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| Author:        | Mark Scott                                                                                     | Revision #:  | 2                 |
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## SAFE OPERATING PROCEDURES (Operational)

### Vehicle Jump-Start Procedures SOP #11E-7

| Hazard Review     |                        |                |
|-------------------|------------------------|----------------|
| Acid Exposure     | Electrical Shock       | Fire Hazard    |
| Battery Explosion | Explosive Hydrogen Gas | Moving Traffic |

  

| Required Personal Protective Equipment (PPE) |                      |                        |
|----------------------------------------------|----------------------|------------------------|
| Chemical-Resistant Gloves                    | High-Visibility Gear | Safety Glasses/Goggles |

#### Purpose

The purpose of this SOP is to establish safe, consistent, and compliant vehicle jump-starting procedures using UL-certified portable jump-start units (“jump boxes”) as the required and primary method. Traditional jumper-cable jump-starting is restricted and may be used only as a controlled last-resort contingency when an approved UL-certified jump box is not available and all safety requirements in this SOP are followed.

#### Definitions

**UL-Certified Jump Box:** A portable power unit that meets UL 2743, the recognized safety standard for portable power packs used to jump-start vehicles. A UL-certified jump box has undergone testing to verify safe discharge, overload protection, short-circuit protection, and suitability for automotive jump-start use.

**Remote Jump Terminal:** A manufacturer-designated positive/negative connection point intended for jump-starting in vehicles where the battery is located outside the engine compartment.

**Stop-Work Trigger:** A specific condition requiring employees to immediately discontinue jump-starting and notify Maintenance or Dispatch.

#### Training & Pre-Operation

- Employees must complete approved jump-start safety training before attempting to jump-start any vehicle battery using jumper cables, a jump box, or quick-connect truck-to-truck connectors, and should consult Equipment Shops for proper instructions.
- Employees must understand hazards such as hydrogen gas ignition, battery acid exposure, electrical shock, and roadside traffic risks.
- Complete the following steps prior to jump-starting:
  - Verify that vehicle is parked safely with parking brake applied.
  - Inspect battery for leaks, cracks, swelling, overheating, or chemical odors.
  - Confirm system voltage compatibility (12V to 12V).
  - Review manufacturer jump-start instructions and identify correct jump terminals.
  - Inspect the UL-certified jump box for damage and ensure charge level is  $\geq 75\%$ .
- Only equipment shop staff and authorized mechanics may diagnose vehicle or battery issues. Operators and drivers are strictly prohibited from performing any roadside mechanical

repairs or troubleshooting beyond basic defect identification.

#### General Requirements

5. UL-certified jump boxes must be used whenever available.
6. Jumper cables are not preferred, not standard practice, and may be used only as a last resort when no UL-certified jump box is available.
7. Vehicles must be positioned safely away from traffic; CDL vehicles must follow roadside device placement requirements.

#### Jump-Starting Using a UL-Certified Jump Box

8. Ensure the jump box is UL-certified, charged  $\geq 75\%$ , and undamaged.
9. Turn off the jump box before connecting clamps.
10. Connect the positive (+) clamp to the vehicle's positive terminal or remote positive post.
11. Connect the negative (-) clamp to a clean, unpainted engine/chassis ground—never the negative terminal of the dead battery.
12. Power on the jump box and follow manufacturer instructions.
13. Attempt to start the vehicle for no more than 20 seconds.
14. Allow a 2-minute cooldown between attempts.
15. After two failed attempts, STOP WORK and contact **Equipment Shop** Vice Maintenance.
16. Turn off the jump box and disconnect clamps in reverse order.

#### Jump-Starting with Jumper Cables

17. This method is permitted only when no UL-certified jump box is available.
18. Park vehicles close enough for cable reach but do not allow vehicles to touch.
19. Apply parking brakes; place transmissions in Park/Neutral; turn off accessories.
20. Connect jumper cables in this exact order:
  - Connect jumper cables in this exact order:
  - Red (+) → positive terminal of disabled battery
  - Red (+) → positive terminal of donor battery
  - Black (-) → negative terminal of donor battery
  - Black (-) → engine/chassis ground on disabled vehicle (NOT the disabled battery's negative terminal)
21. Start donor vehicle as required by manufacturer instructions.
22. Start disabled vehicle using same crank limits as above.
23. Disconnect cables in reverse order, avoiding contact with moving engine components.

#### Stop-Work Triggers

24. Employees must immediately stop and notify Maintenance/Dispatch if:
  - The battery is cracked, leaking, swollen, frozen, or emitting a strong rotten-egg odor.
  - More than two jump-start attempts are required.
  - The same vehicle requires repeated jump-starts within 24 hours.
  - Sparks, smoke, melting insulation, or overheated clamps appear.
  - Employees are uncertain about correct jump terminals or manufacturer instructions.
  - Any attempt is made to diagnose or repair vehicle mechanical issues.

#### Post-Operation Requirements

25. Document the jump-start in the appropriate system or log.
26. Notify Maintenance for battery testing and charging system diagnostics.

27. Secure and recharge UL-certified jump boxes after use.

28. Retrieve roadside triangles and re-enter roadway safely.

#### Emergency Procedures

29. Motor Fleet Management vehicle (only): For vehicle breakdowns call 1-800-277-8181 24/7 (Holman Automotive Services).

30. In the event of battery explosion, electrical shock, fire, or injury:

- Move to a safe distance immediately.
- Call 911 about any serious injury or fire event.
- For acid exposure: flush affected areas with clean water for 15 minutes.
- Notify the Safety department and file an incident report the same day.

31. Do not resume work until cleared by Maintenance or Safety.

| Related SOPs                  |                                         |
|-------------------------------|-----------------------------------------|
| SOP 11E-1 Pre-Trip Inspection | SOP 11E-3 Roadside Emergency Procedures |
|                               |                                         |