



RACING SAFETY SURVEY FOR DRIVERS

SURVEY METHODOLOGY

Stated Purpose: To Make Racing Safer

Questionnaire:

- Third party research firm developed driver safety survey questionnaire with consultation from several professional racecar drivers
- Initial survey contained 12 open-ended questions. Survey updated mid-way with 2 additional questions for a total of 14 open-ended questions

Distribution:

- Survey hosted on Survey Monkey, an online survey platform
- Survey link distributed through safety advocate partners on social media and websites
- Survey link emailed by The Motorsports Directory to curated list of drivers
- Survey link posted on select motorsports media websites and social forums

Response Incentive:

- Participants given the option to disclose identity or to remain anonymous
- Participants offered an incentive to complete the survey. Those who provided contact information were entered to win a \$500 prize (winner to be selected at random.) For anonymous participants, a donation will be made to a motorsports charity on their behalf

Results:

- Survey conducted over a total of 12 months: March - September 2018 and July - November 2019.
- A total of 140 completed surveys received, providing a representative snapshot of the general racer population
- All captured data was analyzed, cross-referenced, tabulated and summarized with conclusions in the following report

SUMMARY OF RESULTS

Q1. What is your current driver status (e.g. pro/semi-pro/track day participant, etc.)?

- Track Day/Club/Amateur – 84 (60%)
- Semi Pro – 23 (16%)
- Active/Retired/Safety Consultant/Team Owner/Crew Chief – 20 (14%)
- Pro – 13 (10%)

Summary: 60% of driver respondents are amateur level racers, while 26% are Semi Pro/Pro level racers.

Q2. On average, how many times per year are you on track?

- 10-20 = 50 (36%)
- 5-10 = 33 (23%)
- over 20 = 31 (22%)
- Under 5 = 26 (19%)

Summary: 58% of driver respondents average 10 times or more per year on track, while 42% average 10 times or less.

Q3. Which race tracks have you driven at most often?

- The below includes those race tracks listed more than once
Road Atlanta – 21; Watkins Glen – 17; Mid-Ohio – 16; VIR – 16; Road America – 13; Sebring – 11; NJMP – 10; PittRace Complex – 10; Barber – 9; AMP – 9; Thunderhill – 9; Laguna Seca – 9; Gingerman – 8; Waterford – 8; Thompson Speedway – 8; PIR – 8; Sonoma – 8; NCM – 7; Autobahn – 7; Nelson Ledges – 6; Lime Rock – 6; The Ridge - 6; CMP – 6; Buttonwillow – 5; Black Hawk – 5; Daytona – 5; COTA – 5; Sears Point – 4; Star Speedway – 4; Grattan – 4; Hallett – 4; IRP – 4; Roebling Road – 4; Summit Point – 4; Willow Springs – 3; CMS – 3; Auto Club Raceway – 3; Hickory Motor Speedway – 3; Pocono – 3; PBIR – 2; Homestead – 2; Milwaukee Mile – 2; PPIR – 2; Tremblant – 2; Pueblo – 2; Oregon Raceway – 2; MSR Houston – 2; MSR-Cresson – 2; Lee Speedway – 2; Seekonk Speedway – 2; Mosport - 2
- Too Many/All – 6
- None - 3

Summary: Race tracks respondents drive on most often and were mentioned 6 times or more include Road Atlanta, Watkins Glen, Mid-Ohio, VIR, Road America, Sebring, NJMP, PittRace Complex, Barber, AMP, Thunderhill, Laguna Seca, Gingerman, Waterford, Thompson Speedway, PIR, Sonoma, NCM, Autobahn, Nelson Ledges, Lime Rock, The Ridge, and CMP.

Q4. If you've ever been injured while racing, what were the primary causes of the incident(s)?

- None – 57 (40%)
- Yes – 49 (35%) (including below)
 - Other Causes/No Stated Cause – 8 (16%)

- Mechanical Failure – 6 (12%)
- Driver Error – 5 (10%)
- Concrete Walls – 4 (9%)
- Other Drivers – 4 (9%)
- Contact with Rollbar – 3 (6%)
- Lack of proper safety equipment – 3 (6%)
- Driver Error/Wall – 2 (4%)
- Car to Car Contact – 2 (4%)
- Heat Stress – 2 (4%)
- Hydration/Car to Car – 1 (2%)
- Mechanical Failure/Wall – 1 (2%)
- Mechanical Failure/Conditions/Oil on Track /Other Drivers – 1 (2%)
- Oil on Track/Wall – 1 (2%)
- Driver Error/Poor Track Design – 1 (2%)
- Lack of proper safety equipment/No catch fence – 1 (2%)
- Armco – 1 (2%)
- Tire Barrier – 1 (2%)
- Rain – 1 (2%)
- Debris on Track – 1 (2%)
- N/A or No Answer – 34 (25%)

Summary: The percentage of driver respondents who have not been injured while racing versus those who have was only slightly higher at 40% and 35% respectively. Of those injured, 12% were primarily caused by Mechanical Failure. Mechanical Failure was also mentioned as a primary cause of injuries in 2 additional answers, totaling 8 mentions. Concrete Walls were mentioned in a total of 8 answers, Driver Error was mentioned in a total of 8 answers, and Other Drivers were mentioned in a total of 5 answers, ranking among the top 4 primary causes of injuries while racing.

Q5. If you've ever sustained severe vehicle damage while racing, what were the primary causes of the incident(s)?

- Yes – 80 (57%) (including causes below)
 - Driver Error – 18 (22%)
 - Other Drivers – 11 (14%)
 - Other Causes/No Stated Cause – 11 (14%)
 - Concrete Walls – 7 (9%)
 - Mechanical Failure – 7 (9%)
 - Car-to-Car/Wall – 4 (5%)
 - Rain/Wet Track – 4 (5%)
 - Car-to-Car – 3 (4%)
 - Driver Error/Wall – 3 (4%)
 - Mechanical Failure/Wall – 3 (4%)
 - Driver Error/Mechanical Failure – 2 (3%)
 - Driver Error/Other Drivers – 1 (1%)
 - Other Drivers/Mechanical Failure – 1 (1%)
 - Driver Error/Poor Track Design – 1 (1%)
 - Car-to-Car/Mechanical Failure/ Wall – 1 (1%)
 - Car-to-Car/Mechanical Failure/Insufficient Runoff – 1 (1%)
 - Other Drivers/Mechanical Failure/Conditions/Oil on Track – 1 (1%)
 - Debris on Track – 1 (1%)

- None – 33 (24%)
- N/A or No Answer – 27 (19%)

Summary: 57% of driver respondents have sustained severe vehicle damage while racing. Of those, 22% were primarily caused by driver error, followed by 14% primarily caused by other drivers. Driver Error was also mentioned as a primary cause of severe vehicle damage in 7 additional answers, totaling 25 mentions, and Other Drivers were also mentioned in 3 additional answers, totaling 14 mentions (not including car to car.) Concrete Walls were mentioned in a total of 18 answers, while Mechanical Failure was mentioned in a total of 16 answers, ranking among the top 4 primary causes of severe vehicle damage while racing.

Q6. If you've ever suffered a concussion while racing, what were the primary causes of the incident(s)?

- N/A or No Answer – 59 (42%)
- None – 51 (37%)
- Yes – 30 (21%) (including causes below)
 - Concrete Walls – 10 (33%)
 - No Stated Cause – 6 (20%)
 - Mechanical/Equipment Failure - 4 (13%)
 - Driver Error – 3 (11%)
 - Lack of Proper Safety Equipment – 3 (11%)
 - Contact with Rollbar – 1 (3%)
 - Armco Barrier – 1 (3%)
 - Tire Barrier – 1 (3%)
 - Debris on Track – 1 (3%)

Summary: 37% of driver respondents have never been concussed (that they are aware of.) Of the 21% of driver respondents who have been concussed, 33% were primarily caused by impact with a concrete wall.

Q7. Did/would receiving a concussion, or more than one concussion, affect your decision to race in the future?

- Yes – 67 (48%)
- No – 47 (34%)
- N/A or No Answer – 17 (12%)
- Maybe – 9 (6%)

Summary: 48% of driver respondents stated concussion(s) would affect their decision to race in the future, plus an additional 6% of drivers who weren't sure, totaling 54%. Conversely, 34% of driver respondents stated concussion(s) would not affect their decision to race in the future, plus an additional 6% who weren't sure, totaling 40%.

Q8. What or who would most influence you to consider trying new safety equipment (e.g. other driver suggestion, sanctioning body recommendation, fellow driver injured, etc.)?

- Sanction/Series – 29 (21%)
- Other Drivers – 26 (19%)
- Sanction/Series/Other Drivers – 13 (9%)
- Injured Drivers – 12 (8.5%)

- Personal Decision – 11 (8%)
- Testing Data – 8 (6%)
- All of the Above – 4 (3%)
- Equipment Manufacturer – 4 (3%)
- Other Drivers/Injured Driver – 3 (2.25%)
- N/A or No Answer – 3 (2.25%)
- Other Drivers/Safety Organization – 2 (1.25%)
- Safety Organization – 2 (1.25%)
- Sanction/Series/Injured Driver – 2 (1.25%)
- Other Drivers/Testing Data – 2 (1.25%)
- Sanction/Series/Published Articles – 2 (1.25%)
- Other Drivers/Published Articles – 2 (1.25%)
- Published Articles – 2 (1.25%)
- Word of Mouth/Awareness – 2 (1.25%)
- Instructor – 2 (1.25%)
- Other Drivers/Instructor – 1 (.75%)
- Other Drivers/Equipment Manufacturer – 1 (.75%)
- Injured Driver/Tech Inspection – 1 (.75%)
- Injured Driver/Cost – 1 (.75%)
- Sanction/Series/Injured Driver/Testing Data – 1 (.75%)
- Other Drivers/Injured Driver/Testing Data – 1 (.75%)
- Injured Driver/Testing Data/Low Cost – 1 (.75%)
- Ease of Implementation – 1 (.75%)
- Obvious Safety Improvement – 1 (.75%)

Summary: 21% of driver respondents are influenced to try new safety equipment by Sanction/Series, 19% by Other Drivers, plus another 9% by both, totaling 49%. Other Drivers were also mentioned in 12 additional answers, totaling 51 mentions, while Sanctions/Series were also mentioned in 5 additional answers, totaling 42 mentions. Injured Drivers were mentioned in a total of 22 answers, ranking among the top 3 influencers for safety equipment adoption.

Q9. Do you consider certain race tracks to be more dangerous than others and, if so, which tracks?

- Yes – 101 (73%) (including multiple mentions below, some with stated reasons)

Road Atlanta – 13 (too many concrete barriers – 2, close walls - 2, lack of runoff, high speed);

Tracks with Insufficient Runoff – 12; **Watkins Glen** – 10 (limited runoff – 2, close walls - 2, Armco);

Tracks with Concrete Walls – 8; **Summit Point** – 6; **Palmer** - 6; **Pacific Raceways** – 6 (trees); **Road**

America – 6 (high speed); **VIR** – 5 (narrow); **Street Courses/Temporary Tracks** – 4; **Nelson Ledges** – 3

(though may have improved – 2); **Daytona** – 3 (high speed); **CMS** – 3 (roval, close walls); **Sonoma**

– 4 (close walls – 2); **Lime Rock** – 3; **Tracks with Close Walls** – 3; **Thompson** – 2 (high speed

corners); **Mid-Ohio** – 2 (high speed); **Laguna Seca** – 2; **Gingerman** – 2; **NCM** – 2 (no runoff); **Roebing**

Road – 2; **Nurburgring** – 2; **Club Tracks** – 2; **Short Tracks with Concrete Walls** - 2; **Any without**

Soft Walls or SAFER - 2; **High Speed Tracks** - 2

Single mentions: Mosport, Hallett, High Plains Raceway, Wild Horse Pass/Firebird (main track);

PPIR; Willow Springs; Hutchison; Mission Raceway, Indianapolis Raceway Park; Mini Indy (high speed

banked oval); Gateway (less runoff); Nashville Speedway; Rockingham Dragway (return

road); Auto Club Raceway (short track); Summit Motorsports Park (no catch fence); Buttonwillow;

Big Willow; Grattan; CTMP; Dominion; Kershaw; St. Pete's; Le Mans; Club Motorsport; Hickory

Motor Speedway (cross-over area); NJMP; Tracks with Armco Guardrails; Tracks with Tire Barriers;

Tracks with Inadequate Fencing; Tracks with Poor Lighting; Low Rescue Staff; Lack of Flagging at Rovals

- No – 21 (14%)
- N/A or No Answer – 8 (6%)
- All Tracks – 7 (5%)
- Not Sure – 3 (2%)

Summary: 73% of driver respondents feel specific racetracks or types of tracks are more dangerous than others. Race tracks or types of tracks mentioned 5 times or more include Road Atlanta, Tracks with Insufficient Runoff, Watkins Glen, Tracks with Concrete Walls, Summit Point, Palmer, Pacific Raceways, Road America and VIR.

Q10. Are there specific high-risk areas or turns on certain tracks that are notoriously hazardous and, if so which ones? (Question added on updated survey & answered by 126 participants)

- Yes – 84 (67%) (including specific tracks areas below)

Watkins Glen - T1 (11X), Entry to Boot (11X), T10 (11X), Esses (5X), T9, Bus Stop, Short Course, Armco, Anywhere; **Road Atlanta** - T12 (8X), T1 (4X), T2, T3, T5, T7, last turn into front straight, last complex, under bridge to front straight; **Road America** – Kink (9X), Canada Corner; **VIR** – Esses (2X), T10 (2X), South Bend, Several Parts; **AMP** – T16 (3X), T15; **Sonoma** – T2, T3b, Carousel, Walls Everywhere; **Laguna Seca** – T1, T6, T9 (2X); **Palmer** - T1, T4-6, T8; **Mid-Ohio** – Thunder Valley (2X), Keyhole; **Nelson Ledges** – Kink, End of Back Straight, Tire Walls that Catch & Flip; **Lime Rock** – Downhill (2X), Uphill; **Sears Point** – T6, T10; **Daytona** – T1, T2 Infield; **CMS Roval** - T1-3, Every Turn; **NJMP Lightening** – T1, T5; **CMP** – Kink (2X); **Roebing Road** - T1, T9; **Pacific Raceways** – Back Section, Lined with Trees; **Concrete Walls** (2X); **Insufficient Runoff** (2X); **Summit Point Main** - T4; **Summit Motorsports Park** - No Catch Fence; **Pittrace** – Kink (T16); **CTMP** – T10 Concrete; **NOLA** - Grass Runoff; **Concord Motorsports Park** - Dogleg; **Queensland Raceway** – Insufficient Runoff on Back Straight; **Rockingham** - T1; **Brands Hatch** – T1; **Willow Springs** – Cork Screw; **Hallett**; **Eagles Canyon**; **MSR-Houston**; **Ovals even with SAFER**; **Blind Turns/Corners**; **Close Walls**; **Trees without Barriers**; **Turns without Runoff**; **High Speed Corners**

- N/A or No Answer – 25 (20%)
- No – 13 (10%)
- Too Many – 2 (1.5%) many tracks have bad areas
- Not Sure – 2 (1.5%)

Summary: 67% of driver respondents named specific racetrack areas or types of track areas that are a notoriously hazardous. Race tracks/areas that are mentioned 5 times or more include Watkins Glen, Road Atlanta, Road America and VIR.

Q11. (or Q10) What types of race track barriers/walls do you feel cause the most damage to drivers and vehicles, and why (e.g. cement walls, Armco guardrails, used tire packs, etc.)?

- Concrete Walls/Jersey Barriers – 64 (46%)
- Concrete Walls & Armco – 25 (17%)
- Other – 14 (10%)

(Concrete Walls/Fencing; Concrete Walls/Grass; Concrete Walls/Armco/Trees; Concrete Walls/Armco/Poles; Concrete Walls/Armco/No Barriers; Armco/Used Tire Packs; Tire Packs/Sand Bags; Trees; Oval Speedway Walls; Hard Walls without Tires; Haybales/Styrofoam/Plastic; Walls without Sand/Gravel Before Them; Anything not Energy Absorbing; Track Owners Not Seeing Worst Case Scenarios)

- Armco Guardrails –12 (9%)
- N/A or No Answer – 5 (4%)
- Don't Know – 4 (3%)
- Concrete Walls/Used Tire Packs – 3 (2%)
- Depends – 3 (2%)
- Concrete Walls/Armco Exposed Ends/Trees – 2 (1.5%)
- Used Tire Packs – 2 (1.5%)
- Concrete Walls/Earth Banks – 2 (1.5%)
- Concrete Walls/Trees – 2 (1.5%)
- All of the Above – 2 (1%)

Summary: 46% of driver respondents stated Concrete Walls/Jersey Barriers are the primary cause of most damage to drivers and vehicles, while 17% stated both Concrete Walls/Jersey Barriers and Armco, plus another 9% stated Armco, totaling 72% who feel Concrete Walls/Jersey Barriers and Armco are the primary causes of most damage to drivers and vehicles. Concrete Walls were also mentioned in 16 additional answers, totaling 105 mentions, while Armco was also mentioned in 6 additional answers, totaling 43 mentions.

Q12. (or Q11) In general, do you feel barrier safety improvements are necessary at the majority of U.S. race tracks?

- Yes – 104 (74%)
- No – 32 (23%)
- N/A or No Answer – 4 (3%)

Summary: 74% of driver respondents feel barrier safety improvements are necessary at the majority of U.S. racetracks.

Q13. Would you ever consider joining a safety alliance of drivers and motorsport organizations to advocate for safer tracks? (Question added on updated survey & answered by 126 participants)

- Yes – 96 (76%)
- No – 20 (16%)
- Maybe – 7 (5.5%)
- Already in One – 2 (1.5%)
- N/A or No Answer – 1 (1%)

Summary: 76% of driver respondents would consider joining a safety alliance to advocate for safer tracks, plus an additional 5.5% who might consider joining and an additional 1.5% that have already joined one, totaling 83%.

Q14. (or Q12) Would you ever consider contributing to an official motorsports safety fund specifically for helping tracks afford to make barrier improvements?

- Yes – 78 (56%)
- No – 45 (32%)
- Maybe – 15 (11%)
- N/A or No Answer – 2 (1%)

Summary: 56% of driver respondents would consider contributing to a safety fund to help tracks afford to make barrier improvements (some stating particularly if through a team, to a specific track, or as part

of sanctioning body fee), plus an additional 11% who might consider contributing if affordable or paid through registration fees, totaling 67%.

CONTACT INFO

78 out of 140 Drivers Provided Contact Information (56%), while 62 Left it Blank or Provided Partial Information (44%)

CONCLUSIONS

1. Close to 2/3 of driver respondents are amateur level racers and over 1/2 average 10 times or more per year on track, which equates to approximately 1 or more times per month, indicating less experienced drivers represent the majority of racers on tracks.
2. The top 5 race tracks respondents drive on most often are Road Atlanta, Watkins Glen, VIR, Mid-Ohio, and Road America.
3. Over 1/3 of driver respondents have been injured while racing and almost 2/3 have sustained severe vehicle damage while racing, indicating a high potential for drivers to be involved in an accident while racing.
4. The highest number of driver respondents mentioned driver error as a primary cause of injuries and/or vehicle damage while racing (total of 46 mentions), followed by concrete walls (total of 26 mentions), mechanical failure (total of 24 mentions) and other drivers (total of 19 mentions), indicating a need for more driver education/training/coaching, better energy absorbing barriers on race tracks, and more technical inspections.
5. Almost 1/4 of driver respondents have been concussed while racing, and 1/3 attributed the primary cause to concrete walls, indicating a need for better types of energy absorbing barriers on race tracks.
6. Nearly 1/2 of driver respondents stated one or multiple concussions would affect their decision to race in the future, indicating a prevalent concern and a potential drop in motorsports participation.
7. About 1/2 of driver respondents would consider adopting new safety equipment if influenced by other driver suggestions (total of 51 mentions) and/or sanctioning body/series recommendation (total of 47 mentions), followed by injured drivers (total of 22 mentions) indicating a need for drivers to become safety advocates and educate other drivers, and for sanctions/series to mandate safety improvements.
8. Approximately 3/4 of driver respondents feel certain race tracks or types of tracks are more dangerous than others, indicating a need to improve safety measures at race tracks. The top 4 race tracks or types of tracks listed as more dangerous were Road Atlanta, Tracks with Insufficient Runoff, Watkins Glen, and Tracks with Concrete Walls, indicating a need for specific types of safety upgrades.

9. 2/3 of driver respondents feel there are specific track areas or types of track areas that are notoriously hazardous, indicating a need to mitigate high-risk areas at race tracks. The top 4 race tracks listed with notoriously hazardous areas were Watkins Glen, Road Atlanta, Road America, and VIR, which correlates with 4 of the top 5 tracks respondents drive on, inferring data is skewed by track popularity, yet still indicates a need for improvements to specific areas on certain tracks.
10. Nearly 1/2 of driver respondents feel concrete walls are the primary cause of most damage to drivers and vehicles. Concrete walls were also mentioned the greatest number of times (total of 105 mentions), followed by Armco (total of 43 mentions), indicating a need for better types of energy absorbing barriers on race tracks.
11. 3/4 of driver respondents feel barrier improvements are necessary at the majority of U.S. racetracks, indicating an overwhelming need for better types of energy absorbing barriers on race tracks.
12. 3/4 of driver respondents would or might consider joining a safety alliance to advocate for safer tracks, indicating a high level of concern for personal safety as well as the safety of other drivers.
13. 2/3 of driver respondents would or might consider contributing to a motorsports safety fund for track barrier improvements, indicating a need to develop fundraising programs aimed at drivers.