



Transmission and Distribution

Mobile Equipment - Perform Pre-Trip Air Inspections



Standard Operating Procedure

4.

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1.0 Persons Affected

This Standard Operating Procedure (SOP) affects all Transmission & Distribution Business Unit (TDBU) employees who operate or perform pre-trip inspections on Commercial Vehicles.

2.0 Purpose

This SOP provides the standard for performing pre-trip air inspections.

The purpose of this procedure is:

- to establish a standard for performing pre-trip air inspections within the Transmission and Distribution Business Unit (TDBU)
- to provide a detailed job aid to employees who perform this procedure within the course of their job

3.0 Rationale

This SOP will support the safety of our personnel by ensuring that the vehicle being inspected is in safe working order prior to putting the vehicle in to service.

This SOP requires that work performed by TDBU employees satisfies all applicable policies and regulations.

4.0 Scope

In-the-Scope of the Procedure

- The procedure includes the following:
 - Prepare for pre-trip air inspection
 - Perform pre-trip air inspection on a single unit
 - Perform pre-trip air inspection on a combination unit
 - Complete inspection process

Out-of-the-Scope of the Procedure

- The procedure does not include the following:
 - Mobile Equipment - Perform Pre-Trip Chassis Inspections SOP
 - Mobile Equipment - Perform Pre-Operational Equipment Checks SOP

5.0 Policies and Regulatory Requirements

This SOP is a result of the following:

Policies:

N/A

Regulatory Requirement(s)

National Safety Code Standard 13: Trip Inspections

The Security of Loads and Trip Inspection Regulations "Chapter H-3.01 Reg. 4 (effective April 6, 2005)

The Highways and Transportation Act, 1997



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Other

Manufacturer's Specifications

SaskPower Safety Rule Book, Revision 2.0 Apr.1st/2012

- Section 600: General

6.0 Roles, Responsibilities and Prerequisites

In-the-Scope of the Procedure Role(s)	Quantity Required	Responsibilities	Prerequisites
Inspector	1	1. Conduct the pre-trip air inspections as per guidelines established in the following procedure.	1. An employee must have an Air Endorsement or to be under the supervision of an employee with an Air Endorsement.
In-Scope Supervisor	1	2. Ensure corrective action is taken with identified recorded defects(s) following the pre-trip air inspection.	3. An employee who is in an in-scope supervisory position over an Operator performing a pre-trip air inspection.

7.0 Tools and Equipment

Tools and Equipment and Quantity Required:

- Short pry bar
- Commercial vehicle with air brake system
- Trailer with air brake system
- Unit log book/Operator's Manual
- Pre-Trip Air Inspection Checklist Single or Combination Units
- SGI Air Brake Manual

8.0 Planning and Preparation Checklist

Items to Check Before Starting the Procedure:

- Applicable Personal Protective Equipment (PPE) is available and in good condition



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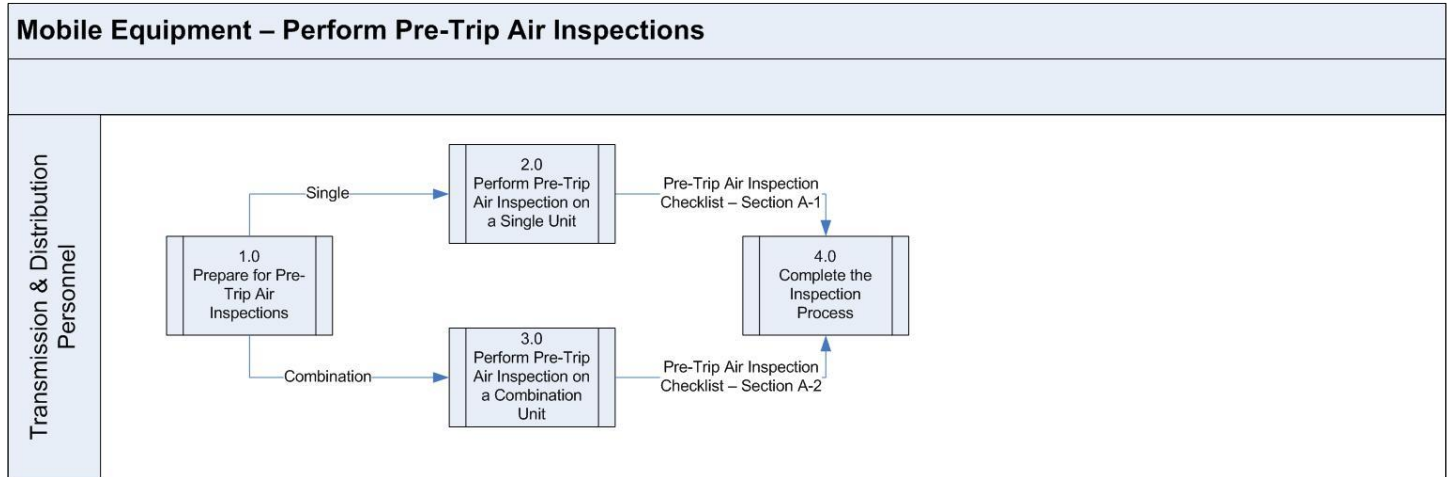
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9.0 Procedure

High Level Flowchart



The Procedure

This Standard Operating Procedure (SOP) covers the method for performing pre-trip air inspections.

Commercial vehicles (trucks, tractors and trailers over 5,000 Kg Registered Gross Vehicle Weight (GVW)) shall be inspected prior to going into service in accordance with Schedule 1 every 24 hours. No person shall drive or operate a commercial vehicle unless the vehicle is inspected prior to operation, as required.

1.0 Prepare for Pre-Trip Air Inspections

1.1 Prepare for Pre-Trip Air Inspections

1.1.1 The Inspector shall access the "Pre-Trip Air Inspection Checklist" component.

1.1.2 The Inspector shall park the unit on level ground.

- *Apply parking brake(s)*
- *Block the wheels*
- *Drain air tanks, as required*

1.2 Is the Unit a Single or Combination Unit?

1.2.1 The Inspector shall determine if the pre-trip air inspection will be completed on a single or combination unit.

- *Single, proceed to step 2.1 Inspect the Compressor, Belts, and Air Lines*
- *Combination, proceed to step 3.1 Inspect the Compressor, Belts, and Air Lines*



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2.0 Perform Pre-Trip Air Inspection on a Single Unit

This task is a set of steps to inspect and record the results of the pre-trip air inspection on a single unit.

Note: This task may involve repetition resulting in moving back through any of steps if inspection results require the inspector to repair or stop the inspection entirely.

2.1 Inspect the Compressor, Belts and Air Lines

2.1.1 The Inspector shall inspect the security and condition of the compressor, belts and air lines and record the results in Section A-1 of the Pre-Trip Air Inspection Checklist.

- *Compressor is free from oil leaks*
- *Belts are not frayed or cracked*
- *Air lines are not damaged and secure*

2.2 Test Slack Adjusters

2.2.1 The Inspector shall test the operation of the slack adjusters and record the results in Section A-1 of the Pre-Trip Air Inspection Checklist.

- *Ensure wheels are securely blocked*
- *Start engine allowing air pressure to build up to maximum pressure*
- *Release the parking brake(s)*
- *Shut off engine*
- *Check brake adjustments manually by using a short pry bar or pulling on the slack adjuster arm*
- *Manual Slack Adjusters: the push rod travel must not exceed 3/4 of an inch. If it exceeds this limit, the brakes must be adjusted*
- *Automatic Slack Adjusters: the push rod travel must not exceed 1 inch.*

Note: Adjustment of automatic slack adjusters is only to be performed as outlined in the SGI Air Brake manual.

2.3 Test Governor Operation

2.3.1 The Inspector shall test the operation of the governor cut out setting and record results in Section A-1 of the Pre-Trip Air Inspection Checklist.

- *Ensure wheels are securely blocked*
- *Start engine to build up air pressure to maximum pressure*

Note: When doing air build up the maximum allowable rpm is 1200.

- *Ensure the governor cuts out the compressor from pumping air at 115 to 135 PSI(793-931 kPa)*

Note: The compressor will exhaust at maximum pressure.



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2.3.2 The Inspector shall test the operation of the governor cut in setting and record results in Section A-1 of the Pre-Trip Air Inspection Checklist.

- *Ensure the parking brake is released*
- *Fan down brakes to a minimum of 80 PSI(560 kPa)*
- *Allow 3-5 second delay and ensure that the compressor has cut in by observing the build up on the air pressure gauge*

2.4 Test Vehicle Air Brake System

2.4.1 The Inspector shall test the operation of the vehicle air brake system for air loss and record results in Section A-1 of the Pre-Trip Air Inspection Checklist.

- *Ensure wheels are securely blocked*
- *Ensure air pressure is built up to maximum pressure*
- *Ensure parking break is released*
- *Shut off engine*
- *Apply full foot-brake application and hold for 1 minute*
- *Ensure there are no audible air leaks*

Note: Maximum recommended air loss after initial foot-brake application is 3 PSI (20 kPa) in 1 minute.

2.5 Test Automatic Warning Systems

2.5.1 The Inspector shall test the operation of the automatic low air warning system and record the results in Section A-1 of the Pre-Trip Air Inspection Checklist.

- *Ensure the wheels are securely blocked*
- *Ensure the parking brake is released*
- *Turn ignition key to the on position*
- *Fan brakes to lower air pressure ensuring the low pressure warning system activates at 55 PSI (379 kPa)*

Note: Depending on the unit the low pressure warning device could be a light and/or a buzzer.

2.5.2 The Inspector shall test the operation of the automatic park break application and record the results in Section A-1 of the Pre-Trip Air Inspection Checklist.

- *Fan brakes to lower air pressure*
- *Ensure vehicle park-brake valve automatically shuts off between 7-20 PSI (138-56 kPa)*

2.6 Test Air Build Up System

2.6.1 The Inspector shall test the operation of the air build up system and record the results in Section A-1 in the Pre-Trip Air Inspection Checklist.

- *Start the engine allowing air pressure to build up*



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- *Ensure the time the air pressure builds up from 50 to 90 PSI (345 to 620 kPa) is less than 3 minutes*

Note: When doing air build up the maximum allowable rpm is 1200.

2.7 Test Air Brake Holding Power

2.7.1 The Inspector shall test the operation of the air brake holding power and record the results in Section A-1 of the Pre-Trip Air Inspection Checklist.

- *Apply parking brake*
- *Remove wheel blocks*
- *Gently try to move the vehicle ahead*
- *Ensure the vehicle does not move*
- *Release parking brake*
- *Move the vehicle forward slowly*
- *Engage the clutch and make a full foot-brake application*
- *Ensure the vehicle stops*

2.7.2 Proceed to 4.1 Is There Any Recorded Defect(s)?

3.0 Perform Pre-Trip Air Inspection on a Combination Unit

This task is a set of steps to inspect and record the results of the pre-trip air inspection on a combination unit.

Note: This task may involve repetition resulting in moving back through any of steps if inspection results require the inspector to repair or stop the inspection entirely.

3.1 Inspect the Compressor, Belts and Air Lines

3.1.1 The Inspector shall inspect the security and condition of the compressor, belts and air lines and record the results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Ensure compressor is free from oil leaks*
- *Ensure belts are not frayed or cracked*
- *Ensure air lines are not damaged and secure*

3.2 Test Slack Adjusters

3.2.1 The Inspector shall test and record the operation of the slack adjusters in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Ensure wheels are securely blocked*
- *Start engine allowing air pressure to build up to maximum pressure*
- *Charge trailer system*
- *Release the parking brake(s)*



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- *Shut off engine*
- *Check brake adjustments manually by using a short pry bar or pulling on the slack adjuster arm*
- *Manual Slack Adjusters: the push rod travel must not exceed 3/4 of an inch. If it exceeds this limit, the brakes must be adjusted*
- *Automatic Slack Adjusters: the push rod travel must not exceed 1 inch.*

Note: Adjustment of automatic slack adjusters is only to be performed as outlined in the SGI Air Brake manual.

3.3 Test Governor Operation

3.3.1 The Inspector shall test the operation of the governor cut out setting on the vehicle only and record results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Ensure wheels are securely blocked*
- *Ensure the parking brake(s) is released*
- *Ensure air pressure is built up to maximum pressure*
- *Ensure the governor cuts out the compressor from pumping air at 115 to 135 PSI(793-931 kPa)*

Note: The compressor will exhaust at maximum pressure.

3.3.2 The Inspector shall test the operation of the governor cut in setting on the vehicle only and record results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Fan down brakes to a minimum of 80 PSI(560 kPa)*
- *Allow 3-5 second delay and ensure that the compressor has cut in by observing the build up on the air pressure gauge*

3.4 Test Operation of Service and Supply Lines

3.4.1 The Inspector shall test the operation of the service and supply lines from vehicle to the trailer and record results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Charge trailer system and build air pressure to maximum*
- *Shut off engine*
- *Disconnect brake service line*
- *Ensure no air loss occurs from the truck or trailer*
- *Disconnect supply line*
- *Ensure trailer brakes have applied immediately*
- *Ensure there is no air loss from the trailer supply line*



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- *Ensure air from the truck supply line shuts off at a minimum pressure of between 60-40 PSI(413-275 kPa)*
- *Reconnect lines*
- *Charge trailer system and build air pressure to maximum*

3.5 Test Vehicle and Trailer Air Brake System

3.5.1 The Inspector shall test the operation of the vehicle and trailer air brake system and record results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Ensure wheels are securely blocked*
- *Ensure air pressure is built up to maximum pressure*
- *Ensure parking break is released*
- *Shut off engine*
- *Apply full foot-brake application and hold for 1 minute*
- *Ensure there are no audible air leaks*

Note: Maximum recommended air loss after initial application is 4 PSI (28 kPa) in 1 minute.

3.6 Test Vehicle Automatic Warning System

3.6.1 The Inspector shall test the operation of the vehicle automatic low air warning system and record the results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Ensure the wheels are securely blocked*
- *Ensure the parking brake is released*
- *Turn ignition key to the on position*
- *Fan brakes to lower air pressure ensuring the low pressure warning system activates at 55 PSI (379 kPa)*

Note: Depending on the unit the low pressure warning device could be a light and/or a buzzer.

3.6.2 The Inspector shall test the operation of the vehicle automatic park break application and record the results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Fan brakes to lower air pressure*
- *Ensure vehicle park-brake valve automatically shuts off between 7-20 PSI (138-56 kPa)*

3.7 Test Vehicle Air Build Up System

Note: When testing the vehicle air build up system do not charge up trailer air system.

3.7.1 The Inspector shall test the operation of the vehicle air build up system and record the results in Section A-2 of the Pre-Trip Air Inspection Checklist.



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- *Start the engine allowing air pressure to build up*
- *Ensure the time the air pressure builds up is from 50 to 90 PSI (345 to 620 kPa) is less than 3 minutes*

3.8 Test Air Brake Holding Power on a Combination Unit

3.8.1 The Inspector shall test the operation of the air brake holding power on the vehicle and trailer and record the results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Apply trailer emergency brakes*
- *Release vehicle parking break*
- *Gently move the vehicle ahead*
- *Ensure the trailer does not move*
- *Charge the trailer air system*
- *Apply park brakes on the vehicle only*
- *Gently move the vehicle ahead*
- *Ensure the vehicle does not move*

3.8.2 The Inspector shall test the operation of the air brake holding power on the trailer and record the results in Section A-2 of the Pre-Trip Air Inspection Checklist.

- *Release trailer emergency brakes*
- *Gently move the unit ahead*
- *Apply trailer brakes with hand valve*
- *Ensure the trailer does not move*
- *Gently move ahead then make a foot-brake application*
- *Ensure the vehicle and trailer do not move*

Note: Repeat hand and foot-valve test on both sides of the unit checking for response and, in winter, for frozen wheels.

3.8.3 Proceed to 4.1 Is There Any Recorded Defect(s)?

4.0 Complete the Inspection Process

4.1 Is There Any Recorded Defect(s)?

4.1.1 The Inspector shall confirm if there are any recorded defect(s) in Section A of the completed Pre-Trip Air Inspection Checklist.

- *Yes, proceed to step 4.2 Is the Defect(s) Major or Minor?*
- *No, proceed to step 4.6 Record Inspection Results*



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4.2 Is the Defect(s) Major or Minor?

4.2.1 The Inspector shall refer to The Security of Loads and Trip Inspection Regulations: Schedule 1 Chassis, Tractor and Trailer to determine if the defect(s) is major or minor.

- *Major, proceed to step 4.3 Contact In-Scope Supervisor*
- *Minor, proceed to step 4.5 Repair Defect(s)*

4.3 Contact In-Scope Supervisor

4.3.1 The Inspector shall remove the unit from service.

4.3.2 The Inspector shall contact their in-scope supervisor to inform them of the major defect(s) identified on the Pre-Trip Chassis & Trailer Inspection Checklist - Over 5000Kg Registered GVW and/or request their assistance.

4.4 Determine Corrective Action

4.4.1 The In-Scope Supervisor shall seek direction from Fleet Services regarding any defect(s) that was identified as a result of the pre-trip chassis inspection.

- *Refer to any Fleet Services directives or documentation*
- *Contact your Fleet Services Representative, as required*

4.4.2 The In-Scope Supervisor shall communicate direction to the Operator and the Out-of-Scope Supervisor.

4.4.3 Proceed to 4.6 Record Inspection Results

4.5 Repair Defect(s)

4.5.1 The Inspector shall arrange to have repairs done prior to the next pre-trip inspection.

4.5.2 The Inspector shall contact their In-Scope Supervisor to inform them of the minor defect(s) identified on the Pre-Trip Air Inspection Checklist.

4.6 Record Inspection Results

4.6.1 The Inspector shall complete the applicable sections within Section B of the Pre-Trip Air Inspection Checklist.

- *Ensure all direction for corrective action has been recorded*
- *Ensure all relevant information has been recorded*
- *Sign and date*

4.6.2 The Inspector shall record all defect(s) and repair(s) within the Log Book.

4.7 Has the Inspection Been Completed?

4.7.1 The Inspector shall determine if the pre-trip air inspection has been completed.

- *No, proceed to step 1.2 Is it a Single or Combination Unit?*
- *Yes, proceed to step 4.8 File Pre-Trip Air Inspection Checklist*



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4.8 File Pre-Trip Air Inspection Checklist

4.8.1 The Inspector shall file the completed Pre-Trip Air Inspection Checklist.

- *File in Log book for no more than 20 Calendar days and then submit to Out-of-Scope Supervisor*
- *Keep 3 previous inspections in Log book at all times*

Note: Pre-Trip Air Inspections shall be kept on file by the Inspector's Out-of-Scope Supervisor for 6 months.

4.8.2 End of Procedure

10.0 Acronyms, Definitions and Symbols

Acronyms and Abbreviations

GVW - Gross Vehicle Weight

KPa - Kilo Pascal

PSI - Pounds per Square Inch

SGI - Saskatchewan Government Insurance

SOP - Standard Operating Procedure

TDBU - Transmission and Distribution Business Unit

Definitions

Air Governor:

Is a component of the air system that maintains a reservoir of air pressure between a predetermined maximum and minimum air pressure.

Combination Unit:

Truck or Tractor attached to a Trailer by a coupling device, ie. hitch.

Commercial vehicle:

A vehicle that:

(i) is used to transport goods or passengers; and

(II) is: (A) a truck, truck tractor or trailer, or combination of them, that has a registered gross vehicle weight of more than 5000 kilograms; or

(B) a bus that is designed and constructed to have a seating capacity, including the driver, of more than 10 people.

Competent:

Means possessing knowledge, experience and training to perform a specific duty.

Defect:

Anything that will make the unit unsafe to operate.

Fanning the Brakes:

Repeated air brake applications as to reduce reserve air pressure in the air tanks.

Gross Vehicle Weight:

The gross vehicle weight means the total weight of a vehicle or combination of vehicles, calculated as the sum of the weight transmitted to the surface of a public highway through all axles. This information is found on the vehicle registration.

Kilo Pascal:

A metric unit of pressure

Single Unit:

Truck, Tractor or Trailer

Major Defect:

Any defect listed under Major Defect in "Schedule 1"

Minor Defect:

Any defect not listed under Major Defect in "Schedule 1"

Symbols

N/A

11.0 SOP Components

The following is a list of components for this SOP which can be accessed through the SOP System:

SOP Component Name	SOP Component Type	SOP Component Description	Location of SOP Component
Pre-Trip Air Inspection Checklist	Checklist	A checklist that guides the user through an inspection for testing the air breaks system on a Single or Combination Unit.	SOP Online - SOP Bundle: Mobile Equipment - Perform Pre-Trip Air Inspections
Perform Pre-Trip Air Inspection Flow Chart	Flowchart	The high level and mid-level flowchart for the procedure.	SOP Online - SOP Bundle: Mobile Equipment - Perform Pre-Trip Air Inspections

12.0 SOP Owner

SOP Owner
Supervisor, Fleet Services

13.0 References

References	Location of Resource
SGI Air Brake Manual, 2003	SGI