

FEDERAL TRANSIT BUS TEST

Performed for the Federal Transit Administration U.S. DOT
In accordance with 49 CFR, Part 665

Altoona Bus Testing and Research Center Test Bus Procedure

1.2 SERVICING, PREVENTATIVE MAINTENANCE, AND REPAIR AND MAINTENANCE DURING TESTING

Pass/Fail
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**LTI BUS RESEARCH
AND TESTING CENTER**

ABBREVIATIONS

ABTC	Altoona Bus Test Center
A/C	Air Conditioner
ADB	Advance design bus
CBD	Central business district
CI	Compression ignition
CNG	Compressed natural gas
CW	Curb weight (bus weight including maximum fuel, oil, and coolant; but without passengers or driver)
dB(A)	Decibels with reference to 0.0002 microbar as measured on the “A” scale
DIR	Test director
DR	Bus driver
EPA	Environmental Protection Agency
FFS	Free floor space (floor area available to standees, excluding ingress/egress areas, area under seats, area occupied by feet of seated passengers, and the vestibule area)
FTA	Federal Transit Administration
GAWR	Gross axle weight rating
GL	Gross load (150 lb. for every designed passenger seating position, for the driver, and for each 1.5 sq. ft. of free floor space)
GVW	Gross vehicle weight (curb weight plus gross vehicle load)
GVWR	Gross vehicle weight rating
hr.	Hour
LNG	Liquefied natural gas
LTI	Larson Transportation Institute
mpg	Miles per gallon
mph	Miles per hour
NBM	New bus models
PSTT	Penn State Test Track
rpm	Revolutions per minute
SAE	Society of Automotive Engineers
SCF	Standard cubic feet
SCFM	Standard cubic feet per minute
SCH	Test scheduler
SA	Staff Assistant
SI	Spark ignition
SLW	Seated load weight (curb weight plus 150 lb. for every designated passenger seating position and for the driver)
TD	Test driver
TM	Track manager
TP	Test personnel

1.2-I. TEST OBJECTIVE

The objective of this test is to collect maintenance data about the servicing, preventative maintenance, and repair.

1.2-II. TEST DESCRIPTION

The test will be conducted by operating the bus during the testing period and collecting the following data on Repair Order Forms and Driver Log.

1. Bus number
2. Date
3. Mileage
4. Detailed description of malfunction
5. Repair action and parts used
6. Man-hours required

The bus will be operated in durability service. While typical items are given below, the specific service schedule will be that specified by the manufacturer.

- A. Service
 1. Fueling
 2. Consumable checks
 3. Interior cleaning
- B. Preventative Maintenance
 1. Brake adjustments
 2. Lubrication
 3. Oil and filter change
- C. Periodic Repairs
 1. Brake reline
 2. Transmission change
 3. Engine change
 4. Windshield wiper motor change
 5. Stoplight bulb change

1.2-III. TEST ARTICLE

The test article is a transit bus with a minimum service life of 4, 5, 7, 10 or 12 years.

1.2-IV. TEST EQUIPMENT/FACILITIES/PERSONNEL

Test equipment and facilities at ABTC are used for this test. In addition, any maintenance performed at PSTT will be added to the maintenance log. Test personnel include:

1. Test personnel (TP)
2. Bus driver (DR)

1.2-V. TEST DATA

The test data consists of the Repair Order Forms for all scheduled and unscheduled maintenance and repair and the Driver Log. All forms must be completed in pen. Upon completion of this test, data shall be forwarded to the ABTC manager.

1.2-VI. TEST PREPARATION AND PROCEDURES

The detailed procedures are listed in Procedure 1.2-1.

DETAILED TEST PROCEDURES		TITLE: 1. Maintainability
Procedure 1.2-1	NOMENCLATURE: 1.2 Servicing, Preventative Maintenance, and Repair and Maintenance During Testing	
OPER STEP	ACTION BY	TEST PREPARATION AND PROCEDURE
1	TP	Use pen on all forms.
2	TP	Perform all service and maintenance according to the manufacturer's recommended procedures.
3	TP	Complete Repair Order Forms for all servicing, preventative maintenance and repair, and maintenance during testing. Be sure all forms are filled out completely. Provide a detailed description of the failure and repair. In particular, record the parts that are repaired or replaced and the bus mileage at the time of failure. In addition, record diagnostic time, repair time, special tools required, and date.
4	DR	Keep a daily log of all bus activity. In particular, record all bus malfunctions, the date, and the bus mileage at the time of failure. Listen for unusual noises. Record comments on Driver's Log.
5	DR/TP	Note any bus part that is removed from service for an extended period of time for repair or replacement. Attach a tag to any parts that are removed. The tag must include the bus number, date and mileage. Paint pen may be used to tag large parts.
6	TP	Photograph broken or worn parts and any other failures. If new part is available, photograph new and failed parts side by side.
7	TP	File completed test procedures and Repair Order Forms.

