



Wildcat Formula Racing - Test Day Operations

Purpose:

This document outlines procedures, etiquette, and responsibilities for WFR test days. Its purpose is to ensure operations are efficient, safe, and productive while maintaining professionalism and strong coordination. Any member of WFR attending a testing event is required to read this document and sign the agreement to adhere to these rules.

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Test Day At-A-Glance

Testing days will operate two vehicles (WF-26 and WF-25) in a controlled parking-lot environment with two driving bays and a shared hot pit. Only one vehicle may be released at a time. All vehicle releases require both technical approval and track clearance

Authority & Chain of Command

During active testing, all operational decisions flow through the Test Day Lead and Pit Chief.

1. Test Day Lead - release and track authority
2. Pit Chief(s) - technical authority
3. Vice President
4. Subteam Leads (in specific domains)
5. Mentors (in specific domains)

Emergency override rules: ANYONE may call HOLD

Roles and Responsibilities

Role	Responsibilities
Test Day Lead (President)	Drive trailer, oversee schedule, safety, and communications, final OK for car to drive
Pit Chief (Technical Director)	Perform final bolt check, oversee set-up, gives technical OK for car drive
Vice-President	Assist in communications with all members/spectators, safety, and schedule. Calls 911 if an emergency occurs
Aero Lead	Perform installation and final check for body panels and aero devices, and collect data on relevant components
CCSB Lead	Check braking system, outfit drivers, belt drivers in, oversee collection of braking data
Drivetrain Lead	Perform checks on all relevant components, etc
Frame Lead	Check the frame for any defects, cracking, etc
Powertrain Lead	Check fuel/coolant/oil levels, perform car warm-up, powertrain



	data logging, etc
Suspension lead	Verify suspension set-ups, adjust, and help document changes for each run
Electrical Lead	Perform harness check, lead all data logging activities, charge batteries, etc
Marketing Lead	Capture photos/video, documentation for media
Track Marshall (x4)	- Wear a high viz vest - Carry a fire extinguisher - Keep eyes on driving cars at all times. - First responder if car stops or breaks down
Main Pit Scribe (x2)	- Document set-up data - Receive callouts for data input - Stay in the main pit tents while cars are prepping to drive
Hot Pit Scribe (x1)	- Documentation of relevant data - Receives callouts for pre-run data to input - Time stamps (engine start, wheels rolling) - Keeps a fire extinguisher within arm's reach, responds to fire if it occurs
Track Scribe (x2)	- Stay on track with the Lap Timer at the start line of the event - Document driver performance data - Input laptimes from the Lap Timer
Lap Timer (x2)	- Stays with Track Scribe at the start line of the event - Uses stop watch to time laps for acceleration, skid pad, autocross, and endurance - For endurance, keep 2 stop watches running, one for overall time, one for each lap
Driver Interviewer (x1)	- After a driver completes a run and is out of the car, ask the series of questions to get driver feedback - Record data into database

- All mentors will be responsible for their focus area, but will also shadow their lead and take notes when necessary
- Members are expected to defer to their designated lead while performing test-day duties.



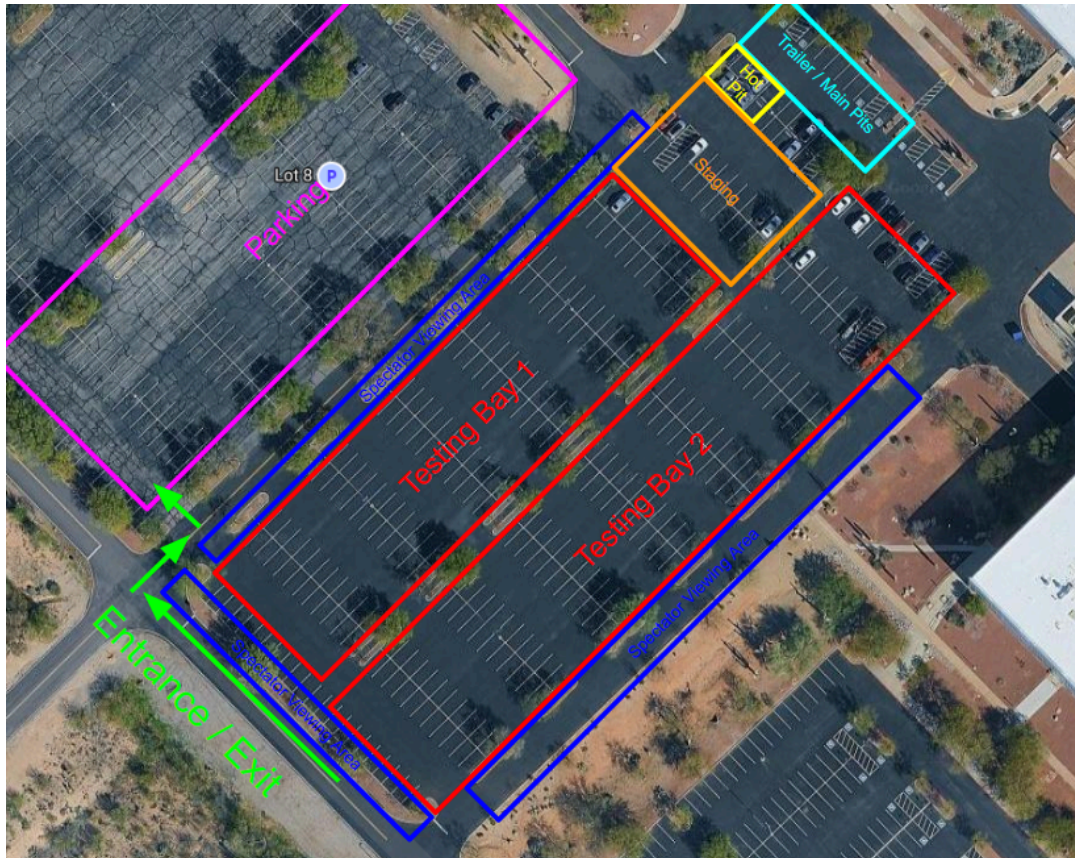
Hot Pit Roles

4 members maximum, including driver, designated by RED LANYARDS

Pit Chief	- Bolt checks the entire car - Safety checks for driver (harness, steering wheel on straight, helmet buckled, etc) - Check for leaks, excessive heat, brakes, etc - Final technical OK
Vehicle Dynamics Lead	- Check suspension settings - Check tire pressures - Check alignment - Give callouts to the scribe
Powertrain Lead	- The car is behaving properly on start-up - No leaks, no high temps, all data through Motec is consistent - Throttle response is good - Data logging armed - Give callouts to the scribe
Driver	- Get into the car, buckle the harness, and adjust if needed - Starts the car - Confirm the working order of the gas, brakes, clutch, and steering - Waits for warm-up and final checks to be completed - Radio check, and confirmation of what will be tested during the drive - Immediate post-run feedback



Site Layout



- = Driving area
 - DO NOT ENTER
 - Only Marshalls with High Viz vests allowed
- = Trailer / Main Pits
 - All WFR members allowed
 - 2 pits, one for each car
 - Spectators allowed during breaks
- = Hot Pit
 - Only members with RED LANYARDS are allowed
 - Car ignition and send out
- = Staging
 - Cars will be starting and finishing runs here
 - Keep clear when possible
 - Speed Limit = 20MPH
- = Spectator areas
 - Spaces where any spectators can remain during driving
 - All sponsors, alumni, friends, and family



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Safety Procedures

- Lanyards for hot pit members (4, including driver, just like comp)
- High viz jackets and fire extinguishers for members around the driving area
- At least 2 fire extinguishers around the car at all times
- Any members in the hot pits or helping in the driving area must be wearing pants, safety glasses, and closed-toed shoes (cover-alls and welding jackets work)
- Members who are spectating will need to stay in the designated areas and not enter the paddock area (unless requested) or hot pit area
- No running in pits or near cars

Track Marshal Signals

Hand signs:

- If the car stops on the track, the marshal taps on the top of their head and asks for a response from the driver. If the driver taps their head, the driver and car are okay to continue

Emergency response:

- If the car stops on the track or visual damage/leak/fire is spotted, the marshal waves hands to signal STOP and rushes to the car with a fire extinguisher
- Once the car is stopped, the driver must egress immediately
- All Marshalls in range will react to a car emergency

Fire Extinguisher Placement

- 1x in each main pit (2 total)
- 1x in hot pit AT ALL TIMES
- 2x in each driving bay (held by marshals in the center of the driving area)

Spectator Expectations (Sponsors, Alumni, Friends, Family)

- No entering pits without permission
- Photos are welcome and encouraged
- No entering driving areas, especially in the event of a crash or breakdown
- Speak with the Test Day Lead (orange vest) or the Vice President for any questions



Hot Pit Procedures

- Once the car is prepped in the main pit box, the car will be rolled, with the driver in the car, to the hot pit tent (about 10-15 yards away from the main pit)
- Only members with the RED LANYARDS are allowed to be in the hot pit (Pit chief, Vehicle Dynamics lead, Powertrain Lead, Driver, and the Scribe is just outside the tent taking data)
- Members for the roles of Powertrain Lead and Vehicle Dynamics Lead can be switched out by passing the lanyards off, but we want to keep this to a minimum
- This is just a pit for FINAL checks
- Once bolt checks are done, the car is warmed up, pre-run data is logged, and driver safety is confirmed, Pit Chief will give the final technical OK to the Test Day Lead
- Test Day Lead will confirm the track is clear with the course marshals, and return an OK call to the Driver and Pit Chief
- The Test Day Lead will give the final OK over the radio, and the driver rolls out

Pit Assignments

- Only one car may be released at a time
- Only one car may occupy the hot pit at one time
- Priority rules; WF-26 over WF-25

Pit 1

- WF-26
- Radio Callout = "Car 30"
- Current officers

Pit 2

- WF-25
- Radio Callout = "Car 100"
- Old officers and upcoming officers

Communication Protocol

- Radios distributed to: President, Technical Director, Driver
- Keep messages short and clear; no unnecessary chatter
- Only the President calls "Go" for runs
- "STOP" call means immediate halt
- After testing, data and notes are uploaded to the drive



Radio Etiquette

- Applies to the startup and final release before vehicle operation
- Car numbers: #30 for WF-26, #100 for WF-25
- Course = Acceleration, Skidpad, Autocross
- Authority: Test Day Lead, Pit Chief

Radio Check

- Test Day Lead: "Car 30, radio check."
- Driver: "Car 30, radio confirm."

Engine Start

- Pit Chief: "Car 30, clear to start."
- Driver: "Copy. Starting."

Technical Release

- Pit Chief: "Car 30, tech inspection passed."
- Test Day Lead: "Copy, tech passed."

Clear Track

- Test Day Lead: "Confirm clear track bay [1 or 2], [COURSE]."
- Relevant Marshals: "Copy, track is clear."

Final Release (GO / NO-GO)

- Test Day Lead: "Car 30, all systems green. Bay [1 or 2], [COURSE]. You are released."
- Driver: "Copy green. Bay [1 or 2], [COURSE]."

Abort / Hold (Any Crew)

- "Car 30, HOLD HOLD HOLD."
- Driver: "Copy hold."

Return to Pit

- Test Day Lead: "Car 30, box this lap."
- Driver: "Copy. Boxing."

Mandatory Radio Language

- Immediate stop: "HOLD HOLD HOLD"
- Unsafe condition: "RED FLAG"
- Fire: "FIRE FIRE FIRE"



Notes for Two-Car Operation

- Always lead with the car number
- Never say "you" without a car ID
- Only the Pit Chief releases cars
- No cross-talk between cars on release calls.

Standard Release Phrase

- "Car __, all systems green. Bay [1 or 2], [COURSE]. You are released."

Data & Documentation

- Utilize the data sheet for each session
- New driver or new event = new RunID
- If you cannot get notes into the sheet immediately, write them down on paper or in the Notes app
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Tentative Itinerary:

Time	Task
8:00am	Officers get to shop to finish packing subteam boxes and get the car into the trailer
9:00am	Drive main trailer out to Tech Park and pick up Uhaul
9:30am	Unload trailer and set up testing area - put up tents, tables, chairs - unload the car - set hot pits, paddock, and viewing areas (cones) - Set up cones for specific events we are testing
10:00am	Morning briefing and roll call
10:15am	Check stickers for bolt check and finalize driving prep (document all of it) - check coolant, oil, fuel, brake fluid - tune suspension, engine



	- check tire pressure
10:45am	Begin testing
5:00pm	Wrap up testing and pack up (at the latest) - Gather final data as other items are being put away
5:30pm	Drive back to AME
6:00pm	Unpack the trailer into the shop, return the Motorpool and U-Haul equipment
6:30pm	Store documentation, debrief, and go home

End of Day Wrap-Up

1. Car cleaned and visually inspected before loading
2. Debrief meeting (10 minutes):
 - What worked / what didn't
 - Component failures or issues
 - Data review plan
3. Return all equipment to designated shop areas
4. Record attendance and store documentation

Contingency / Weather Plan

- If rain: switch to wet tires and suspension set-up (ensure electronics are safe)
- If mechanical failure: stop all testing, fix, re-do bolt checks for failed component(s)
- Always have food and water available



Trailer Packing List

- ☐ Sonic/Husky Toolbox
- ☐ 1 Dry set of tires
- ☐ 1 Wet set of tires
- ☐ Shop towels
- ☐ Brake fluid
- ☐ Engine oil
- ☐ Fuel (E85 and unleaded, when applicable)
- ☐ Hardware boxes
- ☐ Driver-gear box
- ☐ Subteam-specific boxes (2 max per)
- ☐ Tire pump
- ☒ ~~Push bar~~
- ☐ 6 jack stands
- ☒ ~~2 Fold up tables, 4+ folding chairs~~
- ☒ ~~2-3 tents~~
- ☐ Cooler (ice + waters)
- ☒ ~~Grill or crock pot for meals + food (or catering ordered beforehand)~~
- ☒ ~~Spec sheets for the current setup~~
- ☐ Sandbags/Stock Metal
- ☐ Generator
- ☒ ~~High viz vests (8 minimum)~~
- ☐ Coveralls and welding jackets (5x minimum)
- ☐ Batteries
- ☒ ~~Trash Bags~~
- ☐ Thermometer guns (2 minimum)
- ☒ ~~First aid kit~~
- ☒ ~~Safety glasses (NEED OVER THE GLASSES EYE PRO)~~
- ☒ ~~Ear Protection~~
- ☐ Radios + batteries + chargers
- ☒ ~~Gloves~~
- ☐ Water
- ☐ Trailer + truck keys
- ☐ Lanyards
- ☐ Fire Extinguishers



Schedule with goals/events

Event	Date	Focus	Participants
Test Day 1	11/2/25	- Test WF25 car powertrain, electrical focus - Suspension practice setups - Full comp run thru, all events - Data collection	- Officers - Mentors - 1 Alum (Nathan)
Test Day 2	3/8/26	- Run autoX, skidpad, and acceleration in the morning - Endurance runs (x2) in the afternoon - Adjust aero, brake bias, suspension for setup optimization - Test brake pads get driver feedback	- Officers - Mentors - Members - Alumni - Sponsors
SW Shootout	3/14/26	- Run both cars - Competition, not testing - One comp pit, one junior pit	- Officers - Mentors - Members - Alumni - Sponsors - Friends / Family
Test Day 4	3/28/26	Location: Nissan Testing Facility - Run both cars - Do the same events as ASU, GCU	TBD
Test Day 5	4/12/26	TBD	TBD
Test Day 6	4/26/26	TBD	TBD



Appendices

Bolt Checklists

- Suspension hardware
 - A -Arms ____
 - Toe Rods ____
 - Push rods ____
 - Jam Nuts ____
 - Rocker safety wire ____
- Drivetrain hardware
 - Bolts on uprights ____
 - Brake caliper bolts ____
 - Rotor Bolts ____
 - Castor nuts – w cauter pin ____
 - Diff mounts ____
 - Sprocket hardware ____
- Powertrain hardware ____
 - Fuel rail ____
 - Fuel fittings ____
 - Fuel tank bolts ____
 - Coolant system ____
 - Engine mount bolts ____
 - Oil pan bolts` ____
 - cover bolts ____
 - intake bolts ____
 - exhaust bolts ____
- CCSB ____
 - Harness mounting hardware ____
 - Steering rack ____
 - Brake lines ____
 - Pedal tray mounts ____
 - Shifter mount ____
 - Pedal tray – brake pedal assembly ____
 - Pedal tray gas pedal assembly ____
- Frame
 - Check that rivets are not damaged on firewalls/floor panels ____
 - Clean the car of any loose hardware, tools, rocks, etc... ____
 - Later – check for damage to paint, indicating rubbing/ wear ____



Secondary check – Fluids

- Powertrain
 - Coolant level ____
 - Oil level ____
 - Gas level/age ____
 - Chain lubrication ____
- CCSB
 - Brake fluid ____
- Drivetrain
 - Diff fluid ____
 - Tripod bearing grease ____

Tertiary Checks – Wear

- Chain wear ____
- Brake Pads ____
- Rotors ____
- Tire Wear ____

Testing Schedule / Bolt Check

[+ WFR Testing Schedule](#)

Testing Datasheet

[+ WFR Testing Datasheet](#)