Battery Boosting

Hazard Assessment and Training Briefing

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Introduction

Boosting a battery can be done safely if the proper steps are followed.

Critical Task Inventory

- General Precautions
- Preparing to Boost
- Boosting a Battery

PPE Requirements

Image	Description	Standard
	Hard Hat	Recommended where Overhead Hazards are Present
	CSA Safety Toed Boots	Recommended
	Safety Glasses	Recommended
	Leather or Rubber Gloves	Recommended
	Hi-Visibility Safety Vest	Required Around Active Heavy Equipment or Vehicles

Safety Equipment

Image	Description	Standard
	Reflective Triangles or Flares	Required

General Precautions

Hazard Assessment	F	S	P	R
Burn by Battery Acid (H, S)	2	2	2	6
Explosion (S)	1	3	2	6
Grounding (S)	1	2	2	5

Controls

- Never boost a frozen or potentially frozen battery.
- Familiarize yourself with the owner's manual for the vehicle you are operating. This is especially true with newer vehicles as the procedures may be slightly different.
- To prevent an explosion, ensure the batteries are of the same voltage and that the battery being boosted is not frozen.
- Position the two vehicles so the battery cables reach. Make sure the vehicles are not touching, which would "ground" the two vehicles together.

Preparing to Boost

Hazard Assessment	F	S	P	R
Struck by Oncoming Vehicle (S)	2	2	2	6
Run Over by Own Vehicle (S)	2	2	2	6

Controls

- Place reflective triangles or flares five vehicle lengths behind the end of each vehicle.
- Apply the emergency brake in both vehicles.

Frequency of Exposure (F)	Severity of Loss (S)	Probability of Loss (P)	F + S + P = Risk Rating (R)
1 = Up to Weekly 2 = Up to Daily 3 = 1+ Times / Day	1=Class C – Minor, non-disabling, non-disruptive 2=Class B – Serious injury or disruptive loss 3=Class A – Major injury, permanent disability or loss	1=Limited chance adverse event will occur 2=Adverse event likely to occur 3=Adverse event likely to occur soon	**7 to 9 = High Risk** **5 to 6 = Medium Risk** **3 to 4 = Low Risk**

Type Of Hazard: H = Health (acute or chronic) S = Safety (people and equipment) Q = Quality P = Production E = Environment

Boosting a Battery

Hazard Assessment	F	S	P	R
Electrical Shock (S)	2	2	2	6
Burn by Battery Acid (H, S)	2	2	2	6
Explosion (S)	1	3	2	6

Boosting a 12V with a 12V

- Turn off the booster vehicle.
- Identify the positive terminal of both batteries (these are coloured red, or have “+”, “P”, or “POS” written on the battery case, post or clamp).
- Attach one jumper cable between the two positive terminals.
- Attach the end of the second jumper cable to the negative terminal of the booster battery and the other end to some part of the engine in the vehicle being started. This final connection should be at least a foot from the battery (to avoid sparks which could cause an explosion) and must be on a piece of metal that is not painted, chrome-plated, heavily rusted or coated with grease. The likelihood of a spark when connecting the cable comes with the last connection of the circuit.
- Try to start the vehicle (do not crank the starter over for more than 20 seconds at a time). If the vehicle fails to start immediately, start the vehicle holding the booster battery so it will not run down.
- Once the vehicle with the dead battery is started, immediately undo the cables in the reverse order that you put them on.

Boosting a Battery

Boosting a 24V with a 12V

- Identify the positive and negative posts on the 12 volt vehicle.
- Identify the positive and negative posts on the equipment. There will be two batteries with a wire running from one positive post to the other batteries negative post. One negative post will have a wire to the body of the equipment and one positive post wire going to the starter.
- Always attach jumper cables from the 12 volt to one or the other of equipment batteries. Do not attach one jumper cable to one battery and the other to the other battery. Attach jumper cables positive to positive and negative to negative.
- If the vehicle does not turn over with the jumper cables on one of the equipment batteries, then try the other as one may be dead.
- Once the vehicle starts, remove the jumper cables being careful not to touch the ends together.

Boosting a 24V with a 24V

- Identify the positive and negative posts on the equipment. There will be two batteries with a wire running from one positive post to the other batteries negative post. One negative post will have a wire to the body of the equipment and one positive post wire going to the starter.
- Attach jumper cables with positive going to the positive posts that go to the starter and attach the negative jumper cable to the battery posts that have a wire going to ground on the equipment.