

Background

- Baja SAE (Society of Automotive Engineers) is an annual off-road international design motorsport competition
- Every year students engineer and build a vehicle based on updated competition rules and regulations
- Beaver Racing competes in West Coast and Midwest competitions, with up to 10 events daily.

Standardization

- Many competition procedures rely on student-leaders preserving knowledge by word-of-mouth to new students
- Standardize existing competition practices to form standard operating procedures for team

Optimization

- Reducing waste and ambiguity in standard operating procedures
- Improve workflow in paddock layout and incorporating human factors



Figure 1: Subteam Boxes Layout

Baja Racing Competition Flow

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Figure 2: Trailer & Canopy Layout

New Standardized Checklists

Based on Beaver Racing team interviews, these were the Standard Operating Procedures we developed checklists for:

- Tools/Trailer Organization
- Vehicle Pre-Inspection
- Meal Planning
- Subteam Tool Boxes
- Vehicle Setting Guidelines

Goals & Outcomes

- The checklists are user-friendly
- Designed so any Baja member can perform these various tasks regardless of experience level
- An organized way to plan and execute a competition
- Ultimate goal of saving time at competition, allowing the team to focus even more effort and time to winning

Layout Design

- Layout is designed to be legible and easily referenced during competition for setup and navigation
- Design Elements Incorporated:
 - Workspace Flow
 - Tools/Department Locations
 - Sponsor's Qualitative Preferences
 - Minimal Visual Clutter

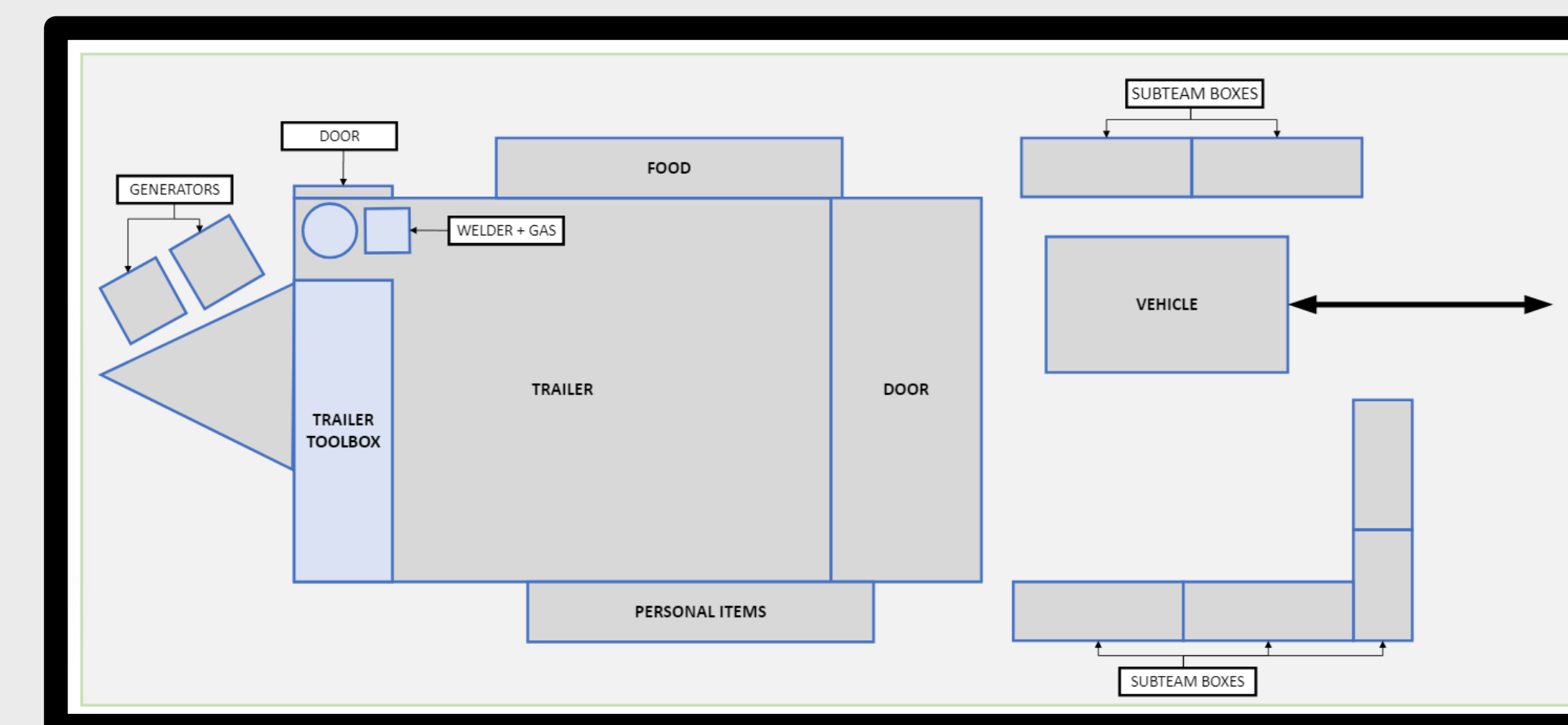


Figure 3: Paddock Layout

Procedure Documentation

- The checklists are designed to be modified each competition depending on West Coast or Midwest and which year.
- They are designed to be used digitally and manually, and contains logical flow to complete the

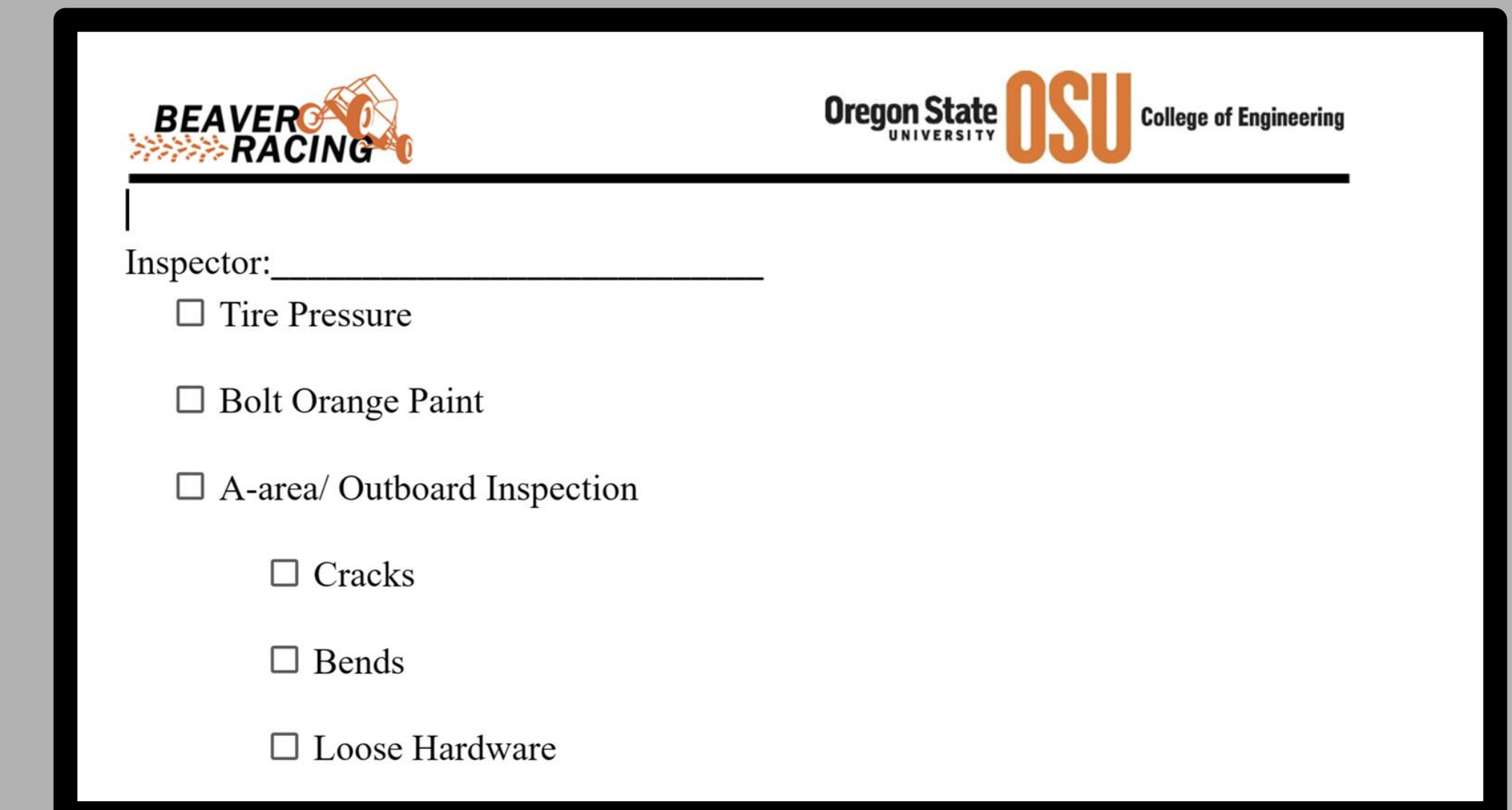


Figure 4: Pre-inspection Check list



Figure 5: Toolbox Check list

Lasting Procedure Improvement

- The documentation created was designed to be modified and improved throughout the lifetime of Beaver Racing's organization
- Documentation will be provided on design philosophies and procedures to allow these SOP's to continue to be used



Figure 6: Competition day Trailer & Canopy Competition Layout