



# MIAMI-DADE TRANSIT'S BUS SECUREMENT

February 10, 2015

# BUS SECUREMENT PROCEDURE

Any time an operator leaves the seat:

- Set the parking brake
- Place the bus in neutral
- Turn the wheel to the curb (where possible)
- Double check that you have set the parking brake

# Door Interlock Operation



## Method 1. Bus Model Years 1999 through 2006

Upon coming to a stop, once the doors are opened, the brake interlock is engaged. Once the doors are closed, the brake interlock **AUTOMATICALLY** disengages and the bus is able to move.

## Method 2. Bus Model Years 2009 to Present

Upon coming to a stop, once the doors are opened, the brake interlock is engaged. Once the doors are closed, the brakes **MUST BE APPLIED** in order for the brake interlock to disengage and allow the bus to move.

# FACTS RELATING TO MDT BUS FLEET

- MDT's fleet is comprised of 815 active buses.
- 391 are not equipped with seat alarms. (Buses purchased between 1999 – 2003)  
Technology not available
- 344 buses are equipped with seat alarms (Buses purchased between 2004 -2006)
- 73 buses are equipped with seat alarms and a new computer program that prevents failure to secure accidents. (Buses purchased between 2009 – 2014)
- Seat alarms are not a required item on the transit fleet.

	1999 -2003	2004 – 2006	2009 - present
Total	391	344	73
Alarm		√	√
Method 1		√	
Method 2			√

# SEAT ALARM

A WARNING DEVICE TO ALERT OPERATORS WHEN THEY FAIL TO FOLLOW PROCEDURES IN SETTING THE PARKING BRAKE BEFORE LEAVING THE DRIVERS' SEAT.

Seat Alarm Sensor and Module



Seat Alarm Wiring



# ADDITIONAL EFFORTS TO PREVENT FAILURE TO SECURE ACCIDENTS

- In December 2007 MDT began adding over 1600 yellow stickers to the bus fleet on the inside of the operators' window to remind them to "APPLY PARKING BRAKE BEFORE LEAVING SEAT, BEFORE CLOSING DOOR HANDLE, BEFORE RELEASING AIR"

## **WARNING !**

### **APPLY PARKING BRAKE**

- **BEFORE LEAVING SEAT**
  - **BEFORE CLOSING DOOR HANDLE**
  - **BEFORE RELEASING DOOR AIR**
- Bulletin S-1422 – have been reissued on several occasions as a reminder to operators.
  - Bulletin S-1555 issued and posted on December 18, 2014.

# WHY ARE SEAT ALARMS NOT WORKING?

- ▶ Seat alarms wires have been disconnected.
- ▶ Sensor Alarm Pads failed: Failure can cause the system to not alarm at all or cause alarm to engage when an operator is in the seat.
- ▶ Modules were shorted out.
- ▶ Water intrusion causes corrosion into the harness wires and modules.

## Findings of surveys:

### December 10, 2014

424 Buses equipped with alarms

371 Inoperable (256 have been disconnected)

53 Operable

12.5% operable

### February 6, 2015

424 Buses Equipped with Alarms

264 Inoperable

161 Operable

38% operable

# INVESTIGATION OF PM INSPECTIONS

- ▶ Technicians were reporting that seat alarms were working when they performed the PM, however, a survey conducted on December 6, 2014 discovered the majority of the seat alarms were in fact not working
- ▶ 35 Preventive Maintenance (PM) Inspections for buses that were equipped with seat alarms, were checked from 12-6-14 through 12-9-14.
  - ▶ 28 Technicians reported that they were working but they were not.
  - ▶ Only 7 Technicians reported correctly that the system was either not working or working.

As a result, management was not aware of the issues with seat alarms.

# MDT TRAINING TO PREVENT FAILURE TO SECURE ACCIDENTS

- ▶ New Hire Training
- ▶ Commercial Drivers License (CDL) Training
- ▶ Quick Training is done with bus operators as they report to work and before they are assigned to perform a bus route.
- ▶ Mandatory Instructional Class Training: Conducted twice annually with all bus operators (approximately every 6 months). During this 2 hour class, defensive driving and the failure to secure accident prevention procedure is addressed.
- ▶ Defensive Driver Training/Customer Service weekly class; specific operators are selected weekly for this intensive 8 hour course to avoid accidents or better handle customer issues. Failure to secure topic is included. This training has been conducted for the past 9 years and approximately 350 operators are trained annually.
- ▶ Rule of the Week postings: MDT Bus Operations has posted this topic periodically since 2007.
- ▶ Retrainings: Conducted after each accident that is graded preventable.

# FACTS RELATING TO PM INSPECTIONS

- ▶ Every bus in revenue service goes through PM Program.
- ▶ PM Inspections are performed every 3000 (type O) and 6000 (type A) miles.
- ▶ Seat Alarms inspections are included in the 6000 mile preventive maintenance every six weeks.
- ▶ There are 180 line items with over 390 tasks on the 6000 mile PM Inspection check list in which seat alarms are one of the items.

# CORRECTIVE ACTIONS

- ▶ Working with bus manufacturers to implement the computer program that prevents failure secure accidents to the older bus fleet. Test are underway and will be conducted for the various bus types and model years.
- ▶ We are requiring supervisors to perform a few additional quality checks on all buses that are released from Bus Maintenance for revenue service which include the seat alarm.
- ▶ Increased inspection points for quality checks performed by supervisors on the PM's to include the seat alarms which previously did not.
- ▶ Other MDT staff outside of Bus Maintenance will perform random quality checks on the PM's.
- ▶ Any employee found disabling the seat alarm system will face the appropriate administrative action in accordance with AO 7-3.