



# Formula SAE-A Volunteer Role Handbook 2021

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## Acceleration Event

Saturday 9:00am - 12:30pm

The Acceleration officials' briefing is conducted at 8:30am on Saturday. Please ensure you arrive 60 minutes before the event scheduled start time to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen. You will be assigned to another role in the afternoon session.

1. Ensure you have the correct Personal Protective Equipment for your specific role, ask your work group leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, water bottle.*
  - *Verify fire extinguisher and spill kit are in place and functional.*
2. Ensure the competition vehicle has the ALL 'tech' stickers.
3. Line up the test vehicle at the staging area.
  - *Ensure only one vehicle is in the staging area at any time.*
  - *Ensure all spectators and team personnel are behind the barriers. No person shall be leaning or sitting on the barriers.*
  - *Once engine is running, DO NOT move in front of the vehicle for any reason.*
  - *Ensure driver is wearing proper safety equipment.*
  - *Ensure driver is restrained and has helmet visor down.*
4. Driver is instructed to commence acceleration event when track marshals are in place behind barriers.
  - *Marshal to check timing equipment is ready.*
  - *Marshals to remove paddle to alert driver the event has commenced.*
  - *The driver can commence the run at their convenience.*
5. Once a vehicle has completed its run, it must return to the staging area at walking pace (1<sup>st</sup> gear only).
  - *Marshal to ensure vehicle returns to staging area at walking pace (1<sup>st</sup> gear only).*
6. The vehicle must stop at marshal and the engine must be switched off.
  - *The vehicle must exit the track area before changing drivers.*
7. Once the vehicle has exited the staging area, ensure that area is ready for the next competitor.
  - *Any vehicle damage must be reported to the workgroup leader.*
  - *Clean any oil spills and sweep any oil dry clear of the track.*
  - *Return any cones or barriers that have been displaced to the correct position.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Administration

Thursday 8:00am - Sunday 5:00pm

The Administration Office is the main area where everyone attending the event will report to. The role of Volunteer Administrator commences with Team Registration from Thursday morning and continues through to the end of the Formula competition on Sunday. The Volunteer Administration office is open and on duty at all times during the event. As with all positions, sign in on arrival at the Administration-Registration Office and attend the volunteer briefing at 8:00 am each day to become aware of the day's schedule.

The administration office will have on-site the following equipment:

Equipment	2 x Printers with photocopy function 2 x Laptops (1 for Design and 1 for Scoring) First Aid medical box Water for Volunteers Sunscreen
Stationery	Printer toner cartridges, staples, tape, tape dispenser, white-out, pens, markers, A4 paper, note pads, ruler, 20 clipboards, batteries, blue tac, etc.
Documents	2 copies of the Event Handbook, Daily Sign-in/Sign-Off Volunteers List, FSAE-I Rules, Australasian Addendum
Display	The CAMS Event Licence

### Thursday & Friday – Team Registration Days

This is the day that participating teams will start to register their attendance and team.

1. No specific PPEs are required for this role however ask your group leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
2. Event
  - *Check off students that are on the team list. Cross out the ones no longer attending or add any new students to the list. If person is not a member, ensure they sign up for on-the-spot membership and pay fees.*
  - *Check that the students on the list have current SAE-A membership or belong to an affiliation society.*
  - *Collect CAMS Competition disclaimer forms from each student participating in a team.*
  - *Driver Check-in:*
    - i. *Check off the list the students who have been nominated as drivers. **Note a minimum of 5 drivers must be registered.***
    - ii. *Check they have a current CAMS licence. If not on the list, add their details. If the person doesn't have a CAMS licence, the person is to complete the CAMS Licence Application form and pay on-the-spot for a L2SE (Level 2 Single Event) licence. The receipt at the bottom of the form is to be issued to the person.*
  - *Once all the above have been checked, hand out wristbands for each person in the team. The details of which colour goes to who will be explained to you on the day.*
  - *Hand out to the Team Leader all the:*
    - i. *Lanyards/wrist bands for the members of their team.*
    - ii. *Pit Map.*

- iii. *Site map*
- iv. *Pre-ordered team t-shirts.*
- v. *10 copies of the Formula Event program (included in VTE magazine)*
- *All Volunteers are to sign-in and sign-out daily on the provided sign-in-out list.*
- *Volunteers requiring a radio must record the radio number alongside their name on the Volunteer sign-in list and sign-out the radio when returned.*

### **Saturday & Sunday**

Provide assistance as required to the Event Captains, teams, volunteers, public, etc. Follow guidance from senior administration members.

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Autocross Event

Sunday 9:00am - 4:30pm

The Autocross officials' briefing is conducted at 8:30am on Sunday. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen. You will be assigned to another role in the morning session.

1. Ensure you have the correct PPE for your specific role, ask your work group leader if you are unsure exactly what is required.
  - *Heavy cotton orange overalls for recovery team, high visibility clothing/vests, hat, gloves & closed toe shoes.*
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Verify recovery equipment, fire extinguisher and spill kit are in place and functional.*
2. Before Autocross event commences:
  - *Before the event, a safety talk will be conducted by the Event Captain to all event participants. Discussing the event best practice and safe operation. This will include the recovery of cones detailed later.*
  - *Daily a safety talk will be conducted by the Clerk of the Course or qualified delegate to the teams and drivers.*
  - *Track is reviewed by CAMS aligning with their best practice and safety focused guidelines.*
  - *Track layout has been created by Clerk of the Course or qualified delegate focusing on the safety of the driver, event officials and the public.*
  - *Track reviewed by the Event Captain for design, condition, and suitability for purpose.*
  - *Event Captain and site manager must verify number and location of flags, number and location of information signage, number and location of fire extinguishers, radio function, availability of water, availability of sunblock, that all event personnel are appropriately attired for the conditions.*
  - *When medical, fire team, marshals and recovery team are in place a role call will be conducted by the Event Captain to verify radio function and confirm location.*
  - *Ensure all officials, spectators and team personnel are behind the barriers. No one shall be leaning or sitting on the barriers.*
  - *All vehicles must be safe to run validated by Event Captain - ensure the competing vehicle has ALL 'tech' stickers attached.*
  - *Officials - when not on track all competing vehicles must be pushed by pole.*
3. During the Event
  - *Officials ensure all spectators and team personnel are behind the barriers. No one shall be leaning or sitting on the barriers.*
  - *Event captain should ensure fire and medical support are in attendance and available to react to any eventuality.*
  - *Officials to ensure -once the engine is running, DO NOT move in front of the vehicle for any reason.*
  - *Designated official - ensure driver is wearing proper safety equipment.*
  - *Starter - ensure driver is restrained and has helmet visor down.*
  - *Officials - when not on track all competing Vehicles must be pushed by pole.*
  - *Officials must at all times be vigilant for lost vehicle parts or fluids being left on circuit. If these are apparent the Clerk of Course and the Recovery Captain must be informed. It is their responsibility to ensure the surface of the track is safe and initiate clean up procedures as required.*
4. Line up the test vehicle at the starting area.

- *Ensure only one vehicle is on track at any one time.*
  - *Ensure all spectators and team personnel are behind the barriers. No one shall be leaning or sitting on the barriers.*
  - *Once the engine is on, DO NOT move in front of the vehicle for any reason.*
  - *Ensure driver is wearing proper safety equipment.*
  - *Ensure driver is restrained and has helmet visor down.*
5. Driver is instructed to commence autocross event when track marshals are in place behind barriers.
6. Starting procedure
- *Starter should be positioned beside the competing vehicle as it is pushed into position.*
  - *Starter must have the starting paddle in place in front of the drivers as the competing vehicle presents to the start line.*
  - *Starter to check timing equipment is ready.*
  - *Starter only removes the starting paddle when it is safe for the competing vehicle to start.*
  - *The driver can commence the run at their convenience.*
7. Once a vehicle has completed its run. The vehicle must stop at finish area and the engine must be switched off.
- *The vehicle must be pushed out of finish area by push rod. The vehicle must exit the track area before changing drivers.*
8. Once the vehicle has exited the competition area, ensure that track is ready for the next competitor.
- *Any vehicle damage must be reported to the workgroup leader.*
  - *Clean any oil spills and sweep any oil dry clear of the track.*
  - *Return any cones or barriers that have been displaced to the correct position.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Brake Test Event

Friday 8:45am - Sunday 12:30pm

The Brake officials' briefing is conducted each day at 8:30am. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role, ask your workgroup leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Verify fire extinguisher and spill kit are in place and functional.*
2. Ensure the competition vehicle has the first 2 'tech' stickers.
3. Line up the test vehicle in the designated area.
  - *Vehicle to be pushed to designated area and the engine only started when directed to do so.*
4. Instruct the driver to complete the engine kill switch and brake light test.
  - *Once the engine is on, **DO NOT** move in front of the vehicle for any reason.*
  - *Ensure the location of fire extinguishers and other fire equipment is known.*
  - *Ensure driver is wearing appropriate safety equipment.*
  - *Ensure driver is restrained and has helmet visor down.*
5. Ensure only critical personnel are within test area (5 metre radius of vehicle) before the noise test commences.
  - *Critical personnel include driver, team manager/technician and two marshals.*
  - *Team manager/technician and tachometer observer marshal to be positioned at front wheel of vehicle.*
  - *Team member/push bar/fire extinguisher to be instructed by marshals to be ready just outside test area (5 metres from vehicle).*
6. Place the decibel reader at the location described in the rules and take the reading of the noise level generated by the vehicle.
  - *Decibel meter observer to be positioned as instructed by event captain.*
7. Once the reading has been successfully taken, ensure all persons are clear of the vehicle.
8. Once the vehicle has exited the competition area, ensure that area is ready for the next competitor.
  - *Any vehicle damage must be reported to the workgroup leader.*
  - *Clean any oil spills and sweep any oil dry clear of the track.*
  - *Return any cones or barriers that have been displaced to the correct position.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Commentating

Saturday 9:00am - Sunday 4:30pm

### **\*Note Pre-Event work required\***

If it is your first time as a commentator, you will be contacted prior to the event and details of the process involved will be explained to you in greater detail. This means there is no briefing for the commentator position specifically, but all commentators must attend the daily officials briefing at 8am.

Commentating covers all the dynamic events of the competition, namely Acceleration, Skidpan, Autocross and Endurance. You will need to work with organisers and live media coverage (if present). Content of coverage includes lap times, competitor details, competition details, acknowledgement of supporters, and live interviews.

Content should be presented in an engaging and positive manner. A minimum of two commentators should be used, especially during skidpan and acceleration which are run at the same time. While there is a lot of content that can be discussed, it is worth noting that the primary audience are the teams and their supporters. Their main interest is on timing and the resultant scores.

#### 1. Pre-Event:

- *Understand the rules and the details of the teams and competition. Content regarding teams, competitors, and rules is available upon request from SAE-A.*
- *Perform preliminary research on the state of the competition worldwide, including current technical trends.*

#### 2. During the event:

- *Ensure that audio is functioning correctly before launching into commentary.*
- *Liaise with organisers to arrange a microphone during the day. This will need to be returned during lunch breaks for charging.*
- *Ensure you have access to water and sun protection.*
- *If you are commentating from a restricted area ensure you have appropriate PPE, coordinate with the event captains to ensure that this is done correctly.*
- *Gain access to lap times, this may be in direct contact with timing officials or via a timing app.*
- *Be prepared to make announcements on behalf of the organisers.*
- *Appropriate interviews include drivers having just finished events, team members, parents and supporters, event sponsors, event judges, and event coordinators. Keep questions short and clear and encourage short answers. The main goal of interviews is to cover the experiences from all stakeholders if possible.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Cost Judge Role

Friday 8:15am – 5:30pm

### **\*Note Pre-Event work required\***

The Cost Judge officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

#### 1. Pre-Event:

- *The Cost Event Captain will contact all Cost Judges, to introduce the Judge to the role, and answer any burning questions.*
- *Each judge will be allocated a number of Cost Reports approximately 4 weeks prior to the competition.*
- *Allocated reports will be distributed to judges by the most appropriate means.*
- *Ensure all materials nominated by the Cost Event Captain have been completed prior to the event day.*
- *More detailed information and instructions will be provided by the Cost Event Captain at the appropriate time.*

#### 2. During the event:

- *Ensure that you register at the Administration Building and have met with the Cost Captain and your Team Leader.*
- *Ensure you are familiar with the event facilities, including First Aid Area, Administration Building, Toilets, Volunteer's Break Area, Catering, etc.*
- *Throughout the day, make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
- *Cost Event Captain*
  - i. *Ensure that competitors have been reminded of Addendum submission at the time of registration. Liaise with the Administration team on Thursday morning to ensure each team is reminded as they register.*
- *The Cost Event is divided between multiple groups – ensure that you know who is serving as the group's Team Leader. This will be advised by the Cost Event Captain prior to the event, by email.*

#### 3. Roles and Timing:

- *The Team Leader will allocate specific roles for each station, on a rotating basis. These roles are:*
    - i. *Lead Judge - they have been assigned the report by the Cost Event Captain and have reviewed the report in detail. The primary line of questioning is expected to come from them.*
    - ii. *Timekeeper – to ensure that each section of the Cost Event (per station) is run to its allocated time. 2-minute warnings and notice to move on are expected at minimum. Can provide any further questioning/discussion points where appropriate.*
    - iii. *Note keeper – to ensure any points pertinent to further discussion between judges is noted and provide any further questioning/discussion points where appropriate.*
  - *Please note:*
    - i. *\*The total time per station is approximately 25 minutes. Other static event judging teams (both design and cost) operate simultaneously, so timeliness is of the essence.*
- \*

4. Event Cadence:

- For each station, the following is to be practiced:
  - i. Check-In & Introductions (5 minutes maximum).
    - a. This serves as an icebreaker activity; refrain from delving into the Cost Report during this time, as this is covered during the next activity. During the Introductions, competitors have the chance to:
    - b. introduce themselves to the judges.
    - c. explain trade-offs between content and cost using value assessment.
    - d. show elements demonstrating the application of methodologies such as Design for Manufacture, Design for Assembly, Lean Manufacturing and Minimum Constraint Design; and
    - e. elaborate on any other special actions taken affecting the CR.
  - ii. Visual Inspection (10-15 minutes)
    - a. A full assessment of the designated CRs should have been completed by each judge prior to start of the competition.
    - b. Assess the key concerns found during the report inspection, noting down competitors' explanations and justifications (or lack thereof).
    - c. Both competitors and judges are expected to respond to one another in a professional manner – carry yourself in a way that befits a judge assessing a competitor.
  - iii. Cost Task (10 minutes maximum)
    - a. Judges should have a firm grasp of the Cost Task for the current competition, along with notes covering expectations within responses.
    - b. Appraisal should assess:
    - c. methodology (or methodologies) used by the competitor to assess the Cost Task in terms of end-result value and feasibility.
    - d. final solution proposed by the competitor.
    - e. presentation skills of the competitor; and
    - f. additional materials used by the competitor to present their case.
    - g. Once the assessment is complete and judges are prepared to move to the next station, the CR should be collected back from the competitors.

4. Final Notes:

- Once all competitor assessment activities are complete, return to the judging area and complete the scoring for each team.
- If there are any questions regarding Cost Event matters, speak with your Team Leader or the Cost Event Captain.

Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.

## Design Event – Design Judge

Friday 8:00am - 6:00pm

### **\*Note Pre-Event work required\***

The Design officials' briefing is conducted 30 minutes prior to Friday judging (expected to start at 8:30am but check the schedule once available). Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

#### 1. Pre-Event:

- Understand the concept of FSAE-A: The concept behind Formula SAE-A is that a fictional manufacturing company has contracted a student design team to develop a small open-wheeled Formula style race car. The target marketing group for the race car is the non-professional weekend autocross racer. Each student team designs, builds, and tests a prototype based on a series of rules, whose purpose is both ensuring on-track safety (the cars are driven by the students themselves) and promoting clever problem solving. The prototype race car is to be evaluated for its engineering design concept, development process, execution, validation testing and student understanding.
- Review Design report submissions: A Dropbox link will be provided to team submissions, including design report (4-page technical overview, 3 technical drawing views and 1 page of open images), specifications sheet (a standard excel sheet of major technical specifications) and design video (5-minute introduction and overview of the design process). This may be compared to the initial team business logic case (high level objectives submitted at the beginning of the year). Note relevant questions for each team that may arise.
- Review the score sheet: Familiarise yourself with the assessment criteria for your designated judging speciality / area of expertise prior to the event.
- Review the event timetable to understand when you are judging and having breaks, if there are any issues, let the Event Captain know about it.

#### 2. During the Design Event:

- Direct a technical peer-to-peer engineering discussion: understand the team objectives, design process, development, manufacture, testing/validation, and critical self-review of the design presented. Explore students' fundamental knowledge of vehicle engineering design against industry standards and learnings throughout the project (this is primarily an educational event, not a motorsport event). Allow some prepared presentation but ensure to explore all aspects of the assessment criteria.
- Assess the evaluation criteria: as described in the scoresheet consistently (collaborate if multiple judges are assessing the same technical area of the vehicle) to output raw scores.
- Take notes for direct feedback to students: provided to teams after the event. Content should reflect the score provided, both positive and critical (in a constructive and educational manner).
- If a technical regulation breach or unsafe vehicle design is found during the review, explore within the context of the design event and follow-up with the team leader and/or Technical Inspection team after the Design Event, to ensure overall event safety.

#### 3. After the Design Event (between judging teams):

- Scoring: collaborate with other judges of the same system, where applicable, to ensure scoring consistency and unanimous agreement / agreed compromise of raw scores for that system.
- Feedback: Further develop written feedback in the time scheduled.
- Provide scores and feedback to design scribe for electronic transcription.

Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.

## Design Event – Design Scribe

Friday 9:00am - 6:00pm

### **\*Note Pre-Event work required\***

Design scribes gathers all judges' scores and written feedback, to enter master score sheets. Proficient typing is required.

1. Pre-Event:
  - *Bring Laptop/tablet and power supply: Must have Microsoft Excel (2007+), standard USB port (or adaptor for type C) and physical keyboard strongly recommended.*
  - *Communicate with team leader for introduction to team members and areas of responsibility.*
2. During the Design Event:
  - *Complete the provided score and feedback spreadsheets for the team.*
  - *Combine with the event master spreadsheet for updated tracking and end-of-day reviews.*
  - *Proofread feedback to ensure comments are constructive and informative.*
  - *Monitor time schedule to ensure judges leave to meet with teams in a timely manner.*
3. After the Design Event:
  - *Verify scores entered electronically match those on the judges score sheets and that feedback is provided for each system.*
  - *Compile judging scoresheets, by judge, for archiving and checking.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Design Event – Design Team Leader

Friday 9:00am - 6:00pm

### **\*Note Pre-Event work required\***

In addition to being a Design Judge, the team leader role also requires the below.

1. Pre-Event:
  - *Score Design report submissions: Collaborate with other team leaders to score the pre-event submissions.*
  - *Communicate with members of the team to set individual responsibilities, areas of focus and begin discussion, where multiple judges are experts for the same system.*
2. During the Design Event:
  - *Monitor time schedule to ensure the event is run in a timely manner, student presentation time is provided consistently, scores are complete, and judges maximise time providing feedback. Ensure judges have sufficient breaks as allowed by the event schedule.*
  - *Score vehicle appearance as determined by collaboration with the judging team.*
3. After the Design Event:
  - *Review scores to ensure consistency and feedback as appropriate / constructive. Take (or delegate) scoresheets and feedback sheets to verify all comments are entered in full.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Design Event – Weighing

Thursday 2:00pm - 4:00pm

Friday 8:00am - 2:00pm

Sunday 9:00am - 5:00pm

The weighing role on Thursday and Friday is part of the Engineering Design review, to verify the team's claims for vehicle mass indicated in the team specifications sheet and during the Design judge's review. Sunday, the Technical Inspection event captain will direct vehicles to randomly be weighed before and/or after the endurance event to verify rule compliance (including the vehicle presented at static events being fundamentally unchanged to that which is used in dynamic events).

1. Pre-Event:

- Setup weighing scales: Determine layout for scales, ramps, and display screen (including power) to allow safe weighing of vehicles.

2. During the Design Event:

- Direct teams to safely push the vehicle onto the scales.
- Complete master weighing sheet provided, including four corner weights (front/rear left/right) and estimated remaining fuel (internal combustion vehicles only).
- For Thursday and Friday only:
  - o Per the weighing sheet instruction, after the initial unloaded measurement, have the team place 7 x 10kg mass bags in the vehicle to represent the mass and weight distribution of a driver. After measuring the loaded condition, have the team remove the mass bags.
  - o Duplicate weighing data on the team copy.

3. After the Design Event:

- Provide weighing sheets to event captain.
  - o Thursday/Friday: Design event captain (or scribe as directed)
  - o Sunday: Technical Inspection event captain

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Endurance Event

Sunday 1:00pm - Sunday 4:30pm

The Endurance officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role and all safety equipment is in place and functional. Ask your work group leader if you are unsure exactly what is required.
  - *Hi visibility vests and closed toe shoes for all on track workers.*
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, water bottle.*
  - *Verify:*
    - i. *Recovery equipment, vehicle with tray or flatbed trailer; quick lift jacks; tow rope is located in a safe location, fire extinguishers are located at each marshal point, and that spill kits are located at the start line and with the fire tender.*
2. Before Endurance event commences:
  - *Before the event, a safety talk will be conducted by the Event Captain to all event participants, discussing the event best practice and safe operation. Safety is #1!*
  - *Daily a safety talk will be conducted by the Clerk of the Course or qualified delegate to the teams and drivers.*
  - *Track will be reviewed & approved by CAMS aligning with their best practice and safety focused guidelines.*
  - *Track reviewed and bought off by the Event Captain for design, condition, and suitability for purpose.*
  - *Event Captain will verify:*
    - i. *the number and location of flags.*
    - ii. *the number and location of information signage.*
    - iii. *passing lane indicators.*
    - iv. *wet track sign.*
    - v. *last lap board.*
    - vi. *starting and passing paddles.*
    - vii. *number and location of fire extinguishers.*
    - viii. *radio function.*
    - ix. *availability of water.*
    - x. *availability of sunblock.*
    - xi. *all event personnel are appropriately attired for the conditions.*
  - *When medical, fire team, marshals and recovery team are in place a role call must be conducted by the Event Captain to verify radio function and confirm location.*
  - *Ensure all officials, spectators and team personnel are behind the barriers. No one shall be leaning or sitting on the barriers.*
  - *All vehicles must be safe to run validated by Event Captain or qualified delegate by ensuring ALL 'tech' stickers are attached.*
  - *Officials - when not on track all competing vehicles must be pushed by a push bar.*
  - *Officials on track negotiate the cones they will replace with the downstream officials ensuring they will never face away from an approaching vehicle when replacing a cone.*
3. When the all-track checks are complete the event is designated open by the Event Captain.
4. Event commences.
5. Teams are given permission to start their engine in the starting area by a designated official.

- *The car is not to be placed in gear until it is located at the start line with all team members and officials, except the starter, away from the area.*
6. Competing vehicle is to be pushed to the start line by the team with the engine running.
    - *Officials and team members are to ensure no one is located in front of the vehicle when the engine is running.*
  7. Line up the competing vehicle in the starting area (pushed into position by the team).
  8. Starting procedure:
    - *Starter should be positioned beside the competing vehicle as it is pushed into position.*
    - *Starter should be positioned with full view of the track focusing on approaching vehicles.*
    - *Starter must have the starting paddle in place in front of the driver as the competing vehicle presents to the start line.*
    - *Starter only removes the starting paddle when it is safe for the competing vehicle to start and not impede other vehicles on track.*
    - *The driver can commence the run at their convenience.*
  9. During the event:
    - *Officials ensure all spectators and team personnel are behind the barriers. No one shall be leaning or sitting on the barriers.*
    - *Event captain must ensure fire and medical support are in attendance and available to react to any eventuality.*
    - *Event Captain is to ensure a safe number of vehicles are on track at any one time.*
    - *Officials to ensure - once the engine is running, DO NOT move in front of the vehicle for any reason.*
    - *Designated official - ensure driver is wearing proper safety equipment.*
    - *Starter - ensure driver is restrained and has helmet visor down.*
    - *Officials - when not on track all competing vehicles must be pushed by a push bar.*
    - *Officials must at all times be vigilant for lost vehicle parts or fluids being left on circuit. If these are apparent the Event Captain and the Recovery Captain must be informed. It is their responsibility to ensure the surface of the track is safe and initiate clean up procedures as required.*
  10. Passing procedure (IT IS ONLY PERMISSIBLE FOR A VEHICLE TO PASS ANOTHER VEHICLE USING THE PASSING PROCEDURE).
    - *A Blue Flag is shown to a competing vehicle that is impeding the progress of a faster vehicle.*
    - *Competing vehicle must pull into the slow side of the track, the passing lane and wait for further instructions.*
    - *Passing lane official must have the paddle in position indicating it is unsafe to proceed.*
    - *The faster vehicle continues on the racing line through the fast side of the track, outside the passing lane.*
    - *Once it is safe to release the slower vehicle the passing lane official removes the paddle, and the competing vehicle recommences the event.*
  11. Cone replacement procedure:
    - *As part of the safety briefing all officials are informed of the safe process for recovering and replacing cones.*
    - *Track marshals are allocated a certain portion of the track before and after their location where they will manage the scoring and replacement of cones.*
    - *This negotiation must ensure the cone replacing marshal is never in danger.*
    - *Cone Recovery:*
      - i. *Marshal should never leave the protection of the water barriers unless it is safe to do so, either:*

- a. *Red Flags are shown (called by the Event Captain) and competing vehicles have stopped, or*
- b. *Yellow Flags are shown, and the competing vehicles are slowed down. Approaching vehicles are at a safe distance (4 barriers away) from the marshalling point.*
- ii. *If it is not safe for an official to leave the protection of the water barriers, DON'T. If a cone is out of place, it is up to the drivers to avoid the cone. Only attempt to recover/replace the cone when safe to do so.*
- iii. *When approaching a cone, the marshal must always be well off-track facing oncoming traffic.*
- iv. *The cone should be collected and replaced quickly with the marshal always looking towards oncoming traffic.*
- v. *The marshal must then return to the safety of the marshalling point transiting well off track and watching oncoming traffic.*

12. Vehicle recovery procedure (marshal not recovery team).

- *As part of the safety briefing all officials are informed of the safe process for recovering a vehicle.*
- *When a competing vehicle is disabled or stopped near to a marshalling point, a Yellow Flag must be shown, and the recovery team notified by radio – at the marshalling point and at the preceding marshalling point.*
- *The marshals not holding flags proceed to the location of the stopped vehicle and assist the recovery team under the Recovery Event Captain's direction to move the vehicle off track so there is a clear path for the other vehicles. This may require the other vehicles to go off track under the direction of the officials.*
- *Other vehicles on track will proceed at walking pace through the yellow area.*
- *If this is not possible the recovery team will direct the appropriate action to allow other competing vehicles to pass. E.g., driving off circuit.*
- *Under direction of the recovery team the vehicle should be pushed or carried to a safe location.*
- *The track surface should be reviewed for debris or fluids and cleaned up by the recovery team (covered in the recovery documentation).*
- *Cones should be replaced.*
- *All marshals and officials should vacate to a safe location.*
- *Yellow flags are placed out of sight and the event continues.*
- *Vehicle Recovery:*
  - i. *Marshal should never leave the protection of the water barriers unless it is safe to do so, either:*
    - a. *Red Flags are shown (called by the Event Captain) and competing vehicles have stopped, or*
    - b. *Yellow Flags are shown, and the competing vehicles are slowed down. Approaching vehicles are at a safe distance (4 barriers away) from the marshalling point.*
  - ii. *When approaching an immobilised vehicle, the marshal must always be well off-track facing oncoming traffic.*
  - iii. *When the vehicle is recovered, the marshal must return to the safety of the marshalling point transiting well off track and watching oncoming traffic.*

13. Black Flag procedure - driver is not driving in a safe manner:

- *At the discretion of the Event Captain or Clerk of the Course a Black Flag may be shown to a driver.*
- *He exits the track following the directions laid out in section 14.*

- His time is stopped for safety reasons and the Clerk of the Course suggests appropriate driving behaviour.
- If the Clerk of Course is satisfied the driver is permitted to restart. The vehicle should be pushed to the starting point as mentioned in sections 6, 7 & 8.
- If the Clerk of Course is not satisfied, then the driver is disqualified. The vehicle should exit the area being pushed by the team using the push bar.

**14. Stopping or driver change - once a driver has completed their run:**

- On completion of the penultimate lap the driver is shown the last lap board by the Event Captain or qualified delegate.
- On completion of the last lap the driver is shown the chequered flag and stops.
- The vehicle must stop in the finish area and the engine must be switched off.
- The vehicle must be pushed out of the finish area by push bar. The vehicle must exit the track area before changing drivers or returning to the pits.
- Once in the change area the team prepares to change and on their indication the driver change event starts.
- Drivers must change position and the new driver must become fully restrained and ready to run.
- When the official is satisfied, they are ready and all restraints are checked, the competing vehicle can be restarted.
- The vehicle should be pushed to the starting point as mentioned in sections 6, 7 & 8.

**Cone knock over penalty guide:**

**Penalty Assessed**



**No Penalty Assessed**



Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.

## EV Recharging Station

Friday 9am - Sunday 5:00pm

The EV Recharging Station officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role, ask your work group leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Verify fire extinguisher and spill kit are in place and functional.*
  - *Every morning the Event Captain is to verify the charging area is clean and a fire extinguisher is in place and functional.*
2. Event
  - *Verify the competition vehicle is isolated and is accompanied by required team members including a fire extinguisher.*
  - *Competing team is to push their vehicle into the charging area positioning it in accordance with Event Captain's direction.*
  - *Team members responsible for the charging of their electric vehicle remain in the area and connect vehicle to power distribution point as per defined team protocols.*
  - *Remaining team member/members vacate the area followed by the Event Captain.*
  - *Competing team request to the Event Captain to re-enter the charging area once charging is complete or competition vehicle is required.*
  - *Team members responsible for the charging of their electric vehicle re-enter the area and disconnect vehicle from power distribution point as per defined team protocols.*
  - *Competing team are requested to re-enter the event area and push the competing vehicle to the next event in accordance with the event rules.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Fuel Station Event

Friday 9:00am - Sunday 4:30pm

The Fuel Station officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role, ask your work group leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Verify fire extinguisher and spill kit are in place and functional.*
  - *On hand over from build team the construction and function of the fuel station is as per specification verified by competent person.*
  - *Every morning the Event Captain is to verify the fire extinguisher and spill kit are in place and functional.*
  - *Every morning Event Captain verify fuel containers, decanting apparatus and equipment are in good condition and fully functional.*
2. Event – fuelling vehicle
  - *Verify the competition vehicle has the first 'tech' sticker, is isolated, and is accompanied by required team members including fire extinguisher.*
  - *Competing team is to push the competition vehicle into the fuelling area positioning it in accordance with Event Captain direction, then vacate the area.*
  - *Event Captain to instruct decanting of Fuel as per the event rules.*
  - *Competing Team are requested to re-enter the event area and push the competing vehicle to the next event in accordance with the event rules.*
3. Event – Disposal of unwanted fluids
  - *Teams may for various reasons have excess fluids and request safe disposal, the fuel station is responsible for this activity.*
  - *Any fluids brought to this area needs to be handed to a Fuel team member who will then safely transfer the fluids into the appropriate container for storage during the event.*
  - *At the end of the event the waste fluids will be disposed of by the crew responsible for packing up the site. In the case of Calder Park, there are suitable containers on site for this purpose.*
  - *Under no circumstances should these fluids be reused; disposal is the only options.*
4. Safe Refuelling practice:
  - *Introduction and Purpose:*
    - o *Vehicle and equipment fuelling procedures and practices are designed to minimize risks to all involved. Understanding the procedures for delivering fuel into vehicles, mobile fuel tanks, and storage tanks is critical for safety. Safety is always the priority.*
  - *Scope:*
    - o *These procedures are to be implemented at fuelling station.*
  - *Standards and Specifications (for vehicle and equipment fuelling)*
    - o *Shut the engine off*
    - o *Ensure that the fuel is the proper type of fuel.*
    - o *Note: it is recommended that vehicles are shaken during the fill process to ensure the fuel tank capacity is fully utilized*
    - o *Absorbent spill clean-up materials and spill kits shall be available in fuelling areas and on mobile fuelling vehicles and shall be disposed of properly after use.*

- Clearly post, in a prominent area of the facility, instructions for safe operation of fuelling equipment, and appropriate contact information for the person(s) responsible for spill response.
- *Spill Response*
  - Conduct clean-ups of any fuel spills immediately after discovery.
  - Uncontained spills are to be cleaned using dry cleaning methods only. Spills shall be cleaned with a dry, absorbent material and absorbent materials shall be swept up.
  - Collected waste is to be disposed of properly.

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Noise Test Event

Friday 9:00am - Sunday 12:30pm

The Noise officials' briefing is conducted each day at 8am. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role, ask your work group leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Verify fire extinguisher and spill kit are in place and functional.*
2. Ensure the competition vehicle has the first 2 'tech' stickers.
3. Line up the test vehicle at the start line.
  - *Vehicle should be pushed to start line and the engine only started when directed to do so.*
4. Instruct the driver to complete the engine kill switch and brake light test.
  - *Once the engine is on, **DO NOT** move in front of the vehicle for any reason.*
  - *Ensure the location of fire extinguishers and other fire equipment is known.*
  - *Ensure driver is wearing appropriate safety equipment.*
  - *Ensure driver is restrained and has helmet visor down.*
5. Driver is instructed to commence run when track marshals are in place behind barriers.
6. Once a vehicle has completed its run the engine must be turned off. The vehicle must be pushed back to the marshalling area by push rod.
  - *Ensure no team personnel to enter the test track until instructed by the event captain.*
  - *If a subsequent run is required repeat process from step 5.*
7. Once the vehicle has exited the competition area, ensure that area is ready for the next competitor.
  - *Any vehicle damage must be reported to the workgroup leader.*
  - *Clean any oil spills and sweep any oil dry clear of the track.*
  - *Return any cones or barriers that have been displaced to the correct position.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Parc Ferme

Sunday 1:30pm – 5:30 pm

### Officials’ Guide and Protocol for penalties to apply to a vehicle in Parc Ferme.

1. Vehicles may be inspected at random or at the specific interest or concern of officials.
2. Any reasonable measuring devices may be used in accordance with the practice at Technical Inspection, Noise or Fuel stations.
3. Any aspect of the vehicle may be checked against the rules, regardless of whether the aspect is included on the Technical Inspection schedule or not. TI does not cover all areas of the rules nor the full detail of all rules, however, the onus is always on the competing teams to ensure that their vehicle is in complete compliance to the rules, at all times during the event.

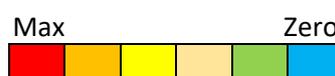
### Process for Assessment of Non-Rules Compliant Conditions which may occur.

- a) A Non-Compliant Condition (NCC) is identified on a vehicle.
- b) The NCC is an item which was checked at TI? Yes = Code TY.  
No = Code TN.
- c) The NCC probably occurred as a result of deliberate action rather than just due to vehicle operation without deliberate action. Yes = Code DY  
No = Code DN
- d) The NCC is an item which could affect Vehicle Performance? Yes = Code PY  
No = Code PN
- e) The NCC is an item which could affect Vehicle Safety? Yes = Code SY  
No = Code SN

### Indicative Penalty Matrix

	TY		TN	
	DY	DN	DY	DN
PY				
PN				
SY				
SN				

This table indicates the hierarchy of penalties.



Red: Disqualification from the Endurance and Efficiency Event.

Orange: Even though not measured at TI, for apparently Deliberate NCC's which affect performance or Safety it is appropriate to apply a significant penalty as vehicles must be within the rules, regardless of whether it is something that was checked at TI. The greater the level of variation, the greater the penalty that should apply.

If a dimensional item is within 3% of the rules, then a base penalty of 50 points will be applied.

For more significant deviations to the rules additional penalties will be applied

Additional penalties of either 50 points or 75 points will apply, dependent on the NCC being classified as Minor (>3% - < 8% deviation) or Major (>8%).

Yellow: For apparently non-Deliberate NCC's but which do affect performance or Safety it is appropriate to apply a meaningful penalty as vehicles must be maintained within the rules, and as checked at TI. The greater the level of variation, the greater the penalty that should apply. If an item is within 3% of a measurement at TI, this will be ignored as an NCC as it could be regarded as within reasonable measurement and repeatability errors.

A minimum penalty of either 75 points or 100 points will apply, dependent on the NCC being classified as Minor (<8% deviation) or Major (>8%).

Salmon: This code covers the group of actions whereby deliberate actions have been taken to create a variation to the rules for some reason, but there is no apparent Performance advantage or adverse Safety implications. This also covers items which may affect Performance or Safety but were not identified prior to Parc Ferme and which appear not to have arisen from deliberate action. Because of the resultant potential advantageous effect, and non-compliance with the rules and safety during the event, the team should receive some penalty.

A flat penalty of 50 points is proposed.

Green: Items checked at TI and have changed with usage or repairs or operation of the vehicle and no Performance or Safety effect results. Here again, teams should ensure their vehicles remain fully compliant with what was checked at TI and a flat penalty of 25 points will apply.

Blue: Will result in no penalty for the team. A warning would be given to the team that if a similar NCC occurs at next year's event, then a penalty will be applied.

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Pit Safety Officer

Thursday 12:00 noon - Sunday 5:00pm

The role of Pit Safety Officer does not work to a schedule. They are on duty at all times during the event as the majority of their role is considered “as required”. As with all positions, sign in on arrival at the Registration Office and attend the volunteer briefing at 8:00 am each day.

1. Ensure you have the correct PPE for your specific role and all safety equipment is in place and functional. Ask your work group leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, water bottle.*
  - *Read and be familiar with pit safety requirements as described in the Event Handbook.*
2. Event
  - *There are 2 nominated days when a pit safety inspection is required,*
    - o *An informal walk through on Thursday afternoon as teams set up, observing any inappropriate practices, and discussing them immediately with the team. No documentation is required, this is intended to start the students thinking about safe work practices. Remember that not all teams will have arrived on this day.*
    - o *A formal inspection is held on Friday morning whereby the Safety team (usually 2 people) inspects each pit in detail, advises the team where a non-compliance has been observed and document the non-compliance on the form supplied. Counsel the team on the corrective action required.*
    - o *Once all teams have been inspected, return the completed inspection sheets to Administration for safe keeping and possible later reference.*
  - *How to approach each team:*
    - o *Introduce yourself and advise the reason for your presence.*
    - o *At all times address the students politely and calmly, they want to do the right thing and are naturally excited by the prospects of the event, so help them to remain stress free.*
    - o *If necessary, refer to the Event Handbook to explain your request for corrective action.*
  - *For the remainder of the weekend, make informal tours of the pits, observing students’ activities and if required direct them on the appropriate safe practice. There is no need to document these tours, but a fool up is recommended to ensure compliance with your directives.*
  - *Should any team show a pattern of unsafe work practices, advise your group leader so that team can be dealt with at the appropriate level.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Practice Track Event

Friday 9:00am - Sunday 4:00pm

The Practice Track officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role, ask your work group leader if you are unsure exactly what is required
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Verify fire extinguisher and spill kit are in place and functional.*
  - *Ensure track surface is suitable for practice session to be conducted.*
2. All vehicles must be safe to run validated by Event Captain - ensure the competing vehicle has ALL 'tech' stickers attached.
3. Line up the test vehicle at the entry to the practice track.
  - *Ensure only one vehicle is in the practice area at any one time.*
  - *Vehicle should be pushed to the entry and the engine only started when directed to do so.*
  - *Ensure all spectators and team personnel are behind the barriers. No person shall be leaning or sitting on the barriers.*
  - *Once engine is running, **DO NOT** move in front of the vehicle for any reason.*
  - *Ensure driver is wearing proper safety equipment.*
  - *Ensure driver is restrained and has helmet visor down.*
4. Driver is instructed to commence practice when track marshals are in place behind barriers.
  - *Marshals to use green flag to alert driver to commence.*
5. Once a vehicle has completed its practice (maximum of 5 mins) the engine must be turned off inside the practice area. The vehicle must be pushed back to the track entry by push rod.
  - *Marshals to use appropriate flag to alert driver to stop.*
6. Once the vehicle has exited the competition area, ensure that the test area is ready for the next competitor.
  - *Any vehicle damage must be reported to the workgroup leader.*
  - *Clean any fluid spills and sweep any oil dry clear of the track.*
  - *Return any cones or barriers that have been displaced to the correct position.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Presentation Event

Friday 9:00am - 6:00pm

### **\*Note Pre-Event work required\***

The Presentation officials' briefing is conducted at 7:30am on Friday. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

#### 1. Pre-Event:

- *Understand the concept of the FSAE-A: The concept behind Formula SAE-A is that a fictional manufacturing company has contracted a student design team to develop a small Formula One style race car. The prototype race car is to be evaluated for its potential as a production item. The target marketing group for the race car is the non-professional weekend autocross racer. Each student team designs, builds, and tests a prototype based on a series of rules, whose purpose is both ensuring on-track safety (the cars are driven by the students themselves) and promoting clever problem solving.*
- *Check a timetable to understand when you are judging & having break, if there are any issues, let the Event Captain know about it.*
- *Briefly read over once again the business logic case you have were provided for the incoming team prior to the event to refresh your memory.*
- *Familiarise yourself with the assessment criteria prior to the commencement of the first presentation.*

#### 2. During the presentation:

- *Concentrate to evaluate how well the presenters are following their business logic case. This is critical to assess their presentation.*
- *Place specific emphasis on how well the team presented their overall business proposition, financial plausibility of numbers and volumes, as well as their rationale for choice of vehicle design. Technical information will be required to a certain extent but bear in mind this isn't the design or cost event.*
- *Do not interrupt the students' presentation. Wait until they are finished to ask questions.*
- *There is 5 minutes allotted time to ask questions at the end of the presentation.*

#### 3. After the presentation

- *Question any unclear items in their business logic case and discrepancy between the business logic case & the contents of the presentation. If they have changed their approach, ask why.*
- *Score the presentation and make feedback. Please note that the score sheets are returned to the teams after all business presentations thus, please do not leave any comments you would not like to be published. Scrap paper will be provided to be used as a draft.*
- *Make sure that the presentation is graded immediately after the team leaves the room.*
- *Discussion between judges can be held at the end of each presentation and scores can be reviewed later, if required.*

Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.

## Protest Committee

Saturday 9:00am - Sunday 6:00pm

If it is your first time on the protest committee, you will be contacted prior to the event and details of the process involved will be explained to you in greater detail. This means there is no briefing for the protest committee position, but all members must attend the daily officials briefing at 8am.

The role of the protest committee is to act as the final point of resolution for issues raised by teams relative to rules compliance and interpretation; event protocols; judges scoring; actions of officials or any other matter which may influence the final results outcome.

It is the desire at each event for this committee to not have to be convened but, if a formal protest on eligibility, rules or results is submitted by a team, the committee will meet and provide a final binding resolution on the protest.

Often a preliminary review or discussion with officials and one or members of the Protest Committee will enable clarification of issues without a formal protest needing to be submitted.

Membership of the protest committee usually comprises a mix of persons with OE company automotive engineering experience; detail knowledge of the rules and familiar with practices at other FSAE events; and motorsport administration. Members will always try to provide education and examples about issues with teams as a first step rather than convening to make final resolutions.

### 1. During the event:

- *If a team has an issue with published points results; relative placing in an event; or ruling of an official(s) which they believe affects their relative score or ranking; in the first instance they will consult administration to register their issue.*
- *If it is a simple administrative issue or obvious mistake, administration will check with the Event Captain and scoring and, if in agreement, a correction made.*
- *If it is a more complex issue and not a mistake correction, administration will advise the protest committee chairperson who may decide to speak to the team (possibly with the captain of the event concerned) to explain the rules or rationale if it appears there may be a misunderstanding by the team.*
- *If the team is not satisfied following any initial discussion; or if their complaint is about specific actions of officials or other teams, they will be advised to enter a formal complaint and to have their faculty advisor concur in the complaint being registered.*
- *Teams making a formal protest must put up a bond of **25 points** which will be forfeited if their protest is not successful. Teams will be advised that the ruling of the protest committee is final and no further avenues for resolution are available.*
- *The full protest committee will then be convened. They may interview the team; other teams; officials; and affected Event Captains; in making their decision.*
- *The final decision will then be advised to the Faculty Advisor of the team by the protest committee.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Public Address Announcer

Saturday 8:00 am - Sunday 5:00pm

The role of Public Address Announcer is required to remain at the Administration Office at all times to make public announcements as required. Sign in on arrival at the Registration Office and attendance at the volunteer briefing at 8:00 am each day is required.

Typically, there are 2 types of announcements:

- Ones that are scheduled as per the run sheet supplied by SAE-A head office.
  - And ones that are ad hoc and required from time to time (public interest, comments, reminders, etc.).
1. No specific PPEs are required for this role however ask your group leader if you are unsure exactly what is required.
    - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  2. Event
    - *SAE-A Head office will supply the daily run sheet, including Public Address announcements at specific times.*
    - *Additional announcements will be requested as required from senior members of the organisation.*
    - *The person in this role needs to be able to speak in a coherent voice to ensure the message is received as required.*
    - *Appropriate and professional language must be used at all times and the messages conveyed must be relevant to the event.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Scoring Captain Role

Friday 8:15am – 5:30pm

### **\*Note Pre-Event work required\***

The Scoring officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Pre-Event:
  - *Ensure you have the Master Spreadsheet, and perform any maintenance as required.*
2. During the event:
  - **Static Events:**
    - i. *Over the course of Friday and Saturday, the Scoring Captain will be provided with the static event scores from the respective Event Captains. The static events are Design, Cost and Presentation.*
    - ii. *Upon receiving the scores:*
      1. *Ensure the final scores (including maximum values, where applicable) are consistent with what is expected in the Rules. If there are any questions or concerns, contact the Event Captain.*
      2. *Copy the scores into the Master Spreadsheet and cross-check all applicable tabs.*
      3. *Provide the Event scores to the Communications team, who will distribute the scores to teams appropriately.*
  - **Dynamic Events:**
    - i. *Ensure you are familiar with the:*
      1. *Timing team, who will provide raw timing data for later processing.*
      2. *Clerk of Course, their assistant and the Event Captain. They are key contacts to distributing and collecting dynamic penalty sheets (Cones and Off-Course).*
      3. *Fuel Station team for fuel consumption data.*
      4. *Safety requirements of entering the Hot Area and the Fuel Station.*
    - ii. *For each dynamic event:*
      1. *Ensure the Clerk of Course has the dynamic penalty sheets (for Cones Down/Out and Driver Off Course counting) for distribution to check point stations.*
      2. *At the end of each event, ensure you collect the following:*
        - a. *Raw timing data from the Timing Team*
        - b. *Penalty Sheets from the Clerk of Course/Event Captain*
        - c. *Fuel data from the Fuel Station team (for Endurance only)*
      3. *Populate the Master Spreadsheet using the data collected above, and cross check applicable tabs. Some data may require pre-processing and/or checking before entering the spreadsheet.*
      4. *Cross-check all calculations against the applicable Rules.*
3. At the completion of the event:
  - *Provide final results to the presenter of the ceremony, and to the communications team for distribution.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Skid Pan Event

Saturday 12:30pm – 3:00pm

The Skid Pan officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role, ask your work group leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Verify fire extinguisher and spill kit are in place and functional.*
2. Ensure the competition vehicle has the ALL 'tech' stickers.
3. Line up the test vehicle at the entry to the skid pan track.
  - *Ensure only one vehicle is in the practice area at any one time.*
  - *Vehicle should be pushed to the entry and the engine only started when directed to do so.*
  - *Ensure all spectators and team personnel are behind the bunting. No one shall be leaning or sitting on the barriers.*
  - *Once engine is running, DO NOT move in front of the vehicle for any reason.*
  - *Ensure Driver is wearing proper safety equipment.*
  - *Ensure driver is restrained and has helmet visor down.*
4. Driver is instructed to commence the event when track marshals are in place behind barriers.
  - *Marshals to use green flag or some method of alerting driver to commence.*
5. The marshal controlling vehicle exit from skid pan must remain behind the safety barrier whilst removing track exit cone.
  - *The exit cone shall be replaced only once the vehicle is stationary and the engine is killed.*
6. Once a vehicle has completed the event the engine must be turned off inside the skid pan area. The vehicle must be pushed back to the track entry by push rod.
  - *Marshals to use appropriate flag or hand signal to instruct driver to stop.*
7. Once the vehicle has exited the competition area, ensure that area is ready for the next competitor.
  - *Any vehicle damage must be reported to the workgroup leader.*
  - *Clean any oil spills and sweep any oil dry clear of the track.*
  - *Return any cones or barriers that have been displaced to the correct position.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Technical Inspection

Thursday 1:30pm - Saturday 3:00pm

The Technical Inspection (Scrutineering) officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role, ask your work group leader if you are unsure exactly what is required.
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Verify fire extinguisher and spill kit are in place and functional.*
2. Event
  - *Vehicles inspected include both Internal Combustion engine powered as well as battery powered Electric Vehicles.*
  - *Vehicles must abide by a certain set of governing FSAE and FSAE-A rules.*
  - *Event Captain will verify the competition vehicle is isolated and is accompanied by required team members including a fire extinguisher.*
  - *Competing team will push the competition vehicle into the scrutineering area positioning it in accordance with Event Captain's direction.*
  - *Competing team is to vacate the immediate area until called upon to clarify a technical aspect.*
  - *Following scrutineering activity Event Captain conducts timed vehicle exit as per the event rules.*
  - *Competing team are requested to re-enter the event area and push the competing vehicle to the next event in accordance with the event rules.*
3. Inspecting the vehicle
  - *Complete vehicle inspection is undertaken to ensure the vehicle meets all the regulations.*
  - *You will be provided with a checklist of safety requirements teams need to adhere to, in accordance with FSAE rules and the Australasian Addendum.*
  - *You are to inspect the vehicle against these requirements, ticking off those they meet, and highlighting any shortfalls to your Event Captain.*
  - *Should the vehicle not pass inspection, teams are required to take their vehicle away to work on and bring it back for re-scrutineering at a later time.*
  - *If teams are successful and meet all requirements of the inspection, they receive a completed 'Technical Inspection' sticker.*
  - *Component failures and damage to any "crashed" vehicles during the event are inspected and we ensure that a suitable safe fix is carried prior to allowing the vehicle back into the event. Consult with your Event Captain if a "crashed" vehicle returns to Technical Inspection.*
  - *On occasions you may be selected to inspect vehicles for leaks/damage/ etc. as the vehicle comes in for driver change within the dynamic events area.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Tilt Table Event

Friday 9:00am – Friday 5:00pm

The Tilt Table officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to sign-in, be briefed, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

### 1. Preparation:

Ensure you have the correct PPE for your specific role, ask your Event Captain if you are unsure of exactly what is required.

- *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
- *On hand over from facilities team, the operation and function of the rig is as per specification (including being set up level in both planes).*
- *Ensure safe zones for event teams are clearly identified.*
- *Every morning the Event Captain is to verify that the fire extinguisher and spill kit are in place and functional, all temporary entry/exit ramps are positioned correctly, lateral support, restraining straps and that the Tilt Table is operational.*

### 2. Event:

**Prior** to the competition vehicle entering the secured area:

- *Verify that the competition vehicle has the first "tech" sticker verifying that it has passed scrutineering and is accompanied by the required team members who must have the required safety equipment (fire extinguisher).*
- *Check that the team manager has completed their details on the "Tilt Table Forms".*
- *Fuel level is to be checked to ensure it is at the correct level between the sight tube gauge marks prior to the vehicle being pushed onto the Tilt Table. If the fuel level is not correct, the competitor manager will be instructed to have their vehicle refuelled to the correct level prior to the tilt table test.*
- *The team manager will be advised that the vehicle will be pushed on to the tilt table with the fuel filler located to be on the lower side of the tilt test. This may require the team to reverse the vehicle onto the table.*
- *NB: for Electric Vehicles, the Event Captain will ensure the electric vehicle is neutralised prior to entering the Tilt Table area.*

**Tilt table test:**

- *Competing team is to push the vehicle on to the tilt table positioning it in accordance with the event captains' direction then assist the driver to ensure they are correctly secured and are wearing the correct attire for the test, then vacate the test area.*
- *The event captain is to verify the correct driver is located in the vehicle, is fully restrained, and is attired as specified in the event rules.*
- *Event Captain is to position lateral supports against the side of the vehicle's wheels.*
- *Event Captain is to apply the rollover restraining strap to the vehicles roll hoop and verify the strap is securely attached to the rig with minimum slack.*
- *Event Captain will check that all safety devices are installed and correctly in place, only official tilt table team members are within the secured area prior to commencing the tilt test.*
- *Event Captain activates the Tilt Table to the 45Deg. angle, activating safety drop mechanism prior to checking the vehicle for fluid leaks (fuel, oil, water, brake fluid, grease) and technical / safety compliance items (loose nuts and bolts, incorrectly installed fittings, fixtures and bolts,*

welds, anchor points for safety harnesses). **NB:** Should there be any fuel leakage while activating the table, the table must be stopped and dropped immediately. The team will be advised that the remainder of the test cannot proceed until the fuel leak has been rectified, their vehicle will be removed from the table and they will have to re-present their vehicle.

- Should there be any “Technical and / or Safety Items” identified during the 45Deg test, the Event Captain should notify the Tech Inspection Captain for any clarification or further direction required.
- Once the Event Captain is satisfied that all the required tests for the 45Deg angle have been satisfied, the Tilt Table is activated up to the 60Deg. angle, to check the dynamic stability of the vehicle. The event captain will check to ensure that all the wheels remain in contact with the tilt table as required by the regulations.
- Event Captains’ team is positioned at all times to observe both tests verifying the vehicle is safe and compliant to proceed to the next event.
- Once the test is completed, the safety drop mechanism is secured into its holding bracket, the rig is returned to the ground, the lateral supports to the wheels are relieved and the safety rollover strap is removed.
- Vehicle does not pass test – Event Captain advises the team manager of reasons for failure, does not sign competitor’s event paperwork, and lists non – compliance items on their inspection sheet. The team will have to re-present their vehicle once the defect has been rectified. Event Captain records the reasons for the failure on the Tilt Table master running sheet.
- Vehicle passes test - Event Captain signs competition vehicles event paperwork.
- Event Captain affixes the second “tech” sticker.
- Competition team are requested to re-enter the event area and remove the vehicle from the tilt table area.

Please ensure you report any hazards or suggestions for process improvements to the event captain.

Equipment check list:

Drill for positioning lateral supports for wheels – including chuck adaptor		
Adjustable safety restraining strap		
Liquid spill kit and broom		
Fire extinguisher		
Riggers gloves		
Sun protection – sunscreen & hat		
Paperwork – tech stickers, pens, clipboard/folder to retain paperwork, running sheet spreadsheet		
Communications radio		

## Vehicle Recovery

Saturday 8:45am - Sunday 5:00pm

The Vehicle Recovery officials' briefing is conducted at 8am each day. Please ensure you arrive in the morning to be briefed, sign-in, collect all necessary equipment for your event and have time to hydrate and apply sunscreen.

1. Ensure you have the correct PPE for your specific role, ask your work group leader if you are unsure exactly what is required.
  - *Heavy cotton orange overalls, hat, gloves & closed toe shoes.*
  - *Make sure you are adequately protected against the sun i.e., sunscreen, hat, drinking water.*
  - *Before autocross and endurance Event Captain is to verify that recovery equipment, fire extinguisher and spill kit are in place and functional.*
2. Event
  - *Recovery vehicle is positioned at vantage point overlooking all the track (or as much as possible from the one vehicle), with the Event Captain and assistant located in or next to the vehicle.*
  - *When required, the Event Captain assesses the occurring incident, making a decision on the appropriate recovery procedures and medical / fire tender attendance.*
  - *Event Captain and or assistant are to ensure other competing vehicles are being appropriately managed by track marshals.*
  - *Event Captain and or assistant proceed to disabled competing vehicle.*
  - *Event Captain and or assistant disable competing vehicle.*
  - *Event Captain and or assistant recover by pushing or lifting as is appropriate. Placing the disabled competing vehicle in a position well off the racing line.*
  - *Event Captain and or assistant return to the designated best track vantage point.*
3. Post recovery clean up
  - *Event Captain to review actions required to clean track instructing track marshals and team on clean up method and traffic management strategy, or request Clerk of Course to stop proceedings until track surface is safe.*
4. Post Event
  - *Event Captain instruct plans to recover disabled vehicles to their pit bays. This may include pushing /recovery by competing team or lifting on to the back of the recovery vehicle.*
  - *If recovery by lifting is required Event Captain must assemble a team and advise safe lifting protocols prior to lifting competing vehicle.*
  - *When located on the back of the recovery vehicle the competing vehicle should be appropriately restrained.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Volunteer Coordinator

Friday 8:00 am - Sunday 5:00pm

The role of Volunteer Coordinator does not work to a schedule. They are on duty at all times during the event as the majority of their role is considered “as required”. As with all positions, sign in on arrival at the Registration Office and attend the volunteer briefing at 8:00 am each day.

1. No specific PPEs are required for this role however ask your group leader if you are unsure exactly what is required.
  - a. *Make sure you are adequately protected against the sun i.e. sunscreen, hat, drinking water.*
2. Event
  - *SAE-A Head office will supply charts each day with each event and the volunteers assigned to those events. For various reasons things change and it is necessary to move people around to fill gaps as they arise.*
  - *Each morning as volunteers arrive for sign in, check them off against their assigned event and advise them accordingly where they need to go after the Volunteer briefing.*
  - *Should vacancies arise, you need to reassign people to fill the gaps, however a few tips on who to select and where to assign them.*
    - o *Liaise with the event captain on any shortfalls in their volunteer needs.*
    - o *Determine the type of person required (skills) and ensure the reassigned person is comfortable in that new role.*
    - o *Events that run to a schedule should be filled first as insufficient volunteers may delay the start of that event.*
    - o *If unsure, ask the event captain.*
    - o *Once a person has been reassigned, mark up the wall chart so you know where everyone is.*
  - *Once the events are underway, continue to communicate with the event captains to ensure adequate volunteers are assigned. At this stage, the event captains may be fully occupied, so it may be necessary to approach the static and dynamic event managers instead.*
  - *Should new volunteers arrive throughout the day, review the needs of each event running on that day and assign them as required. Remember that they must be equipped with the appropriate PPE, as a minimum they should be given a safety vest available from Administration.*

*Please ensure you report any hazards or suggestions for process improvement to the relevant personnel.*

## Radio Protocols

For all volunteers that will be using a radio

FSAE-A uses UHF short wave radios and although we have exclusive use of our frequency, always act as if the opposite is the case.

The following protocols are intended to assist volunteers in the correct use of radios during the event.

**Channel 1** – General Communication

**Channel 2** – Track Officials

When operating the radio remember to follow these simple guidelines:

1. *As with all CB radios, first press the talk button, keep your mouth approximately 50-75mm from the handpiece, wait 2 seconds, then start talking.*
2. *Identify yourself and who you wish to speak to.*
3. *Once you finish speaking, close the microphone, and await the response. When using a two-way radio, you cannot speak and listen at the same time, as you can with a phone.*
4. *Remember that single conversations only are possible with this technology, no one else within range can communicate whilst your microphone is open. Please ensure that you are not accidentally engaging your microphone.*
5. *Keep the conversation brief and relevant, radios are not for personal discussions, attempted humour, or other non-relevant topics.*
6. *If necessary, request that any radio users go to another channel (recommend channel 3) if the conversation is expected to take too long.*
7. *Avoid sensitive topics, such discussions should be held face to face where possible.*
8. *At all times avoid inappropriate language or comments, you are a representative of SAE-A.*
9. *Do not interrupt if you hear other people talking. Unless it is an emergency, wait until their conversation is finished. If it is an emergency, inform the other parties that you have an urgent emergency message and must use the line.*
10. *Make your conversations as concise, precise, and clear as possible.*
11. *Avoid long and complicated sentences. If your message is long, divide it into separate shorter messages.*
12. *Your voice should be clear. Speak a little slower than normal, in a normal tone and without shouting.*

### **An example of poor radio communication:**

*“Hi guys whoever is in charge of water can you send us some bottles over here please, it’s John and I’m at the area where Tech Inspection is done, over behind the grandstand”.*

### **An example of good radio communication:**

*“John Smith from TI looking for Dave Smith. Dave, we require 5 bottles of water when possible, please”.*

If you are at any stage unclear or unsure about the process, which channel you should be talking on, or who you should be talking to, ask the nearest senior official for assistance.

## Safety Officer

### For the volunteer Safety Officer

The role of the Safety Officer is to be an adviser to the Event captains, the officials, and the Event Organisers on all Safety issues.

The event is conducted under the direction of the Safety Manual, which has been developed over many years and updated as required.

Therefore, the Safety Officer is required to.

1. *Review the current Safety Manual.*
2. *Consider any improvements or modifications based on both their experience and observations as well as the feedback from the on-the-ground officials.*
3. *Conduct risk assessments on any new event introduced by the Organising Committee (such as Autonomous Class, etc,)*
4. *Assist officials in the correct creation of new Risk Assessments as required*
5. *Make recommendations of any safety improvements pertaining to the conduct of the Event.*