PUBLIC TRANSPORTATION SAFETY BOARD
ABBREVIATED BUS ACCIDENT REPORT

1. CASE#: 8734
3a. ACCIDENT TYPE: Fire
4a. DATE: November 22, 2005
5. ACCIDENT LOCATION: West 57th Street at Sixth Avenue
6. TOWN/CITY/BOROUGH: New York, NY
8. BUS NUMBER: 1874
9. NUMBER OF INJURIES: 0
11. HOURS OF SERVICE: Not related

2. PROPERTY NAME: MTA NYCT
3b. Accident Severity Index: 0.00
4b. TIME: 8:25 a.m.
7. SUMMONS: No
8a. YEAR: 1998 8b. MAKE: MCI DL-3
10. FATALITIES: 0

12. SYNOPSIS:
At approximately 8:25 a.m., MTA New York City Transit (NYCT) bus #1874 was standing at the red traffic signal on W. 57th Street at the intersection with Sixth Avenue when the fire alarm sounded and the fire suppression activated. The bus driver then observed smoke coming from the vicinity of the engine compartment, moved the bus to the curb, shut off the engine and called for assistance. There were no passengers on board the bus. Although there were no flames, the bus driver moved to the rear of the bus with the on-board handheld fire extinguisher and discharged it into the engine compartment to insure that any potential fire was extinguished. The fire department arrived and hosed the engine compartment with water, further insuring that the fire was extinguished. There were no injuries and the bus sustained moderate damage within the engine compartment in the vicinity of the alternator.

The environment played no part in the fire.

Bus #1874 is a 1998 MCI DL-3 over-the-road motorcoach type bus housed and maintained at the Yukon Depot with a seating capacity of 55 passengers. A review of the bus records showed that Preventive Maintenance Inspections are performed at regular 6,000 mile intervals (±500 miles), the most recent was completed on September 28, 2005 and the bus had traveled 5,010 miles since then. A review of the maintenance records showed that the bus’ alternator had been replaced 20 days prior to the fire. A post accident inspection of the bus conducted on November 22, 2005. The inspection found that the P-clamp had worn through the positive DC cable and had shorted to ground. The path to ground being through the bolt securing the P-clamp to the bracket supporting the DC cables and then finally through the bolt securing the supporting bracket to the alternator casing. The short to ground then caused the alternator positive stud to overheat. This, in turn, caused the stud’s insulating material to fail which allowed the alternator lubricating oil to leak out and catch fire. A tear-down of the alternator terminal area showed that the positive DC stud internal insulator was undamaged (cracked) but the o-ring insulators were badly damaged. The inspection also found that the DC stud was also partially melted do the short to ground condition. Due to the fire damage within the engine compartment, no decelerometer tests were performed on the bus braking systems.

The bus driver was hired by the MTA NYCT on October 16, 1995 and completed the New Bus Operator Training Program. A review of the driver’s Department of Motor Vehicles records for the past three years showed one collision accident (transit bus) on June 22, 2005.
NYS Vehicle & Traffic Law, Article 19-A records were reviewed and found to be complete, in-order and up-to-date. A review of the driver’s NYCT accident record for the past three years showed one preventable (02/20/04 – reprimand) and four non-preventable (07/08/03, 07/26/04, 09/15/04, 06/22/05) collision accidents. No post accident drug and alcohol tests were performed on the bus driver.

In an interview the bus driver indicated that he was stopped in traffic at the light on W. 57th Street at the intersection with 6th Avenue when the fire alarm sounded and the on-board fire suppression system went off. The driver stated that he moved the bus to the curb and called for assistance. The bus driver said that a passerby informed him that there was a fire in the engine compartment and he then exited the bus with the on-board hand held fire extinguisher and discharged it into the engine compartment.

The Public Transportation Safety Board (PTSB) staff’s investigation of the fire found that the DC cables are supported and secured to the alternator by P-clamps bolted to a bracket which, in-turn, is bolted to the alternator near the terminal studs. The cable ends are then secured to the terminal studs. The PTSB staff found that many maintainers, including the one who replaced the alternator in this bus were improperly removing only the bolt securing the bracket supporting the P-clamps and DC cables to the alternator and removing the bracket, P-clamps and DC cables as a one piece unit. In addition, the bracket was reinstalled in the same manner. Disassembling and reassembling the bracket assembly in this manner affords the maintainer no opportunity to examine the DC cables located within the P-clamps for chafing or damage could lead to a short to ground and possibly, as in this case, cause a fire.

The PTSB staff finds that the probable cause of this accident was the failure of the maintainer who replaced the alternator to disassemble the P-clamps securing the DC cables to the mounting bracket. By failing to disassemble the P-clamps the PTSB staff finds that the maintainer could not identify the chafed positive DC cable which soon shorted to ground and caused the fire.

The MTA NYCT Department of Buses (DOB) found that the fire was preventable and would most probably not have occurred had the appropriate procedure been utilized when the alternator was changed. Rather than re-train or discipline the maintenance personnel involved in this fire, the MTA NYCT DOB instructed Depot supervisory personnel to retrain all maintainers in the proper procedure of removing the P-clamp and inspecting the condition of the DC cables whenever servicing or repairing an alternator. The MTA NYCT DOB also issued a Maintenance Directive to all maintenance personnel prohibiting the practice of leaving the DC cables inside the P-clamp and bolting it onto a new alternator as an assembly. In addition, The MTA NYCT is considering the feasibility of replacing the metal P-clamps with ones made of nylon.
Based on the actions taken by the MTA New York City Transit regarding this fire the Public Transportation Safety Board staff makes no recommendation in this case.

INVESTIGATOR: Harry W. Gerham

[Signature]

CHIEF, ACCIDENT INVESTIGATION SECTION

[Signature]

DIRECTOR, PCSB, NYSDOT

DATE

1/22/07

DATE

7/22/07