (MSs) to enter false information into the signal inspection and testing computer system. Specifically, the complaint alleged: (1) the MSs did not conduct required visual inspections and tests of signal equipment; (2) the MSs were instructed to enter information into the computer reflecting their performance of visual inspections and tests of the signal equipment during June and July 1999, before the visual inspections were actually completed; (3) Alan Doran and Roger Taylor, Superintendents, Signals, NYC Transit, gave this directive because they were applying for an open position as general superintendent; and, (4) a safety concern existed because the visual inspections and tests were, in fact, not conducted.

While we were unable to substantiate the allegation that Doran and Taylor instructed the MSs to enter false or inaccurate information into the computer, we did find that they instructed several MSs to conduct only visual inspections at the sacrifice of other scheduled signal tests.

In addition, we found that S3 MSs did not follow the policies and procedure promulgated by NYC Transit, which require them to conduct specific visual inspections and tests at various time intervals.

We also determined that certain computer records generated by S3 MSs in 1999, pertaining to their performance of tests and visual inspections on signal equipment, contained false and inaccurate information.

In February 2000, the OIG notified NYC Transit that as a result of our investigation we discovered that required visual inspections and tests had not been conducted by MSs. In response, NYC Transit opined that a safety issue did not exist because the MSs visual inspections and tests were "supplemental." In August 2000, the OIG repeated its concern relative to the safety issues, specifically noting that MSs had not conducted the wire integrity test. NYC Transit acknowledged the issues in a September 12, 2000 response, and indicated that it would address and resolve the problem by November 15, 2000.

FINDINGS

1. S3 MSs did not follow NYC Transit policy requiring them to conduct certain visual inspections and tests of subway signal equipment in 1999, creating a potentially serious safety issue. They did not conduct a number of wire integrity tests in a timely fashion and in some cases they did not conduct the test at all. Many of the MSs did not conduct any tests or visual inspections for significant periods of time. Some MSs only conducted visual inspections but did not complete other required tests, while others conducted tests behind schedule.

2. The records maintained relative to the performance of required visual inspections and tests appeared falsified. The computer records indicated that MSs conducted visual inspections and tests on days when they were not physically present at work, and the records contradicted statements made by MSs during interviews with the OIG.

3. We found no substantiation for the allegation that Alan Doran or Roger Taylor specifically directed MSs to input false information into the signal inspection and testing computer system regarding the completion of required visual inspections and tests.

RECOMMENDATIONS

In light of our investigation and findings, we make the following recommendations:

1. While President Reuter has assured us that all overdue wire integrity tests will be performed by November 15, 2000, we recommend that from that day forward wire integrity tests be given a higher priority by the MSs and that MSs be instructed to perform all wire integrity tests on schedule.

2. MSs should be instructed to conduct all other assigned visual inspections and tests of signals and signal related equipment on schedule.

3. In light of the MSs' and superintendents' explanations as to why MSs were unable to conduct required visual inspections and tests, NYC Transit should review the workload of S3 MSs to ensure that its current level of staffing meets its workforce needs.

4. Though President Reuter stated that a monthly summary of the Equipment Test Report will be included in Maintenance of Way's Monthly Management Report, we also recommend that System Safety review monthly reports of the number and percentage of overdue visual inspections and tests within the Division of Signals, especially wire integrity tests.

5. Because of the safety implications involved when signal equipment is not inspected, System Safety should provide written notification to the Signal Department of its need to address the problem whenever the number or percentage of completed visual inspections and tests falls below an acceptable level.

6. The current signal inspection and testing computer system or any future system implemented should be strengthened to ensure accountability, including validating data input.

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INTRODUCTION

SUMMARY OF ALLEGATIONS

The Office of the Inspector General (OIG) received an anonymous complaint in August 1999 alleging the superintendents of the S3 subdivision (S3), Division of Signals (Signals), Metropolitan Transportation Authority, New York City Transit (NYC Transit), instructed several maintenance supervisors (MSs) to enter false information into the signal inspection and testing computer system. Specifically, the complaint alleged: (1) the MSs did not conduct required visual inspections and tests of signal equipment; (2) the MSs were instructed to enter information into the computer reflecting their performance of visual inspections and tests of the signal equipment during June and July 1999, before the visual inspections were actually completed; (3) Alan Doran and Roger Taylor, Superintendents, Signals, NYC Transit gave this directive because they were applying for an open position as general superintendent; and, (4) a safety concern existed because the visual inspections and tests were, in fact, not conducted.

SUMMARY OF FINDINGS

We found that S3 MSs did not follow the policy and procedure promulgated by NYC Transit, which required them to conduct specific visual inspections and tests at various time intervals. We also determined that the computer records generated by S3 MSs in 1999 pertaining to their performance of tests and visual inspections on signal equipment contained false and inaccurate information.[1]

We found no substantiation for the allegation that Doran and Taylor instructed the MSs to enter false or inaccurate information into the computer. However, we found that Doran and Taylor instructed several MSs to conduct only visual inspections in lieu of other scheduled signal tests.

We conclude that the failure to perform required visual inspections and tests by the S3 MSs raised serious safety issues.

In February 2000, the OIG notified NYC Transit that as a result of our investigation we discovered that required visual inspections and tests had not been conducted by MSs. In response, NYC Transit opined that a safety issue did not exist because the MSs visual inspections and tests were "supplemental." In August 2000, the OIG repeated its concern relative to the safety issues, specifically noting that MSs had not conducted the wire integrity test. NYC Transit acknowledged the issues in a September 12, 2000 response, and indicated that it would address and resolve the problem by November 15, 2000.

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[1] Since the anonymous complaint referred to the falsification and non-performance of visual inspections and tests on signal equipment, which outnumbers any other piece of subway track equipment, this report focuses on required signal equipment visual inspections and tests.

METHODOLOGY

We interviewed fifteen NYC Transit employees including S3 MSs, S3 superintendents and the current S3 general superintendent.[2] We also interviewed the superintendent for Planning and Control, Division of Signals. We examined a specific NYC Transit Policy/Instruction (P/I) and we reviewed various computer records.[3] We also examined the 1999 timesheets of each S3 MS. Our investigation covered the period from January to December 1999.

The investigation was conducted in accordance with the Quality Standards for Investigations promulgated by the President's Council on Integrity and Efficiency.

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[2] The MSs in the S3 subdivision during most of 1999 were Edward Brennan, Charles Dauble, Patrick Hackett, Darren Hollins, Stuart Hymowitz, Mark McQuillan, Michael Rekhtman, John Rotolo, Damond Short, Norman Thompson, Angelo Traverzo and Jim Walsh. Until November 1999, when John Rotolo joined the S3 unit, there were only 11 MS. Hollins and Traverzo became MSs in February 1999 and Thompson left the S3 unit when he was promoted in November 1999, to Superintendent on the IRT line. Alan Doran and Roger Taylor were the superintendents until August 1999 when Doran was promoted. Bill Carney was the general superintendent until July 1999 and Tracy Bowdwin became the new general superintendent in August 1999.

[3] A formal data reliability assessment could not be performed in this case because according to the MSs they were not required to maintain source documents relevant to the inspections and tests they performed.

FACTS

DIVISION OF SIGNALS

Signals is composed of three units: Maintenance Days/Nights; Capital Construction; and, Signal Operations. Maintenance Days/Nights maintains the subway signal equipment. It is divided into six subdivisions referred to as S1-S6. S3 represents the day shift (8:00 a.m. to 4:00 p.m.) that provides maintenance to portions of the Independent Line (IND), covering the entire A, B, C, D, E, F and G train lines, as well as the R train line in Brooklyn. S3 is composed of a general superintendent, two superintendents, 12 MSs, about 45 signal helpers and approximately 60 maintainers. In total, S3 is responsible for the inspection and maintenance of approximately 4,524 pieces of equipment.

Eleven of the twelve MSs[4] are responsible for the oversight of their own zone, which is further divided into sections manned by between four and six teams.[5] Each team consists of a signal helper (helper) and a signal maintainer (maintainer).

The superintendents work out of the 14th Street office. They are responsible for the daily oversight of S3 operations. In particular, they supervise the MSs and office staff. They also monitor the MSs' locations during the day, inform the MSs of special assignments, and send MSs to "trouble spots" in the MSs section.

TESTS AND VISUAL INSPECTIONS

NYC Transit P/I 11.006.2 provides signal employees with an "instructional paper for the standard tests and frequency required to ensure the safe and proper operation of components of the Signal Train Control System." It describes the "name type, purpose, method, frequency, responsibility for test and reporting required for all standard tests." A copy of the P/I is kept at every maintainer's and MS's "reporting location" and it is to be used if they have any questions about visual inspections and tests.

According to Bowdwin, the maintainers "service" every piece of equipment, which includes the "maintenance," or painting, oiling and greasing of equipment. They also perform tests and visual inspections every 30, 60 or 90 days, depending on the equipment. The maintainer is responsible for servicing the equipment on the tracks and in the yard. The maintainers conduct tests and visual inspections of the equipment as they service it.

A MS's duties include, among other things, supervising the maintainers in his section and conducting certain visual inspections and tests on equipment. When necessary, MSs or maintainers respond to "trouble spots" which are switches or signals that have become inoperable and need immediate attention so that train service will not be disrupted.

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[4] The twelfth MS is assigned to the S3 office at 14th Street in Manhattan.

[5] Factual statements in this report refer to the S3 subdivision, unless otherwise noted.

The signal helper assists the maintainer by carrying equipment and ensuring that hand lamps are charged and flashers[6] are working. The signal helper also flags[7] oncoming trains while the maintainer services equipment. The signal helper also paints, greases and oils the equipment. When the signal helper is servicing the equipment, the maintainer flags for him.

The MSs are required to conduct visual inspections and tests every 6 months, or every one or two years depending on the type of equipment. Maintainers and signal helpers are required to conduct visual inspections every 30 or 60 days depending on the type of equipment. In addition, to the visual inspections, the MSs and maintainers conduct tests on signals, switches, and other pieces of equipment.

On every signal, MSs and maintainers are required to conduct either three or four tests, depending on the equipment. The four tests conducted on most signals are the vital relay test, the track circuit test, the roadway element test and the track wire integrity test (wire integrity test). The wire integrity test is an annual test that is only conducted by the MSs.[8]

METHOD OF REPORTING THE COMPLETION OF VISUAL INSPECTIONS AND TESTS

According to some of the S3 MSs, there is a logbook at each of the three or four sections in a zone identifying every piece of equipment in the section. At the end of every day, each maintainer must enter, among other information, his and the signal helpers' names, their shift and the equipment they serviced that day.

The MSs stated that they are not required to record information about visual inspections and tests into the logbook, nor are they required to maintain their own written record of the equipment they inspected or tested.[9] Instead, they are required to enter information about visual inspections and tests they and maintainers completed into a computer at the 14th Street office by the tenth of the month following the inspection and or test.

To access the computer, a MS must enter his personal identification code and a personal password. When the MS has accessed the appropriate computer screen, he inputs the date the equipment was inspected, the pass number of the maintainer who conducted the inspection or test (or his own password if he is entering information about an inspection or test which he conducted) and his zone number.[10] On a separate screen, the MS must enter the sequence

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[6] A flasher is a lamp, which is used to notify oncoming trains that signal workers are on the subway tracks.

[7] Flagging involves waving a lamp (in the case of underground repairs) or the hand (in the case of outside repairs) to inform an oncoming train whether it is safe for the train to proceed.

[8] The maintainers do not conduct this test.

[9] A few MSs maintain their own unofficial record books.

[10] Each MS has a specific number, which represents the zone he supervises.

number of the piece of equipment that was inspected or tested.[11] He also inputs other information including the task code (the type of test conducted), the time, the date and the unit code (the type of equipment). A list of every signal employees' pass number is kept next to the computer.

According to some of the S3 MSs, if an MS fails to log off the computer, it is supposed to automatically shut down after 10 to 20 minutes. However, some MSs said that when they arrive at the 14th Street office, the computer is often already on. When this occurs, the MS need not enter his own password, but rather he is able to input information into the computer under a previous MS's password.

[11] Each piece of equipment has its own unique sequence number.

INVESTIGATION

S3 MSs DID NOT FOLLOW NYC TRANSIT POLICY

MSs are required to follow P/I 11.006.2. As previously noted, the P/I provides signal employees with an "instructional paper" for the type and frequency of visual inspections and tests that are "required" to "ensure the safe and proper operation" of the "Signal Train Control System."

MSs Did Not Conduct Required Track Wire Integrity Tests

The Zone Summary Equipment Testing Report for 1999 (zone summary report) reflects the number of visual inspections and tests each MS is required to conduct during a specific month and provides the number of tests he actually conducted. When a test due during a specific month is not conducted, it is carried over in the system to the next month and will reappear as "due" on the report the next month. Thus the "due" column for monthly reports indicate those visual inspections and tests that come due for the current month and those which are undone from previous months.

The July 2000 zone summary report[12] reflects that the MSs were not conducting the required number of wire integrity tests during 1999. According to the P/I a wire integrity test is an annual test to "detect the presence of improper track circuit track wiring." It is also used to "determine if a track wire has been interchanged with that of another track wire on opposite ends of its own or adjacent track circuit." As previously noted, the wire integrity test is an annual test conducted only by MSs. It was devised specifically in response to a recommendation issued by the National Transportation Safety Board (NTSB) in its Railroad Accident Report following its investigation of a train collision between two NYC Transit trains in March 1989.[13] The purpose of the test is to monitor potential problems with the equipment thereby reducing the possibility of two trains colliding as a result of defective track wiring.

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[12] The zone summary report upon which this office relied was printed in July 2000 and provided by Bowdwin and Pat Lavin, Superintendent, Planning & Control, Division of Signals, NYC Transit. It is referred to as the July 2000 zone summary report.

[13] The collision occurred at the 103rd Street and Broadway subway stop when a passenger train received a "green/clear signal indication" and entered the station even though there was a train stopped at the station. The collision resulted in one "serious" and 40 "minor" injuries. The NTSB determined that the "probable cause" of the accident was the "improper application of a jumper wire in the signal circuit" and that a "contributing cause" was the "failure of NYCTA management to require proper repairs to the signal circuit in a timely manner."

The following is a list of wire integrity tests not conducted on schedule in 1999:

1999 Month[14]	Wire Integrity Tests Not Conducted On Schedule[15]
August	114
September	181
October	181
November	172
December	82

Clearly, this illustrates that MSs did not conduct the wire integrity test on 82 pieces of equipment, meaning there were 82 wires which affect the signals at various S3 locations not tested at all by any Signal employee during 1999.[16]

MSs Did Not Conduct Certain Visual Inspections and Other Required Tests

In addition to the wire integrity test, MSs are required to conduct visual inspections of the signal devices every six months. Further, they are required to perform vital relay tests every two years, track circuit tests every year and roadway element tests every six months.[17]

[14] According to the computer report, all the required integrity tests due between January and July 1999 were conducted on schedule.

[15] The figures in this column, derived from the zone summary report, are ascertained by adding the number of wire integrity tests that were not conducted during the particular month with the number of wire integrity tests not completed during the prior months in 1999.

[16] The Office of System Safety does not receive any reports from Signals regarding the number of overdue visual inspections and tests.

[17] According to the P/I, the vital relay test is a test to "ensure that vital relays in Safety Control Circuits are in proper condition and function as intended"; the track circuit test is conducted to ensure that the "track relays are not over energized," that the "polarity of adjoining track circuits are in accordance with plans" and that the "track circuits are adjusted to shunt at the maximum value"; and, the roadway element (train stop) test is conducted to ensure that "trip arms are in proper alignment with relation to rail for engagement with the trip mechanism on transit cars."

The following information was derived from the July 2000 zone summary report relative to S3.

1999 Month	Number of Visual Inspections and Tests Due[18]	Number of Visual Inspections And Tests Conducted	Percentage of Visual Inspections and Tests Not Conducted
January	471	258	45.2%
February	754	231	69.4%
March	1697	1085	36.1%
April	2313	1778	23.1%
May	1897	1478	22.1%
June	2308	1905	17.5%
July	1339	928	30.7%
August	776	28	96.4%
September	2609	1244	52.3%
October	2414	4	99.8%
November	4086	827	79.8%
December	5539	2510	54.7%

Based upon our review of the July 2000 zone summary report, we found that as of December 31, 1999, 54.7% of the visual inspections and tests that should have been conducted by the MSs had not been completed.

One of the many inspections and tests performed by MSs, and reported above, is the visual inspection.[19] When MSs failed to perform visual inspections on schedule, the computer system continued to monitor the scheduled inspection until it was performed. These unperformed visual inspections were listed as overdue in the computer system. Signals personnel monitor these overdue visual inspections utilizing a report called the Overdue Supervisory Inspection Report (overdue inspection report).

[18] The figures in this column, derived from the zone summary report, are ascertained by adding the number of visual inspections and tests due during the particular month with the number of visual inspections and tests not conducted the prior month.

[19] A visual inspection involves determining whether a signal box is properly mounted, has a broken door, needs to be painted or greased, and whether there is "anything" that could "possibly cause the switch to fail" such as loose nuts and bolts, cracks or an obstruction on the switches.

The following is a list of monthly percentages of overdue visual inspections for 1999, according to the 1999 overdue inspection report:

Month	Percentage of Equipment Not Inspected on Time[20]
January	83.22%
February	86.59%
March	83.53%
April	62.22%
May	46.37%
June	22.52%
July	7.99%
August	8.95%
September	15.82%
October	36.79%
November	52.56%
December	53.06%

The 1999 overdue inspection report reveals that by December 31, 1999, 53.06% of signal equipment remained overdue for visual inspection.

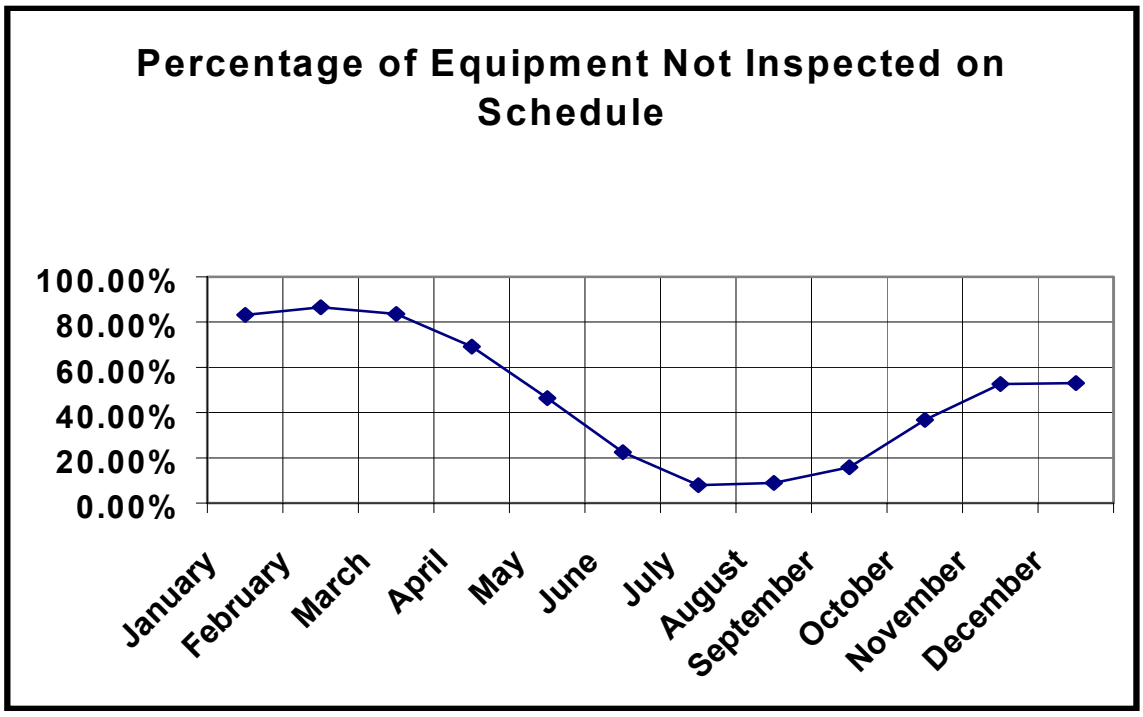
It is noteworthy that between June and September the percentage of overdue visual inspections plummeted. This corresponds to the period originally identified in the complaint. Indeed, the "Signal Equipment Testing Report[s]" dated March 30 (March report), September 30 (September report) and November 8, 1999 (November report) as well as a report that lists the "work performed by employee" from March 30 to September 30, 1999 (work performed report) reflect that four MSs – Hackett, Hymowitz, McQuillan and Walsh -- conducted *only* visual inspections between April and November 1999. Moreover, Walsh and Hymowitz told us that either Doran or Taylor instructed them to conduct only visual inspections.[21] In addition to the above named

[20] This figure, which is reported monthly, represents the percentage of all equipment not yet inspected, including any equipment not inspected within the previous two year period from the date of the report.

[21] McQuillan and Hackett both stated that they were never told to just conduct visual inspections.

individuals, Hollins stated that he was instructed by Doran to conduct only visual inspections but the work performed report reflects that he conducted other tests besides the visual inspections. By instructing at least three MSs to exclusively conduct visual inspections, the unit was able to report that overdue visual inspections decreased to approximately 8% during the summer of 1999. Yet even this purported large decrease is suspect since we found numerous discrepancies in the underlying data.

The following chart highlights the drop in percentage of equipment not timely inspected between June and September 1999:



RECORDS REFLECTING VISUAL INSPECTIONS APPEAR FALSIFIED

Records Often Reflected Performance of Visual Inspections and Tests By MSs On Days When They Were Not At Work

By comparing the September and November Signal Equipment Testing Reports, as well as the work performed report to the MSs' timesheets and payroll records regarding their regular days off (RDO) and other forms of leave, we discovered the computer data reflected that MSs often conducted visual inspections and tests on days when they were not physically present at work. The following is a list of six MSs whose records appear falsified. The list highlights those dates on which computer records indicate that MSs conducted visual inspections and tests while on their RDO or on leave, and it shows the number of visual inspections and tests they purportedly conducted on those days:

	Date	Number of Tests and Visual Inspections[22]
PATRICK HACKETT		
RDO		
Sunday/Monday	July 12, 1999	1[23]
Leave		
Vacation	July 16, 1999	1
DARREN HOLLINS		
RDO		
Friday/Saturday	March 5, 1999	21[24]
Leave		
Vacation	May 30, 1999	40
Holiday	May 31, 1999	43
Sick	June 1, 1999	28
STUART HYMOWITZ		
RDO		
Sunday/Monday	May 9, 1999	16/19[25]
	May 16, 1999	7
	June 28, 1999	11
Leave		
Advanced Vacation Allowance (AVA)[26]	April 7, 1999	2
Vacation	May 6, 1999	28

[22] Unless otherwise noted, the information noted appears on the September and November Signal Equipment Testing Reports and the work performed report.

[23] Only the work performed report reflects that Hackett conducted one visual inspection.

[24] Because the work performed report only lists visual inspections and tests occurring after March 29, 1999, the March 5, 1999 figures only appeared on the November and September reports.

[25] Hymowitz conducted 16 visual inspections and tests according to the November report and 19 according to the work performed report.

[26] Advanced Vacation Allowance (AVA) is accrued time that MSs receive if they work on a holiday. If an employee takes an AVA day they are not present at work on that day.

	Date	Number of Tests and Visual Inspections
MARK MCQUILLAN **RDO** Sunday/Monday	May 16, 1999	9
	June 6, 1999	10
	June 7, 1999	10
	June 21, 1999	4/5[27]
Leave AVA Leave	June 17, 1999	11/20[28]
MICHAEL REKHTMAN **RDO** Friday/Saturday	June 5, 1999	7/9[29]
Leave Sick	March 8, 1999	25
Sick	March 15, 1999	15[30]
Vacation	April 5, 1999	30/31[31]
Vacation	May 17, 1999	26
JIM WALSH **RDO** Saturday/Sunday	May 30, 1999	18
	June 13, 1999	13/14[32]
Leave Vacation	June 14, 1999	11
Vacation	June 29, 1999	22

[27] McQuillan conducted 4 visual inspections and tests according to the September and November reports and 5 inspections and tests according to the work performed report.

[28] McQuillan conducted 11 visual inspections and tests according to the September and November reports and 20 visual inspections and tests according to the work performed report.

[29] Rekhtman conducted 7 visual inspections and tests according to the September and November reports and 9 according to the work performed report.

[30] Since the work performed report reports on visual inspections and tests occurring after March 29, 1999, the March 8th and 15th figures only appeared on the September and November reports.

[31] Rekhtman conducted 30 visual inspections and tests according to the September and November reports and 31 according to the work performed report.

[32] Walsh conducted 13 visual inspections and tests according to the September and November reports and 14 according to the work performed report.

In sum, from January until November 1999, the records of six MSs reflect they conducted visual inspections and tests when, in fact, they were not at work.[33] Furthermore, about 250 of the visual inspections and tests purportedly conducted by these MSs (when they were not present at work) were visual inspections. Therefore, the statistics reported in the overdue inspection report are also suspect.

Of further concern, the computer records reflect that two MSs supposedly conducted wire integrity tests, the test for which MSs are primarily responsible, when they were not at work.

The records relative to those two MSs revealed:

	Date	RDO/Leave	Number of Integrity Tests
DARREN HOLLINS	March 5, 1999	RDO	4
	May 30, 1999	Vacation	10
	May 31, 1999	Holiday	9
MICHAEL REKHTMAN	March 8, 1999	Sick	5
	March 15, 1999	Sick	3
	April 5, 1999	Vacation	6/7[34]
	May 17, 1999	Vacation	5
	June 5, 1999	RDO	2

As illustrated above, the records indicate that Hollins and Rekhtman performed the wire integrity test on 23 and 21 pieces of equipment, respectively, between March and June 1999, though neither was at work to actually perform the test, according to their respective timesheets. Therefore, it appears that the wire integrity test on 44 pieces of equipment was not performed on the dates entered into the computer system and reflected in the reports.

[33] When confronted with this information the six MSs offered either of two explanations. They either said they did not know how the information was entered into the computer or they said that while inputting information they must have "mistaken[ly]" punched the wrong date into the computer. However, the shear volume of erroneous entries tends to render the latter explanation improbable.

[34] Rekhtman conducted 6 wire integrity tests according to the November report and 7 according to the work performed report.

Computer Records Contradict MSs Interview Statements Suggesting That The Computer Records Were Falsified

From fall 1999 through spring 2000, we interviewed every S3 MS. Interestingly, the statements of some seemed to contradict other information relative to their performance of tests and visual inspections. The following is a comparison of the statements of four MSs concerning the number of visual inspections they conducted in 1999 to the work performed computer report for the same period:

MS	Interview Statement	Computer Report
Hollins	He conducted visual inspections and tests in February when he was first promoted. He did not conduct any visual inspections or tests the rest of the year, although he might have conducted some visual inspections.	March – July 267 visual inspections 39 vital relay test 39 track circuit test 19 roadway element (train stop) test 36 wire integrity test
Traverzo	From mid-May to mid-June, he conducted between six and ten visual inspections every day, which amounts to at most 200 visual inspections. --- He did not conduct any visual inspections or tests from July through September.	May 17 –June 17 342 visual inspections and tests. Of the 342 visual inspections and tests, 72 were wire integrity tests. --- July 81 visual inspections
Thompson	During the summer he conducted visual inspections and "some" stop arm tests.[35]	June 18 – August 4 426 visual inspections 126 vital relay tests 126 track circuit test 103 roadway element (train stop) test 124 wire integrity tests
McQuillan	He did not conduct any visual inspections or tests between late May through the end of August.	May 20 – June 21 413 visual inspections

[35] Although the MSs call one test the stop arm test, it is officially referred to as the roadway element (train stop) test.

Thus, four MSs basically said they did not conduct or conducted limited visual inspections or tests during the summer of 1999, while computer reports reflect the contrary.

Computer records reflect that 124 wire integrity tests were conducted by Thompson between June and August 1999, 72 were conducted by Traverzo between May 17 and June 17, 1999, and 36 wire integrity tests were conducted by Hollins between March and July 1999. Yet Thompson, Traverzo and Hollins told us they did not conduct these tests. Without a credible explanation as to why data was entered relative to MSs who did not, in fact, perform certain visual inspections and tests, we are led to conclude that the data was inappropriately entered into the computer.

OPPORTUNITY EXISTED FOR MSs TO MAKE INAPPROPRIATE ENTRIES INTO THE CURRENT COMPUTER SYSTEM

As previously noted, S3 used a computer at the 14th Street office to input all information about visual inspections and tests performed by maintainers and MSs.[36] Often when a MS arrived at the 14th Street office, the computer was already on. Therefore, he could enter information without entering his own password. Rather, he would do so under the password of someone who used the computer prior to him. One MS said there were days when the only person who entered his password into the computer was the first person to use it in the morning, and everyone else piggybacked onto his initial entry screen log during the rest of the day. According to the MSs, the only information that a MS needed to enter when the computer was already on, was the pass number of the employee for whom he was entering information. All the employees' pass numbers, including those of the MSs, were kept next to the computer.

In fact, three MSs and Superintendent Taylor told us that it was not uncommon for MSs to enter information into the computer about maintenance conducted by maintainers in another section, on behalf of other MSs. However, none admitted to falsely entering information.

[36] We were informed by MSs and Bowdwin that NYC Transit is currently installing bar codes on every piece of equipment on the subway tracks. Each maintainer and MS will carry a bar code reader with which that they will first scan their own bar code identification card and then the bar coded piece of equipment they plan to inspect or test. At the end of the day the maintainer or MS will place the device into a "modem" which automatically transmits the information to the computer at the 14th Street office. While the bar code system will allow NYC Transit to determine where the MS, maintainer and helper physically were during a particular day, it will not provide assurance that particular visual inspections or tests were actually conducted on the equipment. The bar code system is supposed to be fully instituted by March 2000.

IT WAS SUGGESTED THAT WORKLOAD FACTORS MADE IT DIFFICULT FOR MAINTAINERS AND MSs TO COMPLETE INSPECTIONS AND TESTS ON TIME

According to Bowdwin and others with whom we spoke, there are few experienced maintainers because the job has a high turnover rate. Also, Bowdwin and Taylor said that even when a maintainer properly conducts an inspection or test, they are unable to "catch everything." Since, a MS "cannot guarantee" by just a visual inspection whether a maintainer has actually conducted a test or inspection or properly conducted the test, the only way to ensure that a piece of equipment is in good working order is for the MS to repeat the same inspection or test on the device.

Bowdwin said that the tests and visual inspections are of "great importance" because the performance of the tests and visual inspections ultimately reduce delays caused by signal trouble. Other MSs and superintendents said, "tests are very important" and, if they are not completed, safety issues arise.

MSs gave the following reasons as to why it was difficult for them to complete required tests and visual inspections:

1) they were assigned to the 14th Street office for their whole tour at times during each month;
2) they must be accompanied by a helper or maintainer while conducting visual inspections and tests;
3) they spend a great deal of time responding to problems on the track;
4) they are often involved in "surveys" or special projects;
5) they must supervise the sections of other MSs on their regular day off (RDO); and,
6) the large turnover of maintainers creates the need for MSs to more closely monitor the maintainers' work.

In fact, Taylor said MSs spend "most" of their days with "new" maintainers, and, therefore, the MSs' job has become "harder and harder." He said as a result of the MSs' workloads, tests and visual inspections of signal equipment fall behind schedule, while they attended to their other duties and assignments.

CONCLUSION

The failure of MSs to conduct required tests on subway equipment and the apparent falsification of inspection and test records raise serious safety issues.

The train lines for which S3 is responsible are potentially in danger of experiencing a train collision, derailment, or serious delays because numerous tests, including wire integrity tests, which should have been performed on signals and signal related equipment were apparently not performed in 1999. Indeed, P/I 11.006.2 was devised to "ensure the safe and proper operation" of the Signal Train Control System. The policy states that maintainers, MSs and superintendents are "responsible" for the "performance of the standard test[s]" listed in the manual.

The July 2000 zone summary report reflects that at the end of 1999, the wire integrity test was not performed on 82 pieces of equipment. Moreover, even though the work performed and November reports state that the MSs had performed the wire integrity test on 276 pieces of equipment,[37] we found that those records are inaccurate because the corresponding MSs were either not at work on the purported inspection day or subsequently informed this office that they did not conduct the test. We conclude that the fact that the wire integrity test had not been conducted on as many as 358 pieces of signal related equipment was a serious safety issue.

We believe safety was potentially jeopardized because numerous visual inspections and tests appear to have been performed only by maintainers in 1999. Indeed, according to the zone summary report for six months in 1999, S3 MSs did not inspect or test over 50% of the equipment scheduled to be inspected and tested. As a result, over 50% of the signal equipment was inspected and tested by maintainers only, who, we were told, did not have the knowledge, expertise or the experience of the MSs.

The MSs stated that they were unable to conduct the required visual inspections and tests because there were too many demands on their workday including the supervision of maintainers who because they were inexperienced needed constant direction.

[37] As previously noted, the computer records reflect that MSs conducted the wire integrity test on 44 pieces of equipment while they were either RDO or on leave. The computer records also indicate that Thompson, Traverzo and Hollins conducted the wire integrity test on 124, 72 and 36 pieces of equipment respectively, even though they stated that they did not conduct these tests. Therefore, contrary to the computer records, the wire integrity test was not conducted on 276 pieces of equipment.

FINDINGS

1. S3 MSs did not follow NYC Transit policy requiring them to conduct certain visual inspections and tests of subway track equipment in 1999, creating a potentially serious safety issue. They did not conduct at least some required wire integrity tests, and many did not conduct any tests or visual inspections for significant periods of time. Some MSs only conducted visual inspections but did not complete other required tests, while others conducted tests behind schedule.

2. The records maintained relative to the performance of required visual inspections and tests appeared falsified. The computer records indicated that MSs conducted visual inspections and tests on days when they were not physically present at work, and the records contradicted statements made by MSs during interviews with the OIG.

3. We found no substantiation for the allegation that Alan Doran or Roger Taylor specifically directed MSs to input false information into the signal inspection and testing computer system regarding the completion of required visual inspections and tests.

RECOMMENDATIONS

In light of our investigation and findings, we make the following recommendations:

1. While President Reuter has assured us that all overdue wire integrity tests will be performed by November 15, 2000, we recommend that from that day forward wire integrity tests be given a higher priority by the MSs and that MSs be instructed to perform all wire integrity tests on schedule.

2. MSs should be instructed to conduct all other assigned visual inspections and tests of signals and signal related equipment on schedule.

3. In light of the MSs' and superintendents' explanations as to why MSs were unable to conduct required visual inspections and tests, NYC Transit should review the workload of S3 MSs to ensure that its current level of staffing meets its workforce needs.

4. Though President Reuter stated that a monthly summary of the Equipment Test Report will be included in Maintenance of Way's Monthly Management Report, we also recommend that System Safety review monthly reports of the number and percentage of overdue visual inspections and tests within the Division of Signals, especially wire integrity tests.

5. Because of the safety implications involved when signal equipment is not inspected, System Safety should provide written notification to the Signal Department of its need to address the problem whenever the number or percentage of completed visual inspections and tests falls below an acceptable level.

6. The current signal inspection and testing computer system or any future system implemented should be strengthened to ensure accountability, including validating data input.