

SAE INTERNATIONAL

BAJA SAE 2024

Technical Inspection Bulletin
#2



Introduction

- **It is your responsibility to read the rules and prepare your car accordingly. This document provides supplemental information.**
- **Be sure to read all the technical bulletins.**
- This document will cover issues encountered in California in 2024.
- This bulletin will also offer guidance on how certain rules will be enforced.
- If you are unsure about a rule, you can make use of the Rules Question feature on BajaSAE.net.
- Many rule changes were implemented to simplify the technical inspection process and reduce time spent in technical inspection while maintaining a sharp focus on competitor safety.

Outline

- Paperwork
- Fuel Tank
- Seats
- Driver Restraint
- HROE Guarding
- Roll Cage / Tube Joints
- Splash Shield
- Exhaust
- Brake Light
- Cockpit

Paperwork

Many teams arrived at tech inspection without complete paperwork

- Make sure you are filling out all applicable information
- Reference the tech inspection sheet instructions : [Link to BajaSAE.net](https://www.bajaSAE.net)

Drivetrain

- If your team manufactured your CVT, make sure you list your school under make, and place an identifiable model name in the model field which matches the marking on your CVT.

Dampers

- If your team manufactured your dampers, make sure you list your school under make and place an identifiable model name in the model field which matches the marking on your dampers.

Signatures

- A significant number of teams lacked the signature of their advisor and many signatures lacked dates. *If you do not have the proper paperwork you may be sent to the back of the tech line.*

Fuel Tank

- Fuel tank mounting and fastening needs improvement
 - Check that your fuel tank is completely within the roll envelope.
 - Make sure your mount is not cantilevered
 - Make sure your fasteners are graded and have the correct stack-up
 - Check to make sure your rubber washers are not extruded from under the metallic washers.

Seats

- ***Seats continue to be a challenge for BSAE***
- The seat must work with the driver harness to secure the driver within the roll cage
- **Design Issues**
 - Insufficient rigidity and strength
 - Poor fit-up and coordination with driver harness
- **Manufacturing Issues**
 - Manufacturing defects reducing strength
 - Modifications of purchased seats reducing strength
- **Mounting Issues**
 - Point loading causing cracking or break-through
 - Insufficient rigidity of the UST or UST system.

Driver Restraint

- **Webbing**

- *A significant number of teams had incorrect routing of webbing through the adjusters. There is a diagram in the rules showing exactly how to route the webbing. NTI will be increasing the depth and detail of harness inspections.*
- *We saw several instances of improper adjustment of the shoulder and lap belts. Study the instructions from your harness manufacturer!*

- **Hardware**

- *NTI continues to see poor tab mounting and improperly sized hardware for lap belts. NTI will be increasing the depth and detail of lap belt inspections.*
- *Be prepared with easy to remove body panels and seats to facilitate faster technical inspection times.*

HROE Guarding

NTI received feedback that B.9.2.2.1 is not clear.

- In 2023 NTI encountered many two-piece CVT covers. Where these two-piece CVT covers came together as a butt-joint, this created a radial and/or tangential path and diminished the strength of the HROE guarding.
- B.9.2.2.1 was updated to match the enforcement from 2023 but was not made clear.
- The ½ inch overlap requirement across the width of CVT covers remains in effect.
- The ½ inch overlap requirement also applies to the periphery of the CVT cover. Where two-piece HROE guarding comes together, ½ inch of overlap is required.
- The ½ inch overlap requirement does NOT apply to gearboxes – OEM or custom built by teams.

HROE Guarding

Guarding must contain flying debris and prevent direct contact

- NTI encountered a clutch cover with two large ports, approximately 3-4 inches in diameter.
- The side ventilation port allowed direct contact to the rotating equipment.
- The top ventilation port allowed a direct path for flying debris to exit the cover and potentially injure track workers.

Tube Joints

- Tube joints must be fully welded.
- Incomplete fitment and incomplete welding is not acceptable.



Splash Shield

- Splash shields shall divert fuel AWAY from the exhaust:
 - NTI encountered several splash shields which were sloped in the same direction as the muffler exit.
 - Carefully review Figure B-50 on Page 72 of the rules. Note how the slope of the splash shield is perpendicular to the muffler exit port.

Exhaust

- **Exhaust gases must not impinge upon the vehicle frame or any fuel related device.**
 - Track workers have been injured when assisting vehicles whose exhaust gases impinged upon the vehicle frame.
 - For 2023, a new exhaust clearance envelope was implemented.
 - The rule has been successful, but there are some situations where it may not solve the problem.
 - Even if teams meet the technical letter of the rule, modifications may be required to improve the safety of the vehicle.
 - Take extra care in inspecting your vehicle and make sure it does not pose an undue hazard to track workers.

Brake Light

- **Improper wiring of Command Electronics 003-6016**
 - Teams using the Command Electronics brake light, model 003-6016 must take care to wire the brake light for stop mode only.
 - Many teams are using this brake light incorrectly wired in the tail mode. The tail mode is not bright enough. Teams must take extra care to wire the light properly.



Kill Switches

- **Function and durability must remain beyond technical inspection**

- During the endurance event in California two teams got locked up near an obstacle. One of the vehicles rolled on its right side. When the nearest NTI official arrived, the engine was running at part throttle and both kill switches were not functional.
- The engine continued to run when rolled over and engine oil began to be burned in the combustion chamber creating white smoke.
- The valve cover breather vent had also become disconnected, splashing hot oil near the exhaust.
- The driver safely egressed the vehicle and the engine was stopped by alternate means.

Kill switches are a critical part of the safety system. NTI will be increasing the depth and detail of kill switch inspections. Take extra care to ensure your wiring and switches are in good condition.