

# Chapter 7

## Maintenance

### NOTES

#### Chapter 7 Overview

- ✓ Outlines **maintenance procedures** required of transit providers.
- ✓ Describes **Americans with Disabilities Act accessibility** provisions.
- ✓ Specifies **wheelchair lift** and **ramp requirements**.

#### A. Equipment Maintenance and Management Procedures

- ◆ Recipients of federal funds agree to maintain property and equipment in good operating order, and in compliance with any guidelines, directives or regulations that FTA may issue.
- ◆ KDOT personnel annually inspect equipment purchased with funds from or used in the operation of Section 5310 or 5311 programs. Inspection reports provide information for the agency and the CTD concerning needed maintenance of the equipment while also indicating whether the vehicle is being properly maintained. These reports become part of the permanent project file. Subrecipients should be aware that maintenance reports might influence subsequent funding decisions.
- ◆ Proper vehicle maintenance procedures are discussed when the vehicle is first delivered as well as during on-site KDOT monitoring. For technical assistance with maintenance concerns, contact your CTD coordinator or KDOT.
- ◆ ***Vehicle Preventative Maintenance***  
Being able to spot potential vehicle problems can prevent roadside breakdowns. Daily pre-trip inspections are good preventative maintenance measures and reduce inconveniences for employees and passengers. Table 7.1 on the following page outlines the procedures for a pre-trip inspection. All drivers and maintenance personnel should be familiar with these procedures to reduce vehicle breakdowns.

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**Table 7.1: Pre-Trip Vehicle Inspection Procedures for Preventative Maintenance**

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*Any maintenance problems should be reported immediately.*

- ❑ ***Exterior Inspection***
    - ❑ Walk around the vehicle to inspect the body for damages.
    - ❑ Look underneath the vehicle. Inspect the ground for leaks and the undercarriage for loose parts.
    - ❑ Start the engine. Turn on the headlights and the four-way flashers. Check to see that the dash lights are on and both the high and low beam headlights are working properly.
    - ❑ Check the condition of all tires including the spare. Look for cracks, bubbles or nicks in the tire and measure the tread depth and pressure of the tires. The amount of air that should be in the tire is listed on the side walls of the tire.
  - ❑ ***Under the Hood Inspection***
    - ❑ Turn off the engine.
    - ❑ Inspect the battery. Check the fluid levels, look for loose cable connectors, and look for corrosion on the post connectors.
    - ❑ Examine the belts. Twist the belts and look for cracks and excess wear. When pushed in the middle between pulleys, a belt should not compress more than one-half inch.
    - ❑ Examine the hoses. If any hose appears spongy, hard to squeeze, brittle or has cracks in it, it should be replaced or repaired.
    - ❑ Measure fluid levels. Make sure that the radiator fluid, oil, power steering and windshield washer fluid reservoirs are full. Check the transmission fluid when the vehicle is warm.
  - ❑ ***Interior Inspection***
    - ❑ Check inside the vehicle for loose objects and cleanliness.
    - ❑ Make sure that the seatbelts and safety restraints are available and functioning.
    - ❑ Inventory all equipment to ensure that it is in place and functional.
    - ❑ Cycle the wheelchair lift. Pay special attention to the wheelchair securement system and how it operates. Double check safety barriers and make sure that they are in place and fully functional.
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### **B. Maintenance Requirements for Accessibility Features and Lifts**

- ◆ ***Americans with Disabilities Accessibility Overview***
  - ✓ Signed into law in 1990, the Americans with Disabilities Act (ADA) makes it illegal for public or private entities to discriminate against persons with disabilities regarding employment, public services and public accommodations.
  - ✓ The intent of ADA is to provide equal opportunity to those with disabilities, allowing them to fully participate in society, live

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- independently and with economic self-sufficiency.
- ✓ All public and private entities providing transportation services must be in compliance with the ADA accessibility requirements, providing accessibility features, lifts and ramps on vehicles and at transit facilities. ADA legislation is discussed briefly in Chapter 1.
- ✓ An agency may protect itself from potential litigation if it develops a policy that is friendly to individuals with disabilities. If the policy stresses interaction and compromise, the agency may be able to build a relationship with the disabled community and meet the transportation needs of these groups.
- ✓ Table 7.2 outlines specific provider responsibilities for ensuring ADA compliance.

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### **Table 7.2 Provider Responsibilities under ADA**

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- ✓ The service provider is responsible for accommodating individuals with disabilities. To meet ADA requirements, transit providers must maintain features that make the vehicles and facilities readily accessible to individuals with disabilities. ADA compliance is also a component in the KDOT annual inspection and may be a factor in continued or future financial support.
  - ✓ ADA does not provide any additional funding to meet accessibility requirements, although it is recognized that substantial costs may be associated with compliance. In special cases of severe financial hardship, exceptions may be granted.
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- ✓ ***Preventative Maintenance for Accessibility Features***

The subrecipient must perform regular and frequent maintenance checks of lifts. Proper preventative maintenance may reduce unscheduled lift repairs, operation down time, and may increase the life of the lift. The preventative maintenance procedures outlined here provide general guidelines. Regular maintenance procedures can be found in the instruction manual provided with the lift.

*Table 7.3 on the following page outlines ADA maintenance requirements for wheelchair lifts. Table 7.4 provides pre-trip inspection steps for wheelchair lifts.*

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**Table 7.3: ADA Maintenance Requirements for Wheelchair Lifts**

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- ✓ Establish a system of regular and frequent maintenance checks of lifts sufficient to determine if they are operating appropriately.
  - ✓ Ensure that the vehicle operator report to the entity, by the most immediate means available, any failure of a lift to operate in service.
  - ✓ When a lift fails to operate appropriately, the vehicle must be taken out of service before the beginning of the next service day and the lift must be repaired before the vehicle returns to service. If there is an in-service failure, the vehicle may finish the remainder of the service day as long as appropriate safety precautions are met.
  - ✓ If no spare vehicle exists to take the place of a vehicle with an inoperable lift, the provider may keep the vehicle in service with an inoperable lift for no more than five days (if the provider serves an area of 50,000 or less population) or three days (if the provider serves an area of over 50,000) from the day on which the lift is discovered to be inoperative.
  - ✓ In fixed-route services, if a vehicle experiences an in-service failure with more than 30 minutes to the next accessible vehicle, the agency must promptly provide alternative transportation to individuals with disabilities who are unable to use the vehicle due to the lift failure.
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**Table 7.4: Pre-Trip Inspections for Wheelchair Lifts**

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- ✓ **Visual inspection of the lift.**  
Check hoses, wires, chains and bolts for wear, damage and misalignment.
  - ✓ **Pre-trip cycle.**  
Run the lift through one complete cycle to ensure safe and smooth operation. Also, check the lift's power source to ensure that adequate power is provided on a daily basis.
  - ✓ A Daily Maintenance Checklist for Wheelchair Lifts is provided as an attachment.
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- ✓ ***Certificates of Assurance***  
Subrecipients must sign certificates assuring that ADA requirements have been met and that accessibility features are being maintained.
- ✓ ***Service Guarantee***  
A provider may not refuse service because the mobility device cannot be secured or restrained satisfactorily by the securement system. The provider may request or recommend that the user transfer to a vehicle seat during the trip, but it may not require this of users. Provider personnel are permitted to assist with the use of the

accessibility equipment and the securement devices even if the driver must leave his or her seat.

- ◆ *Table 7.5 outlines the major ADA accessibility requirements for wheelchair lifts and ramps.*

**Table 7.5: Wheelchair Lifts and Ramps Accessibility Requirements**

Accessibility Feature	Major ADA Requirements
<b>Wheelchair Lifts</b>	<ul style="list-style-type: none"> <li>◆ A lift must be able to lift a minimum of 600 pounds.</li> <li>◆ A lift must also be able to accommodate individuals who use walkers, crutches, canes, braces or who have difficulties using steps.</li> <li>◆ The equipment must also permit inboarding and outboarding individuals with wheelchairs and other mobility aids.</li> <li>◆ The platform must be equipped with handrails on two sides, which move with the lift to provide support to standees throughout the lift operations.</li> <li>◆ A vehicle with a lift must have lift controls that are interlocked with the vehicle brakes, transmission, door or other devices.</li> <li>◆ A ramp must be able to support 600 pounds if it is 30 inches or longer, or it must be able to accommodate 300 pounds if it is less than 30 inches long.</li> </ul>
<b>Ramps</b>	<ul style="list-style-type: none"> <li>◆ The maximum slope of the ramp is a ratio of 1:4, if the floor height is three inches or less above a six-inch curb. If the floor height is between three and six inches above a six-inch curb, the maximum slope of the ramp is 1:6. When the floor height is between six and nine inches above a six-inch curb, the maximum slope of the ramp is 1:8. Any floor height greater than nine inches may have a maximum slope of 1:12.</li> </ul>

- ◆ ***Certified Lift Dealers***

Two manufacturers of lifts have supplied all equipment for Kansas-purchased vehicles in the past several years. The following is a list of suppliers. If your agency has another brand of lift and you are unable to identify a local dealer for repairs, call the Kansas RTAP Center at 1-800-248-0350 for assistance.

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- *Ricon Dealers*
  - 1) Tenth Street Medical  
1710 W. 10<sup>th</sup> Street  
Topeka, Kansas 66604-1334  
785-234-3322
  - 2) Handicap Conversions  
2516 W. Pennway  
Kansas City, MO 64108-2413  
816-471-0305
  - 3) Stratus Specialty Vehicle  
12600 N. Woodland Ave  
Kansas City, MO 64165  
800-821-5454
- *Braun Dealers*

The Braun Corporation prefers that providers contact their referral line, 800-843-5438, for current dealers.
- *For more information, contact the Braun or Ricon corporate headquarters.*

*Ricon Corporate Headquarters*  
7900 Nelson Rd.  
Panorama City, CA 91402  
800-322-2884  
[sales@riconcorp.com](mailto:sales@riconcorp.com)

*Braun Corporation*  
PO Box 310  
Winamac, IN 46996  
219-946-6153  
<http://braunlift.com>

### ◆ *Additional Requirements*

- ✓ Areas where individuals walk, including all aisles, steps and floors must have slip resistant surfaces. The step edges, thresholds and the boarding edge of ramps or lift platforms must have a band of contrasting color(s) running the full width of the step or edge. The entrance doors of vehicles 22 feet in length or less must be a minimum of 56 inches high. A vehicle which is longer than 22 feet must have an entrance height of no less than 68 inches.
- ✓ Within the vehicle, signs must designate securement locations and seating locations for

persons with disabilities. Stepwells and doorways must have treads that are lit at all times while the vehicle is lit.

### Chapter 7 Checklist

- ❑ What are the steps for **pre-trip vehicle inspections**? 7-2
- ❑ What are the steps for **pre-trip wheelchair lift inspections**? 7-4
- ❑ What are the **ADA accessibility** responsibilities and requirements for paratransit providers? 7-3 to 7-5
- ❑ What are the **ADA maintenance requirements** for wheelchair lifts? 7-4
- ❑ Who are the **certified wheelchair lift dealers** for Kansas public transit? 7-5 to 7-6

### Chapter 7 Resources

“Transit Vehicle Inspections: A Handbook for Rural Transit Providers,” USDOT and KDOT, 1997 (See Appendix).

“Wheelchair Lift Maintenance: A Handbook for Rural Transit Providers,” USDOT and KDOT, 1993 (See Appendix).