Servicing your vehicles as they age, what to look for and what to expect. 
October 9th, 2018

Community Mobility
Local Programs
Minibus Support
Welcome

• Opening remarks/Introductions
• Workshop format
• Rules of engagement
Introductions

• Minibus Support
  – Lea Sheridan, Manager, 973-491-8043, lsheridan@njtransit.com
  – Christopher Uffer, Warranty Administrator, 973-491-7986, cuffer@njtransit.com
  – Lisa Veloz, Quality Assurance Specialist (Bergen, Essex, Hudson, Morris, Passaic, Somerset, Union), 973-491-8018, lveloz@njtransit.com
  – William Veniscofski, Quality Assurance Specialist (Atlantic, Burlington, Camden, Cape May, Cumberland, Gloucester, Hunterdon, Mercer, Middlesex, Monmouth, Ocean, Salem, Sussex, Warren), 973-491-7368, wveniscofski@njtransit.com
Introductions

• Your Name
• Your Agency
• What type of vehicles do you maintain?
• What do you expect to get out of this workshop?
Asset Management

• S-RIDES – Quarterly Maintenance
  – Actual Miles driven this quarter
  – Service Miles
  – Odometer
  – Days out of Service
  – PM Performed: Date, Miles at time of service, Vendor, Oil, Filters, Lube, Chassis and Suspension, Tires, Brake System, Alignment, Lift/Ramp, Lift Counter
  – Other Maintenance: Date, Miles at time of service, Vendor, Transmission, Cooling/Heating System, Exhaust, Tune-Up
  – Other Details: Date Miles at time of service, Vendor, Damage/Accidents, Warranty, Other PM
  – Attachments
Asset Management

• Maintenance
  – Preventative Maintenance Plans (PMPs) should conform to manufacturer’s recommended guidelines
  – Recommend separate PMPs for each type of vehicle
  – Annual audit to verify that preventative maintenance is being performed as per your PMP; audit review includes pre-trip inspections
Asset Management

• Warranty
  – Chris Uffer, Warranty Administrator
    (973) 491-7986
    CUFFER@NJTRANSIT.COM
  - No modifications can be made to the vehicles that would void the warranty
  - For all warranty claims, send completed warranty form to Chris Uffer within 48 hours of issue
Asset Management

• Disposal
  – All grant awarded vehicles have federal interest until they have met their useful life either be years or miles, or their value is under $5,000.
  – NJT identifies vehicles ready for retirement and processes the End of Lease Agreements and release the lien on the title
    • Minivans – 4 years or 100,000 miles
    • Minibuses – 5 years or 150,000 miles
    • Medium Duty – 7 years or 200,000 miles
  – Any vehicles taken out of service prior to the useful life requirement will require reimbursement to the grant
FTA PM Compliance

FTA allows recipients discretion in determining the appropriate intervals for preventative maintenance inspections to accommodate such things as specific manufacturer recommendations, vehicle/vessel age, unique site and operating conditions, etc. FTA expects recipients to follow their program for preventative maintenance but understands that circumstances may prevent inspections being completed exactly at the interval specified. To account for this, FTA allows a 10 percent deviation from the scheduled interval as being considered on time. Review the sample preventive maintenance history to determine if fewer than 80 percent of the inspections for any mode or operation occurred on time.
Maintenance Intervals

• Minivan – 5,000 Miles maximum

• Cutaway – 5,000 Miles maximum

• Medium Duty – 6,000 Miles maximum
Dodge Caravan - Braun

MAINTENANCE

5,000 miles or 6 month Intervals

Please check off interval below & fill out dealer log at each service interval.

Perform specified inspection, maintenance & lubrication procedures

- Inspect ramp access door system operation & alignment. Clean & lube system
- Inspect ramp system operation
  Clean & lube system
- Inspect kneel system operation
  Clean & lube system (if applicable)
- Inspect electronic control system for current software (if applicable)

- Inspect undercarriage & ground effects
- Inspect & maintain wheelchair tiedowns & occupant restraints
- 30,000 mile or 3 year Intervals: Perform specified maintenance & service procedures
Dodge Caravan - Braun

30,000 miles or 3 year Intervals

Perform specified maintenance & service procedures (as applicable)

- Door Rollers (if applicable): Inspect & replace as necessary
- Kneel Chain (if applicable): Inspect & replace as necessary
- Foldout Ramp Chain (if applicable): Inspect & replace as necessary
- *Infloor Ramp Belt & Rollers (if applicable): Inspect & replace as necessary

5,000 or 6 month Intervals: Perform specified inspection, maintenance & lubrication procedures.

*Infloor ramp motor & drive components are accessible only by removing the top cover. Refer to applicable service manual.

Please check off interval below & fill out dealer log at each service interval.
Scheduled Maintenance

SPECIAL OPERATING CONDITIONS SCHEDULED MAINTENANCE

If you operate your vehicle **primarily** in any of the following conditions, you need to perform extra maintenance as indicated. If you operate your vehicle **occasionally** under any of these conditions, it is not necessary to perform the extra maintenance. For specific recommendations, see your dealership service advisor or technician.

Perform the services shown in the following tables when specified or within 3000 miles (4800 kilometers) of the message appearing in your information display prompting you to change your oil.

- **Example 1:** The message comes on at 28751 miles (46270 kilometers). Perform the 30000-mile (48000-kilometer) automatic transmission fluid replacement.
- **Example 2:** The message has **not** come on, but the odometer reads 30000 miles (48000 kilometers) (for example, the Intelligent Oil-Life Monitor was reset at 25000 miles [40000 kilometers]). Perform the engine air filter replacement.

<table>
<thead>
<tr>
<th>Towing a trailer or using a car-top carrier</th>
</tr>
</thead>
<tbody>
<tr>
<td>As required</td>
</tr>
<tr>
<td>Inspect frequently, service as required</td>
</tr>
<tr>
<td>Every 22500 miles (36000 km)</td>
</tr>
<tr>
<td>Every 30000 miles (48000 km)</td>
</tr>
<tr>
<td>Every 60000 miles (96000 km)</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>
Ford E-Series Gas v10

<table>
<thead>
<tr>
<th>Other maintenance items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Every 30000 miles (48000 km)</td>
</tr>
<tr>
<td>Every 60000 miles (96000 km)</td>
</tr>
<tr>
<td>Every 97500 miles (156000 km)</td>
</tr>
</tbody>
</table>

Scheduled Maintenance

<table>
<thead>
<tr>
<th>Other maintenance items</th>
</tr>
</thead>
</table>
| Every 105000 miles (168000 km) | Change engine coolant.*
  | Inspect accessory drive belt(s).** |
| Every 150000 miles (240000 km) | Change automatic transmission fluid.
  | Change automatic transmission filter.***
  | Replace accessory drive belt(s) if not replaced within the last 100000 miles (160000 km).
  | Replace front wheel bearings and seals if non-sealed bearings are used. |

* Initial replacement at six years or 105000 miles (168000 kilometers), then every three years or 45000 miles (72000 kilometers).
** If not replaced, inspect every 15000 miles (240000 kilometers).
*** 6-Speed Transmission only.
# Freightliner Medium Duty

## Freightliner S2C Business Class Chassis

### Table 3: Oil Drain Interval

<table>
<thead>
<tr>
<th>Shuttle or Transit Bus</th>
<th>Kilometers</th>
<th>Miles</th>
<th>Hours</th>
<th>Months</th>
<th>Kilometers</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 to 6 mph average</td>
<td>4850</td>
<td>3000</td>
<td>500</td>
<td>12</td>
<td>6450</td>
</tr>
<tr>
<td>6 to 8 mph average</td>
<td>6450</td>
<td>4000</td>
<td>500</td>
<td>12</td>
<td>9000</td>
</tr>
<tr>
<td>8 to 10 mph average</td>
<td>9650</td>
<td>6000</td>
<td>500</td>
<td>12</td>
<td>12,500</td>
</tr>
</tbody>
</table>

With 14.2 liter [15 qt] oil pan¹
Braun Century 2 Lift

Lift Terminology

- Pump Module (Rear)
- Hand-Held Pendant Control
- Visual Threshold Warning
- Audible Threshold Warning (not visible)
- Lift-Tite Latches (2)
- Towers (2)
- Top Parallel Arms (2)
- Main Cylinders (2)
- Adjustable Quiet-Ride Stay Blocks (2)
- Untold Assist Compression Springs (2)
- Platform Lights (2)
- Vertical Arm Covers (4)
- Handrails (2)
- Opposite Pump Side Vertical Arm
- Inner Roll Stop
- Threshold Warning Plate
- Blade Plate
- Bottom Parallel Arms (2)
- Saddle (2)
- Inner Fold Arm (2)
- Outer Fold Arm (2)
- Pump Side Vertical Arm
- Platform Side Plates (2)
- Outer Barrier Latch
- Outboard
- Right
- Left
- Inboard
**GENERAL INSPECTION:**
- Lift Battery, Circuit Breaker & Cable
- Lift Ground & Secondary Ground
- Vehicle Interlock Power
- Veh. Interlock Prohibits Veh. Movement
- Lift Door Condition
- Hand Panty Condition/Function
- Inspect Mounting Components

**CYCLE CHECK:**
- General Operation Through Complete Cycle
- Main, Handrail, OB & IB Bumper Adjustments
- Floor Level Adjustment
- Platform Angle Adjustment
- Outer Barrier Interlock
- Inner Barrier Interlock
- Threshold Warning Interlock
- 90 Pound Load Interlock
- Platform Lights
- Anti-Skid
- Operation & Warning Decals
- Backup Pump Handle Location
- Manual Override/Backup System Function

**MECHANICAL COMPONENTS:**
- Base Plate, Tower, Arm & Platform Welds
- Outer Barrier Pins, Gas Springs & Fasteners
- Inner Barrier Pins, Gas Springs & Fasteners
- Pivot Pin Fasteners
- Pivot Pins & Bushing Conditions
- Handrails
- Lift/Tilt System

**HYDRAULIC COMPONENT CHECKS:**
- Leaks
- Hoses & Harness Routing/Condition (pump, parallel arms, vertical arms & platform)
- Remove Pump Cover & Check Fluid Level
- Fluid Condition
- Lift Pump Motor/Cables/Connections
- Lift Pump Harnesses/Pipes/Electrical Components

**Additional Comments:**
Maintenance and Lubrication Schedule

Proper maintenance is necessary to ensure safe, troublefree operation. Inspecting the lift for any wear, damage or other abnormal conditions should be a part of the transit agency daily service program. Simple inspections can detect potential problems.

The maintenance and lubrication procedures specified in this schedule must be performed by a Braun authorized service representative at the scheduled intervals according to the number of cycles.

Braun dual parallel arm lifts are equipped with hardened pins and self-lubricating bushings to decrease wear, provide smooth operation and extend the service life of the lift.

When servicing the lift at the recommended intervals, inspection and lubrication procedures specified in the previous sections should be repeated. Clean components and the surrounding area before applying lubricants. LPS2 General Purpose Penetrating Oil is recommended where Light Oil is called out. Use of improper lubricants can attract dirt or other contaminants which could result in wear or damage to the components. Platform components exposed to contaminants when lowered to the ground may require extra attention.

Lift components requiring grease are lubricated during assembly procedures. When these components are replaced, grease must be applied during installation procedures. Specified lubricants are available from The Braun Corporation (part numbers provided on previous page).

All listed inspection, lubrication and maintenance procedures should be repeated at 750 cycle intervals following the scheduled 4500 cycle maintenance procedures. These intervals are a general guideline for scheduling maintenance procedures and will vary according to lift use and conditions. Lifts exposed to severe conditions (weather, environment, contamination, heavy usage, etc.) may require inspection and maintenance procedures to be performed more often than specified.

Cycle Counter: NCL-2 Series lift models are equipped with a cycle counter located on the top of the pump module. This cycle counter allows the lift attendant/operator to easily track the number of cycles during daily inspections of the lift.

Discontinue lift use immediately if maintenance and lubrication procedures are not properly performed, or if there is any sign of wear, damage or improper operation. Contact your sales representative or call The Braun Corporation. One of our national Product Support representatives will direct you to an authorized service technician who will inspect your lift.
Seasonal Maintenance

- HVAC (Heater valves, condensers, drain tubes)
- Securement straps/belts
- Floor tracks
- Window & door seals
- Emergency exits including roof hatch
# SAMPLE VEHICLE DAILY PRE-TRIP INSPECTION REPORT

**Transit system:**

**Vehicle #:**

**Odometer Reading:**

**Date:**

**Time:**

☐ am  ☐ pm

**Signature of Driver:**

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All items must be inspected prior to departure each day. If an item is damaged or requires maintenance, please an “X” on the line next to the item and provide a brief description of the defect. If an item is not applicable to your vehicle, please “N/A” on the line.

## ENGINE INSPECTION/UNDER HOOD

- Oil Level
- Coolant Level \( [\text{cold}] \)
- Windshield Washer Fluid Level
- Brake Fluid Level
- Engine / Hoses / Belts
- Battery Fluid / Connection

## EXTERIOR INSPECTION

- Leaks under Bus
- Fresh Body Damage
- Cleanliness
- Doors
- Headlights
- Tail / Brake Lights
- Turn Signal Lights
- Hazard Flashers
- Clearance Lights
- Tires / Wheels / Suspension
- Tailpipe
- Battery Box (closed)
- Windshield
- Windshield Wipers
- Radios Antennas
- Mirrors / Adjustment
- Reflectors

## SAFETY EQUIPMENT

- Fire Extinguisher
- First Aid Kit (complete)
- Bio-Hazard / Bloodborne Pathogens / Spill Kit
- Triangles
- Back-up Alarm
- Door Open Buzzer
- Emergency Windows (latched)
- Emergency Door
- Emergency Escape Hatch
- Seat Belt Cutter
- Extra Fuses
- Two-way Radio
- Spare Tire / Jack / Lug Wrench

## INTERIOR

- Mirrors / Adjustment
- Lights
- Service Door(s)
- Stepwell(s)
- Floor
- Seats
- Seat Belts
- Brakes (foot / Parking)
- Steering
- Transmission

## INTERIOR (continued)

- Gauges / Instrument Displays
- Equipment Controls (Heater / AC / Fan / Lights / Defrosters / Wipers)
- Radio
- Radios Check with Base
- Horn
- Registration / Insurance
- Transmission Selector
- Signage / Decals
- Cleanliness

## ACCESSIBILITY EQUIPMENT

- Lift Cycle Count:
  - Lift Door
  - Lift Operation (perform one cycle)
  - Lift deploys only when parking brake set and/or transmission in park
- Lift Smooth movement
- Lift works at proper speed
- Hydraulic Leaks
- Lift Platform is level during entire operation
- Lift smoothly clears door frame and opened door
- Lift light operates
- No physical damage to lift
- Electric wires not cut, frayed, corroded or torn
- Lift switches operate properly
- Lift hand pump operates properly
- Lift hoses / fittings secure
- Lift cables / belts / chains
- Lift Front / Rear Safety Guards
- Lift Handrails
- Lift Alarms
- Securement Attachment Points
- Securement Straps
- Passenger belts

## REMARKS

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**Condition of above vehicle is:**

☐ Satisfactory  ☐ Unsatisfactory

☐ Above defects corrected

☐ Above defects need to be corrected for safe operation of vehicle

**Mechanic’s Signature:**
Intermotive Interlock
Pop quiz

• What percent deviation does FTA allow on maintenance?
Pop quiz

• At how many hours do freightliners require maintenance?
Pop quiz

• How many cycles initiate the first service on a Century 2 lift?
Ask the vendors

• Do you have any questions for the vendors about their products?