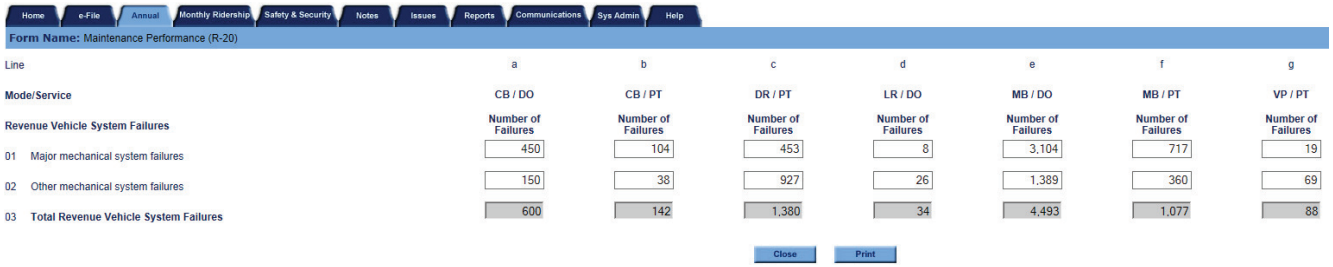
Maintenance Performance form (R-20)



Overview

The Maintenance Performance form (R-20) collects data on revenue vehicle system failures.

Reporting Requirements and Thresholds

This form is required for all directly operated (DO) and purchased transportation (PT) modes except demand response taxi mode (DT/PT). You should complete one form for all modes and types of service.

What Has Changed from Prior Year

There are no changes to the R-20 form for the 2013 report year.

Approach

You should report only failure data for revenue vehicles. Revenue vehicle system failures are mechanical problems that affect a vehicle as follows:

- The specific vehicle does not complete its scheduled revenue trip; or
- The specific vehicle does not start its next scheduled revenue trip.

The definition of revenue vehicle system failures applies to the performance of a specific vehicle (e.g., bus equipment number 5009). A failure is counted when the specific vehicle (e.g., 5009) fails to complete its scheduled revenue trip or start its next scheduled revenue trip. This is true even when another vehicle (e.g., vehicle number 4004) is substituted and no revenue service is lost.

The failures may occur in revenue service including layover / recovery time, or during deadhead operations. See the Service form (S-10) section of this manual for a detailed discussion of revenue service, layover/recovery time, and deadhead.

The revenue vehicle system failures are reported in two categories:

- Major mechanical system failures are those that limit actual vehicle movement or are safety issues; and
- Other mechanical system failures.

Detailed Instructions

You should report data by mode and type of service.

Failures are classified as either a major or other failure of a part of the revenue vehicle's mechanical systems.

You should report all failures that affect the completion of a scheduled revenue trip or the start of the next scheduled revenue trip, including failures during deadheading and layover.

Major Mechanical System Failures

These are failures of a mechanical element of the revenue vehicle that prevents the vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip because actual movement is limited or because of safety concerns. Examples of major bus failures include breakdowns of brakes, doors, engine cooling system, steering and front axle, rear axle and suspension. A failure need not be expensive or difficult to repair to be classified as major- for example, a flat tire would be a major failure if it prevented the bus from completing its scheduled trip.

A number of factors affect the number of major mechanical system failures incurred by a transit agency including local operating conditions, types of vehicles operated, and effectiveness of the maintenance program. However, it is expected that the same types of major mechanical failures will be reported by different agencies. The differences among agencies may be in the numbers reported, not the types of major mechanical failures.

Other Mechanical System Failures

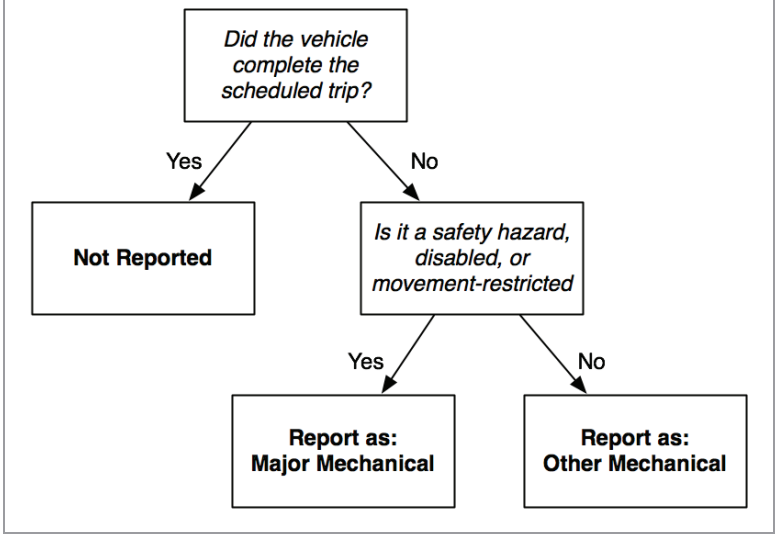
These are failures of some other mechanical element of the revenue vehicle that, **because of local agency policy**, prevents the revenue vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip **even though the vehicle is physically able to continue** in revenue service. Examples of other bus failures include breakdowns of fare boxes, wheelchair lifts, heating, and ventilation and air conditioning (HVAC) systems,

Since other mechanical system failures are based on local policies, there will be variation in the types and therefore, the numbers reported by different transit agencies. For example, some agencies in the southern part of the country may continue to operate a bus with a heating system breakdown while agencies in the northern part of the country would replace the bus immediately.

The following examples illustrate how revenue vehicle system failures are reported.

Exhibit 69 — Revenue Vehicle System Failure Reporting
Example 1: The air conditioning on one of Hamlet Transit Agency's buses (MB/DO) fails while carrying passengers in revenue service. The driver determines that he is unable to repair the problem and calls for a backup because it is a hot day. **Solution:** You should report as other mechanical system failure (line 02, MB). Air conditioning is not considered a major system, because the bus could physically continue in revenue service without working air conditioning.
Example 2: During layover, one of Hamlet Transit Agency's buses (MB/DO) experiences an engine cooling system failure. The vehicle is towed to the garage. A backup bus is dispached immediately and the next trip departs on time. **Solution:** You should report as a major mechanical systems failure because the bus could not physically operate its next scheduled trip (line 01, MB).
Example 3: The brakes stick on one of Hamlet Transit Agency's buses (MB/DO). The driver radios for help from the mobile repair unit; the unit adjusts the brakes during the scheduled layover for the bus in time for the bus to start its next scheduled trip. **Solution:** You do not report because the bus started its next scheduled trip.
Example 4: The front axle breaks on one of Hamlet Transit Agency's buses (MB/DO) on its scheduled pullout from the garage to the beginning of the bus route. The bus is towed to the garage and a replacement vehicle is sent. **Solution:** You should report as a major mechanical systems failure because the bus could not start its next scheduled trip (line 01, MB).
Example 5: While deadheading back to the dispatching point at the end of the day, an electrical system problem activates the wheelchair lift on one of Hamlet Transit Agency's vans (DR/DO). The lift gets stuck in the extended position and the van has to be towed to the garage. **Solution:** You should not report since the van completed all of its scheduled trips for the day.
Example 6: A substation that provides power to Hamlet Transit Agency's light rail (LR/DO) experiences a temporary failure. Rail service is delayed for ten minutes. Passengers stay on-board and service resumes. **Solution:** You should do not report this incident. There is no mechanical failure of a light rail passenger car.
Example 7: A vehicle's mirror breaks, making it unsafe to operate. Another vehicle is swapped in. **Solution**: Since the vehicle was unsafe to operate, this is a major mechanical failure.
Example 8: On a 6-car heavy rail (HR/DO) train, one of the doors fails, making one car unable to carry passengers, while the other 5 are still operable. The train is not removed from service. **Solution:** Since one car is unable to provide service, this is a major mechanical failure.

Exhibit 70 — Revenue Vehicle System Failure Reporting



Line by Line Instructions for Maintenance Performance form (R-20)

You should complete one form for rail modes and non-rail modes by mode and type of service.

Form Level Help: You should click on the **Help** tab at the top of the screen for form level help.

Form Notes: A form note can be attached to any form. You should use the **Add Form Note** link for relevant information to a specific field, to the entire form or to multiple forms. You should click on the **Add Form Note** link at the top of the screen and enter your note on the **Notes** screen. You can review and / or edit a form note from the **Notes** tab. You should not use the Form Notes feature to answer issues generated from this form. From the **Issues** tab You should use the **Add Comments** link next to the specific issue.

Saving or Closing the Form: You should click on the **Save** button at the bottom of the screen to save the form. You should click on the **Close** button at the bottom of the screen to close the form without saving.

Revenue Vehicle System Failures

Line 01: Major Mechanical System Failures. By mode.

- Enter the number of failures of mechanical components of major systems that prevent the specific revenue vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip because actual movement is limited or because of safety concerns.

Line 02: Other Mechanical System Failures. By mode.

- Enter the number of failures of mechanical components of major systems that, because of local agency policy, prevent the specific revenue vehicle from completing a scheduled revenue trip or from starting the next scheduled revenue trip even though the vehicle is physically able to continue in revenue service.

Line 03: Total Revenue Vehicle System Failures.

- This is an **auto-calculated** field and cannot be edited, review for accuracy. By mode, the total number of revenue vehicle system failures equal to the sum of lines 01 and 02.