



2011 USACi SQ Rules

This section of the USACI rulebook was written by the USACI Rules & Ethics committee in order to retain the basic ideas that have always made auto sound competition fun and fair. Each year, USACI hosts a membership meeting to gain input from its competitor members, the goal being to make the contests fair, fun and challenging. This rule Book and any subsequent refinements are the result of those meetings. It is USACI's sincerest hope that these rules will be received as an example of the organizations continuing efforts to promote the auto sound industry.

The rules set forth in this section of the rule Book shall be used by the USACI official(s) and/or judging staff at all USACI Sanctioned events. It is the responsibility of event officials and staff to adhere to these rules to the best of their ability. In consideration of that, each competitor should read this manual and have a thorough understanding of its contents when designing or improving a competition mobile audio system. Ultimately, it is the competitor's responsibility to know and adhere to the rules contained herein.

USACI reserves the right to make written amendments to this rule Book without prior written notification to its members. USACI will however, make every effort to notify active members via the Internet and/or by distributing any written changes during the registration process of a sanctioned USACI contest. All competitors and enthusiasts are encouraged to visit our web site at www.usaci.org for rules updates, event schedules and event results.

Best regards,
Ralph L. Randall
President, USACI

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Overview

The intent of car audio competition is to judge the ability of a permanently installed audio system in a vehicle to accurately reproduce musical reference material. The intent of the following classifications are to allow closely matched competitors and vehicles to compete against each other. Any competitor who competes in USACI will be required to compete in the equivalent or higher classification or division as they are competing in at other legitimate sanctioning bodies. The term Competitor normally applies to the vehicle's owner, an employee of its owner, or an immediate family member thereof. The competitor shall be responsible for his or her vehicle and audio system and any damage resulting from their use or misuse.

The vehicle classification criteria is based on the Intro class and exclusions are included as the competitor advances to higher classes. It is up to the competitor to enter themselves in the correct class. A competitor reclassified by a head judge or USACi staff will be forced to compete in the class assigned for the remainder of the competition year and will require an appeal to the Rules and Ethics committee to change classes for the following year. Additionally, competitors will be required to compete in the class/division they qualified for World Finals unless WRITTEN authorization allowing another division is presented while the competitor is registering for the event. Once the competitor receives and accepts his or her score sheet, that is the class that competitor will compete in at that event. The head judge of the event is the ONLY individual that can reclass a competitor at an event and reclassification by the head judge is final for that event.

The competitor can request a review of his or her classification by the USACi Rules and Ethics Committee.

Note: USACi reserves the right to amend or change this rule book at any time for any reason. A ruling "in the field" will be made by a head judge and will stand until such time as a review by the Rules and Ethics committee can be completed. Any modification not specifically addressed in these classifications will be considered prohibited. Competitors wishing to compete at an event with an unsanctioned modification may be forced to compete in the Xtreme SQ+ Class until such time as USACi Rules and Ethics can make a determination on that modification and an exclusion or addition can be added to the rule book in a specific class. Rules, clarifications and classifications resulting in electronic messages and/or conversations with USACi staff not included in the most current rule book will be considered prohibited and will result in the competitor being allowed to compete in the Xtreme SQ+ class only. It is the responsibility of the competitor to read and understand these classifications and rules and follow them.

USACI GENERAL RULES

Event Registration

Event registration will generally begin approximately one hour prior to the stated beginning time of the contest. After the contest has begun, the event director, at his or her discretion may accept late registrations and opt to add a surcharge to the stated event registration fee for late registrants if he or she so desires. Each vehicle can be entered and judged in only one SQ division.

Event Judging Order

At USACI sanctioned events all vehicles will be judged for:

1. Verification
2. Installation
3. Sound Quality
4. Sound Pressure Level Testing (SPL)

For detailed descriptions of each judging station, please refer to the sections following General Rules. The head judge reserves the right to omit or reorganize any judging stations before the event due to extenuating circumstances.

Except for USACI Regional and World Finals events, there will be no specific order in which competitors must be judged. A registered competitor may enter the vehicle in the judging line whenever he or she wishes, so long as there are other vehicles being judged. Judging will end when all vehicles are judged. It is the competitor's responsibility to have the vehicle in the judging line before the judging ends. No score and no refund will be given to a competitor who fails to have their vehicle in the judging line before judging has ended. Any competitor who allows more than a 5-minute "gap" between cars at the first judging station will have 5 points deducted off their score sheet. This 5-point deduction will apply to all vehicles in line after this competitor. If a competitor allows a 10-minute gap there will be a 10-point deduction and so on, until a maximum of 20 points is deducted. This will be referred to the "5 minute rule"

USACI Finals will have in place judging. There will be a specific order in which competitors must be judged. Once a competitor is placed in the judging area, he or she will be expected to stay in the spot in which they were placed. No "line jockeying" will be permitted to try to gain a more favorable line or floor position. Competitors who fail to remain in their assigned position may be disqualified from the event and no refund will be given. Also, at World Finals there will be a

specific “cut off” time when competitors are no longer allowed to be placed in the judging line. If a competitor misses this cut off, that competitor will be disqualified from the event and no refund given. This cut off time will typically be advertised on the event flyer or at the event in or near the USACI registration booth.

Competitor Conduct

It is the competitor’s responsibility to have fun. A competitor does not have the right to infringe on someone else’s rights, especially not on those who have the burden of keeping an event running smoothly. While being in a bad mood or discourteous will generally reflect in the scores a competitor receives, being rude or disruptive in a Judge’s opinion shall be just cause to disqualify the competitor. If the root cause of the disruption is suspected to be alcohol or any other controlled substance, the competitor will be banned from all USACI events for a minimum of one year.

A competitor will also be held responsible for any person(s) accompanying him or her to the event. The event sponsor also has every authority to press charges according to local law. Absolutely no weapons are allowed in the possession of any competitor or any person(s) with the competitor, or in the competitor’s vehicle. If a competitor does not comply with this rule, this person shall be immediately disqualified. Also, the competitor shall be banned from ALL future USACI events if, in the Head Judge’s opinion, there is even a casual threat involving a weapon made toward a competitor, judge, sponsor, or USACI official for any reason. No refunds will be given for being disqualified.

Judging Specifics

All vehicles must move under their own power during the event. This means that pushing, towing, etc., will not be allowed after the vehicle has entered the judging line under it’s own power. Emergency situations will be evaluated on the spot by the head judge.

An equipment or vehicle malfunction is the competitor’s responsibility. A competitor shall be allowed a maximum of five minutes to correct or repair any malfunction. After five minutes have expired, the vehicle must be judged if possible or given a no score. Repeated repairs will not be allowed. Also, no repairs will be allowed after SPL testing has started. No refunds will be given.

A competitor will not be allowed to enter the same vehicle in more than one SQ class/division. Each vehicle will be judged only once, unless the head judge deems it necessary to re-judge the vehicle to preserve the integrity of the event. All Intro, Street, Modified and Super Modified vehicles must be licensed and “Street Legal” as per federal regulations. Vehicles that do not comply will be judged in the Extreme SQ+ division.

Qualifying for Finals

A competitor must be a current USACI member in order to compete at the World Finals. The total number of points to qualify for finals for a given state/region will be available on the USACI Web Site (<http://www.soundoff.org>). The competitor must use the vehicle they intend to compete with at World Finals throughout the year to qualify. A competitor must obtain at least 70% of his or her qualifying points in the division/class they wish to enter at finals.

Event points shall be awarded at all USACI events according to the following schedule:

Standard USACI Events:

- 1st place = 15 event points
- 2nd place = 12 event points
- 3rd place = 10 event points

All Other = 5 event points

(Double Points and Triple Points use the above scale and are multiplied by 2 or 3.)

Regional USACI Event:

1st place = Finals Invitation
2nd place = 40 event points
3rd place = 35 event points
4th place = 30 event points
5th place = 25 event points
All other = 15 event points

Note: Event judges may receive points for judging an event. Judging points will not be counted toward special awards at the end of the year but may be used to earn points to compete at finals. Competitors who do not have enough points to qualify for finals in a class/division may elect to compete in the Xtreme class at finals. In states with too few events to acquire the points required to qualify the requirement may be lowered at the discretion of the USACI office.

In Case of a Tie

In the rare event that two or more competitors in the same class receive the same total score, the highest Sound Quality score will determine the winner of the tie. If the competitors have the same Sound Quality score, the highest Installation score will determine the winner. If a tie still exists the SPL score will be used. If a tie still exists or if there is no SPL score, the head judge will flip a coin to determine the winner.

Best of Show/People's Choice

Best of Show is optional at the promoters' discretion and may not be offered at all events. The combined installation and sound quality scores will typically determine competitors eligible for Best of Show. Competitors eligible for Best of Show will be given specific instructions by the head judge during the event on how Best of Show will be awarded.

An event promoter may also choose to offer the people's choice award in lieu of Best of Show or in addition to Best of Show. The People's Choice award will be given to the competitor who has the most number of spectator votes for his or her vehicle. This format is all about crowd appeal and competitors are encouraged to reach out to the crowds and "sell" their vehicles to the crowd.

Appealing a Decision

If a competitor feels that he or she has been misjudged or wishes to seek clarification of a decision, only the competitor may appeal to the judge that judged that section. If the judge is unable to resolve the matter, the appeal will be turned over to the Head Judge (only the competitor may appeal to the Head Judge).

The Head Judge's decision shall be final. Appeals should be of a substantial nature and not based on score comparisons. Repeated or insubstantial appeals will only be considered disruptive to the event. Any competitor, or group representing the competitor, that is deemed unruly or disruptive to the event, may result in the competitor being penalized or asked to leave the event premises.

A competitor may write the USACI office to appeal a Head Judge's decision or a rule. If the appeal is justified, the USACI Board will send the appropriate reply to the competitor and any persons involved. Neither USACI nor an event sponsor assumes responsibility for any awards or prizes previously awarded to another competitor.

Disobeying the Rules

The rules and guidelines in this section of the rulebook apply to all USACI SQ competitors. If a competitor feels that another competitor or judge is disobeying or disregarding any of these rules and guidelines, they may bring the situation to the Judge or Head Judge's attention in a very polite manner. If the concerned competitor is discourteous, disruptive, or the complaint is without value, the competitor may be subject to penalization for being disruptive to the event. It is the competitor's responsibility to know the rules contained in this book and follow them.

If a competitor has made a plausible complaint, involving any unfair or illegal item which may be hidden in another competitor's vehicle in the same power class and division, and would require disassembly of that vehicle or audio system to verify its existence, then the complaint must be accompanied by a cash security deposit. (No checks) Such complaints may only be made after the vehicle in question has been judged at that event and before any prizes are awarded. The security deposit required to file a protest at a Regular or Double Points event will be \$500. Regional, Triple, and finals events will be \$1000.

The Head Judge must have the security deposit in hand before any action may be taken. The Head Judge would then appoint two qualified persons to disassemble the vehicle for inspection. The competitor whose vehicle is in question may elect not to have their vehicle inspected by disqualifying themselves from the event with no refund. If, in the Head Judge's opinion, the vehicle in question is found to be inconsistent with this rule book, the cash security deposit will be returned to the competitor making the complaint and the competitor in question may be disqualified from that event and all future USACI events for a period of two years. If an inconsistency is ruled to be unintentional, then the competitor in question may only be disqualified from that event. If in the Head Judge's opinion, no inconsistency is found in the vehicle in question, then the cash security deposit will be awarded to the competitor whose vehicle was inspected and it will be the responsibility of the competitor who was protested to reassemble the vehicle or audio system.

Competition Classifications

INTRO- Beginners (first time competitors) Basic installations, OEM speaker locations, prefab subwoofer enclosures, etc.
Intro SQ+ - 1 seat (Inst, Sound, SPL)

Intro SQ+ Class Criteria

The Intro Class is designed for the first time competitor. The vehicle will feature a basic installation and utilize OEM speaker locations. Prefab or generic custom enclosures are permitted.

- Vehicle must be able to be operated as originally designed on public roads.
- Vehicle will be judged from the driver's seat with the engine off.
- All items originally provided from the manufacturer within the vehicle must keep their original location and functional ability (no modifications, extensions, etc). This will include but is not limited to center console, all seats, airbags (if equipped), seatbelts, controls (gas, brake, steering, etc), tire tools/jack and spare tire.
- Upgraded electrical and charging systems are recommended but the vehicle is restricted to only one alternator and one 12-volt battery in the factory location. System voltage will not exceed 14.4 volts at the amplifier(s) with the vehicle off.
- Head unit may be replaced, but must remain in the factory location. Source unit will only be an in-dash unit or any controlled multi-disc unit. Computers or remotely located faceplates are not permitted.

- One processor may be mounted in or below the dash must be securely mounted and designed for that location (1/2 DIN).
- Amplifiers and processors must be car audio specific equipment originally designed to operate on 12VDC. 120VAC power supplies or converted equipment are not permitted.
- All speakers (except for subwoofer(s)) will be placed in stock locations as originally provided from the manufacturer without making any alterations and will not hinder the vehicle's operation or visual appearance. Interior panels may not be modified/removed/replaced in any way. Factory speakers may be replaced with aftermarket coax speakers in stock locations. **One pair of tweeters 1.5" or smaller in total diameter may be added to the A pillars.**
- All car audio equipment, including head unit, wiring, amp(s), speakers, sub(s), enclosures, etc. must be safely and securely mounted. When possible, the audio components must be integrated as much as possible into the vehicle, without hindering the vehicle's operation.
- Line of sight from the driver's or passenger's seat may not be hindered or blocked in any direction. Covering any portion of the vehicle (such as with a car cover) so that it blocks or restricts the OEM view out of the vehicle for any judge judging the car is prohibited.
- Subwoofers may not be mounted in front of the B pillar unless the OEM system in that vehicle included a subwoofer in front of the B pillar. (i.e. Bose, Infinity, etc) An OEM subwoofer in front of the B pillar may not be upgraded or replaced if it is used for sound quality judging.

Note: Modifications or upgrades to a vehicle's interior, exterior, engine, or related components do not necessarily move a vehicle to a higher class unless those modifications or upgrades are done to improve the sound quality system.

Note: Intro competitors may compete in one (1) World Finals event before being required to move to a higher class.

MODIFIED- More extensive modifications to vehicle in this class allowed.

Modified Q - 1 seat (Sound)

Modified SQ - 1 seat (Inst, Sound)

Modified SQ+ - 1 seat (Inst, Sound, SPL)

Modified Class Criteria

The modified class builds on the Intro class and is considered the next step for a competitor. All rules in the Intro class still apply with the following exceptions.

- Vehicle will be judged from the driver's seat with the engine off.
- The spare tire may be removed.
- Upgraded electrical and charging are recommended and competitors may install multiple 12 volt automotive batteries in parallel. Primary battery may be relocated. All batteries must be securely mounted, and must be located either under the hood and/or in the trunk/hatch/cargo area only. Batteries must be vented to outside air. Pick-up trucks may mount batteries in the bed provided they are covered and protected. Voltage is limited to 14.4 volts at the amplifiers with the engine off.
- Competitors may install kick panels (either aftermarket or custom).
- **Competitors may install larger than stock size speakers in factory door locations. Extensive modification to the door panels (i.e. Extremely large build outs to hold speakers, complete door panel rebuilds, etc) is prohibited.**
- Modification to the floor pan is prohibited.
- Speakers less than 3" in total diameter may be installed in or on the A pillars

- OEM (or equivalent) driver and passenger seats may be modified to increase travel front to rear. The modification will not allow the seat to travel more than 6" further than stock and must retain stock mounting points as well as OEM lower and upper mounting hardware. The hardware used in the entire modification must meet or exceed the OEM hardware that was replaced or modified (bolts, metal, etc). Modifications must be as strong or stronger than OEM and may not allow irregular seat movement (up and down/side to side/etc). Any vehicle not meeting this criteria will be automatically moved to the XTREME SQ+ 1 seat class.
- Dash may not be rebuilt or altered, however speakers may be mounted in dash pods installed on top of the dash as long as they do not block the line of sight. Line of sight must not be obscured behind the B-Pillar.
- Unless mounted in a factory location (console, under seat, etc), subwoofer(s) must be installed behind the B-pillar.
- Factory center console may be removed or modified. Factory console may house electronics.

Note: Modified competitors must move to the Super Modified (or higher) class after winning World Finals Event 2 times.

SUPER MODIFIED- Even more modifications to the vehicle. This is the most competitive class for all serious competitors. Competitors do not have to advance to a higher class if they choose not to.

Super Modified Q - 2 seat (Sound)

Super Modified SQ - 2 seat (Inst, Sound)

Super Modified SQ+ - 2 Seat (Inst, Sound, SPL)

Super Modified Class Criteria

The Super Modified class builds on the Intro and Modified class and is considered the next step for a competitor. Competitors may compete in this class as long as they wish. All rules in the Intro and Modified classes still apply with the following exceptions.

- Vehicle will be judged from the driver's and passenger's seat simultaneously with the engine off.
- Vehicle must be legal to operate on public roadways.
- Windows do not have to roll down but must still be made of OEM material for that vehicle.
- Dash may be completely rebuilt, however all original instruments (or suitable replacements) must remain. (speedometer, tachometer, signals, voltage, fuel, etc)
- Source unit may consist of the head unit, remotely located faceplate, mounted remote control or computer.
- Enclosures may be externally mounted (ex. under car, fender well etc.). Exterior bodywork may not be altered to facilitate the audio system.
- Subwoofer(s) may be mounted forward of the B pillar but must not interfere with operation of the vehicle.
- Line of sight behind the B pillar can be blocked.
- Speakers may be installed in or on the A pillars. Minimal intrusion to line of sight out the front and side windows is permitted.
- OEM (or equivalent) driver's and passenger's seats may be relocated (front to rear/side to side), but must still be securely mounted on factory or aftermarket hardware and able to be used to operate the vehicle on public roads. The modification will not allow the seat to travel more than 12" further than stock and must utilize factory mounting points. Judges must be able to maintain 11" shoulder to shoulder between each other in the normal judging position. The hardware used in the entire modification must meet or exceed the OEM hardware that was replaced or modified (bolts, metal, floor pan

- mounting points, etc). Any vehicle not meeting this criteria will be automatically moved to the XTREME SQ+ 1 seat class.
- Seating behind the B Pillar may be removed or rendered inoperable to accommodate audio upgrades.
 - 120 VAC equipment, power supplies, or converted equipment may be integrated into the system.
 - Door panels, grill covers, etc. may be modified or rebuilt to accommodate speakers. Kick panels may accommodate any size speaker and floor speakers may be added as long as they are properly protected. Inverted woofers mounted forward of the B Pillar will NOT be considered properly protected unless a grill is used to cover the entire exposed portion of the woofer.
 - Consoles (factory or custom) may be installed to house electronics and aftermarket speakers.

XTREME SQ - All former "expert" or manufacturer-type vehicles in this class or anyone that so chooses. Anyone who works for a 12-volt manufacturer or distributor, [receives free equipment](#), USACi directors/employees as well as "high ranking" individuals of competing organizations MUST compete in the Xtreme division. Once you compete in this class by choice you cannot move to lower classes without prior approval by the USACi Rules and Ethics Committee. Qualification to compete in Xtreme SQ at World Finals is not required.
Xtreme SQ - 2 seat (Inst, Sound)

Xtreme Class Criteria

The Xtreme class builds on the Advanced, Modified and Into classes and is considered the pinnacle for a competitor. All rules in the Advanced, Modified and Into classes still apply with the following exceptions.

- Vehicle does not have to be street legal but still needs to move under its own power. The vehicle needs to be able to be started to be completely judged or minimum points will be awarded in noise categories.
- Exterior bodywork may be altered to facilitate the audio system.
- Driver's and passenger's seats may be custom and relocated (front to rear/side to side), but must still be securely mounted and able to be used to operate the vehicle on public roads. Judges must be able to maintain 11" shoulder to shoulder between each other in the normal judging position.
- Front, rear and side views may be blocked but will not restrict the judge from exiting the vehicle.
- Vehicle controls may be extended or altered to facilitate operation of the vehicle from the judging position.
- Window tint may exceed state laws on non-street legal vehicles that are not used on public roadways.

XTREME SQ+ - ANY vehicle NOT meeting all judging criteria or safety standards in any of the other classes would place a competitor in this class or the competitor may compete in Xtreme SQ+ by choice. Any competitor may enter this class IN ADDITION TO their normal class if they desire. Qualification to compete in Xtreme SQ+ at World Finals is not required.
Xtreme SQ+ - 1 seat (Inst, Sound, SPL)

- Vehicle does not have to be street legal but still needs to move under its own power.
- Vehicle will be judged by one sound judge from the operator's position. The judge must be facing the front of the vehicle.
- Xtreme SQ+ competitors will not be permitted to compete in any Q class.

Note: All SPL is full value and uncapped in all SQ+ classes.

Street Q Class Criteria

The Street Q Class is designed for the crossover SPL competitor (All SPL Classes except Super Modified, Port Wars, and Super Port Wars). The class will include the competitor's SPL score and an SQ score on the USACI Intro SQ score sheet. There will be NO install points. The competitor MUST be entered in an SPL class at that event to enter the Street Q class. No competitors competing in any other SQ or SQ+ event at that event will be permitted to enter the Street Q class (including World Finals)

Street Q - 1 seat (Sound, SPL) (crossover class for SPL competitors)

- Vehicle must be street legal and able to be operated on the street.
- Vehicle will be judged from the driver's seat with the engine off.

“Q” - “Q” is a competition format designed to highlight the “sound quality” of a system. Competitors may enter “Q” in addition to their primary SQ class. The “Q” class will consist of the sound quality section of the Super Modified/Xtreme score sheet and a limited number of basic safety questions on the install portion. “Q” class will be combined into one class at all local events. The class may be split into Modified (for competitors that compete in the Modified and Intro divisions) and Super Modified (for competitors that compete in the Super Modified and Xtreme divisions) Regional and Finals events. Super Modified and Xtreme competitors may not compete in Modified Q. Intro, Street and Modified competitors may not compete in Super Modified Q.

Modified Q - 1 seat scoring

Super Modified Q - 2 seat scoring

Seat Clarification: 2 seat classes will have 2 judges seated side by side in the car scoring the vehicle simultaneously. Judges will be seated facing the front of the vehicle. Competitors will allow at least 11" in distance (measured shoulder to shoulder) between the judges. Bench seats will also be required to provide 11" shoulder to shoulder between the judges. Any vehicle not meeting this criteria will be automatically moved to the XTREME SQ 1 seat class.

VERIFICATION JUDGING CRITERIA

A USACI competitor's vehicle shall be inspected by the Verification judge to ensure that the vehicle and audio system meets the Basic Requirements as outlined under USACI General Rules. If, in the judge's opinion, the vehicle or system does not meet all of these Basic Requirements, the judge may bring it to the Head Judge's attention, and by the Head Judge's decision, the competitor may be disqualified from the event. The competitor's entry fee may be refunded if it is not a Regional or Final event.

Safety Equipment Present (0 or 10): USACI strongly discourages the removal of OEM (or equivalent) safety equipment to facilitate the sound system. To receive maximum points in this category, all factory equipped, OEM airbags, seat belts (or SFI, SA, FIA, FMVSS#209 approved replacements), parking brake, front and rear turn signals, headlights, and taillights must be present and functional in the vehicle to achieve maximum points in this category. Aftermarket

lighting assemblies are allowed as well as aftermarket parking brake devices and assemblies as long as their original function is not compromised.

Note: Xtreme and Street Q competitors will automatically receive full points in this category.

POWER SOURCE DESIGN

Battery(ies) Properly Secured (0 to 3) - Every battery in the vehicle should be secured. A battery that is mounted securely should not allow the base of the battery freedom of movement in any plane of motion. A battery that will not move at all will warrant a 3. A battery that moves slightly but less than one inch in any direction will warrant a 2. A battery moves more than one inch but is secured as to not be deemed hazardous will warrant 1. All other will be awarded 0.

Battery(ies) Properly Vented (0 or 3) - Every battery in the vehicle should be properly vented to outside air. The buildup of poisonous and explosive gases given off while a lead acid battery is charging can be very dangerous. If a battery is mounted in an open engine compartment or ventilated by a forced air ventilation system with the output completely capable of moving the gases to the outside of the vehicle it will be awarded full points. Totally enclosing batteries in an open engine compartment defeats the purpose for ventilation therefore not allowing maximum points to be awarded to the competitor. The alarm battery backup will NOT be scored in this section. "Bat Cap" and other slow discharge type devices will be considered batteries and must be vented like a battery.

Upgraded Battery System (0 or 3) - Any aftermarket battery upgrade over the OEM rating will be considered sufficient and be awarded full points. USACI recommends the battery system be improved to exceed the peak current demands of the audio system but this is not required. This can be accomplished by simply upgrading the factory battery and retaining a single battery system for a low wattage audio system. One or more auxiliary batteries are suggested for a higher wattage audio system. Multiple batteries will always be considered upgraded even if factory batteries are used. The minimum amount of suggested battery current (measured in amperes according to a battery's cranking amps rating) would be detailed in Appendix B.

Upgraded Charging System (0 or 3) - Any aftermarket alternator upgrade over the OEM rating will be considered sufficient provided the charging lead has been upgraded to match the alternators output. A high output rewind of the stock alternator will also be considered sufficient for full points. A valid receipt is required to show proof of such a rewind. USACI recommends the charging system be improved to exceed the peak current demands of the audio system. More than one aftermarket high output alternator would be suggested for a high wattage audio system. (See Appendix C.) Example: If a vehicle with a 250 watt system were equipped from the factory with a 60 amp alternator, a 70 amp alternator would be considered adequate for points but a larger upgrade would be suggested for optimum system performance. It is the competitor's responsibility to supply the proof of stock alternator value and upgrade in order to receive full points in this category.

WOW/Creativity of Power Source (0 - 5) - Points will be awarded for a power source and wiring design that exhibits creativity or "WOW". Creativity or the "WOW" factor are techniques and/or simply the overall appeal of this portion of the vehicle. This allows the judge to award competitors points for making their vehicles more appealing to spectators and other competitors. Because the overall caliber of competitors may vary, the number of points awarded to the same design may also vary to some extent. Maximum points will only be awarded to the most appealing and creative installations at any given event.

Wiring

Power Source Properly Fused (0 or 3) - Each power wire, which is connected to the positive terminal of a battery, must be fused within 18 wire inches (including all connectors, wire and protection devices) of the battery and before the wire passes through any metal. This measurement will be taken from the center of the positive battery post and terminate at the output of the fuse or a manual reset circuit breaker. Being properly fused consists of using a manual reset circuit breaker or a fuse of the proper rating. Either should have a current rating less than that of the components, including connecting wire, to which it is supplying power, to include at the positive post of multiple batteries connected together. Automatic reset circuit breakers are not acceptable. Also each fuse must maintain moderate accessibility. These rules normally apply to any circuit that supplies power to the audio system, but may also apply to a stock power lead that is deemed to be unsafe. Note: The gauge of wire being protected will decide proper fuse rating. System values will not be used to determine proper fusing values on batteries.

Power Wires Properly Protected (0 - 5) - The wires that connect the power source components to one another and to the audio system should be protected from their environment. In a non-hostile environment, such as in an interior compartment or in the engine compartment away from all heat sources (at least a few inches), wire loom will be considered sufficient protection and awarded maximum points. However, in high heat areas or underneath the vehicle, better protection will be required. In these cases, metal or rigid plastic conduit will be considered sufficient and full points awarded. A grommet must be used at any point where a power wire passes through metal or any conductive material. Loom, or other suitable material, will be required when the wire passes through any abrasive material. All wires should be secured at regular intervals so as to prevent irregular movement. (Every eight inches or less to achieve maximum points.)

Power Wires Properly Terminated (0 - 5) - Good wire termination techniques should be used, especially to connect the power source components. Each termination should be very solid and free of any fraying strands or corrosion. A termination should have some form of protection, such as heat shrink tubing, to protect it from corrosion. Also, each termination along the twelve-volt positive lead must have adequate protection to prevent accidental shorting to ground.

Power Wires Run Neatly, Safely, and Securely (0 - 10) - All wires which connect the power source components to one another and the audio system must be routed in an orderly fashion away from all potentially damaging parts of the vehicle. Any separately moving portion of the vehicle should be avoided as well as excessive heat sources (such as the engine's exhaust system) All wiring should be secured at regular intervals (every eight inches or less to achieve maximum points.) as necessary to prevent it from irregular movement. Other engine compartment wiring which is especially dangerous or unappealing may also be included in this category.

WOW/Creativity of Power Source Wiring (0 - 5) - Points will be awarded for a power source and wiring design that exhibits creativity or "WOW". Creativity or the "WOW" factor are techniques and/or simply the overall appeal of this portion of the vehicle. This allows the judge to award competitors points for making their vehicles more appealing to spectators and other competitors. Because the overall caliber of competitors may vary, the number of points awarded to the same design may also vary to some extent. Maximum points will only be awarded to the most appealing and creative installations at any given event.

SIGNAL SOURCE AND PROCESSORS

Equipment Properly Mounted (0 - 5) - The signal source components and any additional processors, such as equalizers, crossovers, and enhancement devices, must be firmly mounted to the vehicle. The component's mounting should not allow irregular movement of the component or the surface the component is mounted on in any plane of motion. If a component is mounted to a normally moving portion of the vehicle, then that particular portion of the vehicle will be inspected for irregular movement. Normally moving portions of the components, such as motorized faces or detachable faces, should be examined with slight force. Additionally, any

source unit or processors mounted using a drywall type screw will be considered improperly mounted and will be awarded minimum points in this category.

Signal Source and Processor(s) Properly Fused (0 - 5) - All power wires extending to or from the signal source and processors must be properly fused. It is the responsibility of the competitor to ensure that all fuse ratings for all installed electronics are documented for the judge's reference. Competitors will receive maximum points in this category if in the judge's opinion ALL of the signal source and processors are properly fused and these fuses do not require extensive disassembly of the audio system to service.

Equipment Maintains Theme of Installation (0 - 5) - Each signal source or processor component should be mounted in an orderly fashion that is consistent with its surroundings. Great care should be taken to ensure that each component's mounting is free of visual imperfections. There is no set guideline stating that the component should appear to be either stock or highlighted. A competitor may choose to highlight one portion of the vehicle while another remains stealth. Consideration will be given in this matter and points may not be deducted. This division will be defined as front of vehicle ("B" pillar forward) and rear of vehicle ("B" pillar toward the rear). In cases of vehicle with a trunk, the interior will be considered one theme area and the trunk another.

Normally Used Equipment Easily Accessible (0 - 5) - Any components that require adjustment or access during the normal operation of the system should be within comfortable reach when seated in the driver's position. This does not include components that are normally adjusted only when installed or inspected. Components with visual displays should also be within comfortable driver's view at or near dash level. Compact Disc changers, which by design are intended for trunk mount, need not be within reach of the driver but should be easily accessible otherwise. Also, extensive unlabeled operating components should also be avoided.

Signal Source and/or Processor Wires Run Neatly, Safely, and Securely (0 - 10) - All power wires and signal wires extending to or from the signal source and processors must be routed and terminated in an orderly fashion. All wires should be secured at regular intervals (every eight inches or less to achieve maximum points) so as to prevent irregular movement. Wire protection should follow the same theme (TekFlex, loom, etc) as other interior wiring in the audio system. Each power connection should be solid, free of fraying strands, and protected from accidental shorting. A crimped or mechanical termination that has also been soldered and then protected by a sheath that completely covers the termination may be awarded maximum points! Signal wires should be routed away from power wires to prevent radiated noise. All wires should be routed away from separately moving parts of the vehicle. Photos may be necessary for maximum points. Maximum points will be awarded if all wiring is completely protected end to end (including connections), securely mounted and completely documented.

WOW/Creativity of Signal Source and Processors (0 - 5) - Points will be awarded for signal source and processor installation that exhibits creativity or "WOW". Creativity or the "WOW" factor are techniques and/or simply the overall appeal of this portion of the vehicle. This allows the judge to award competitors points for making their vehicles more appealing to spectators and other competitors. Because the overall caliber of competitors may vary, the number of points awarded to the same design may also vary to some extent. Maximum points will only be awarded to the most appealing and creative installations at any given event.

SPEAKERS

Speakers Properly Mounted (0 - 5) - All speakers in the vehicle should be securely mounted so that no irregular movement is allowed. This will include the actual driver and/or panel that the driver is mounted to. Any speaker mounted with a drywall type screw will be considered improperly mounted and will be awarded minimum points in this category. Pan head or equivalent will be required to obtain maximum points.

Speakers Properly Protected (0 - 5) - All speakers in passenger areas of the vehicle must be properly protected from damage during the normal use of the vehicle. If a judge can touch the cone or surround of a speaker with the blunt end of a ballpoint pen then that speaker it may be considered only partially protected. No grill will be considered zero points. Such protection may include, but is not limited to, an expanded mesh grill, waffle grills and so on. Speakers located in a trunk or hatch area (in vehicles with no rear seat, the area behind the "B" pillar will be considered hatch area) must be protected from damage. All speakers in these areas should have grills with no more than 2 inch gap at any one point. Inverted sub woofers will be considered properly protected behind the "B" pillar.

Speaker Wires Run Neatly, Safely, and Securely (0 - 10) - All wires extending to the speakers should be routed in an orderly fashion away from separately moving portions of the vehicle. The speaker wires should be secured at regular intervals (every eight inches or less to achieve maximum points) to prevent irregular movement. Wire protection should follow the same theme (TekFlex, loom, etc) as other interior wiring in the audio system. A grommet should be securely installed at any point where a speaker wire must pass through metal or other abrasive material. All speaker wires should be hidden from view in a normal seated position. Any speaker wires that must pass outside the vehicle, such as those extending into the doors, must be encased in a protective material, such as split loom or a rubber boot to achieve maximum points. Each speaker wire should be terminated solidly without fraying strands. A crimped or mechanical termination that has also been soldered and then protected by a sheath that completely covers the termination may be awarded maximum points provided other areas in this section achieve maximum points. Photos may be necessary for maximum points. Maximum points will be awarded if all wiring is completely protected end to end (including connections), securely mounted and completely documented.

Speakers Maintain Theme of Installation (0 - 5) - Each speaker should be mounted in an orderly fashion that is consistent with its surroundings. Great care should be taken to ensure that each speaker's mounting is free of visual imperfections. There is no set guideline stating that the speaker should appear to be either stock or highlighted, but it should be cosmetically integrated.

WOW/Creativity of Speaker Installation (0 - 5) - Points will be awarded for a speaker installation that exhibits creativity or "WOW". Creativity or the "WOW" factor are techniques and/or simply the overall appeal of this portion of the vehicle. This allows the judge to award competitors points for making their vehicles more appealing to spectators and other competitors. Because the overall caliber of competitors may vary, the number of points awarded to the same design may also vary to some extent. Maximum points will only be awarded to the most appealing and creative installations at any given event.

AMPLIFIERS

Note: If an audio system does not use any external amplifiers, but instead uses only a signal source or processor with a built-in amplifier, then the signal source or processor shall be considered an amplifier and will be evaluated accordingly.

Amplifier(s) Properly Mounted (0 - 5) - All amplifiers in the vehicle must be firmly mounted to the vehicle. The amplifier's mounting should not allow irregular movement in any plane of motion (up, down or side to side). If an amplifier is mounted to a normally moving portion of the vehicle or installation (fold down seats, motorized amplifier racks, and etc.), then that particular portion shall be inspected for irregular movement. Additionally, any amplification device mounted using a "drywall" type screw will be considered improperly mounted and will receive minimum points in this category.

Amplifier(s) Properly Fused (0 - 5) - All power wires extending to or from the amplifier(s) must be properly fused. It is the responsibility of the competitor to ensure that all fuse ratings for all installed amplifiers are documented for the judge's reference. Competitors will receive maximum points in this category if in the judges opinion ALL of the amplifiers are properly fused and these fuses do not require extensive disassembly of the audio system to service.

Effectiveness of Amplifier Cooling (0 - 5) - This section will evaluate the effectiveness of the cooling system. The amp(s) should remain cool at all times (not too hot to touch), even during peak demand. Each amplifier in the vehicle must have adequate cooling or ventilation according to it's size and location. All amplifiers, except those mounted in large open areas, will require a forced air cooling system, or better, to obtain maximum points in this category. Any amplifier(s) with functioning forced air cooling that move adequate air will receive full points. Creativity is not part of this category.

Amplifier Wires Run Neatly, Safely, and Securely (0 - 10) - All power wires and signal wires extending to or from the amplifiers must be routed and terminated in an orderly fashion. All wires should be secured at regular intervals (every eight inches or less to achieve maximum points) to prevent irregular movement. Each power connection should be solid, free of fraying strands, and protected from accidental shorting. A crimped or mechanical termination that has also been soldered and then protected by a sheath that completely covers the termination may be awarded maximum points provided other areas in this section achieve maximum points All wires should be routed so as not to interfere with the normal use of any surrounding areas. Lastly, each amplifier must retain all manufacturer input or output protection, including speaker lead fusing. If an amplifier is protected internally, an owner's manual may be required to show proof of such protection. Photo's maybe necessary for maximum points. Common sense will be used when evaluating and scoring this category.

WOW/Creativity of Amplifier Installation (0 - 5) - Points will be awarded for a amplifier installation that exhibits creativity or "WOW". Creativity or the "WOW" factor are techniques and/or simply the overall appeal of this portion of the vehicle. This allows the judge to award competitors points for making their vehicles more appealing to spectators and other competitors. Because the overall caliber of competitors may vary, the number of points awarded to the same design may also vary to some extent. Maximum points will only be awarded to the most appealing and creative installations at any given event.

ATTENTION TO DETAIL

In this section the Installation judge will evaluate the system on its overall appearance - little things may count a lot. Each compartment should be clean and free of imperfections. Fabric should be turned so that all grains will match, screw heads may be aligned, panels should fit snugly, color and texture of materials should blend, contours should flow smoothly, and etc.

Equipment detail (0 - 5) - Special attention is paid to consistency of product colors, trim, light, lettering, texture, and alignments.

Material detail (0 - 5) - Special attention is paid to the detail of materials, security, safety, or adaptability.

Application detail (0 - 5) - Special attention should be paid to the panel fit and finish, equipment should be mounted so that it is not inconsistent (mounted straight, level, flush) with the surrounding equipment. Additionally, speakers with logos may be aligned and/or facing the same direction to score maximum points in this category.

OVERALL INSTALLATION CREATIVITY

This category will be used to award points for creative installation techniques that directly affect the systems audio performance. Judges will award a maximum of 3 points for each listed creative item in a vehicle. Judges may not award points for items that were already considered for creativity points or award "general" points without listing what the creativity points are awarded for. Additionally, no points will be awarded for items that are not directly installation related (i.e. custom wheels, custom paint, water falls, etc....)

OVERALL SYSTEM

Overall cleanliness of vehicle (0 - 5) - A clean vehicle shows both respect for the judges and the competitor's pride in the vehicle. Only a very clean vehicle will receive maximum points. Some allowances may be made for lack of cleanliness if the event is held during bad weather or with less than appropriate judging area conditions.

Overall security of system (0 - 5) - An audio system should be designed to deter and prevent theft. Components should be able to be disguised or hidden from a thief's view from outside of the vehicle. Speaker grills, fake radio covers, and etc. may be used for disguises. Especially solid component mounting or tamper proof fasteners may also be considered as some theft prevention.

Ease of system maintenance (0 - 5) - A well-designed audio system should take into account the inevitable fact that each component will require repair or replacement, sooner or later. Each audio system component must be reasonably accessible for this reason. It should not require extended periods of time, in the judge's opinion, to simply remove a component or reinstall it.

PRESENTATION

The competitor will have 7 minutes to completely present the vehicle to the installation judge. The competitor will have 2 points deducted from the presentation score after 7 minutes has expired. 1 point will be deducted for each additional minute up to 10 minutes. When 10 minutes has expired, the competitor will be "cut off" and judging will begin. During this 7-minute period the judge(s) will not be scoring the system, but will be very attentive to the competitor. The competitor should explain all parts of the audio system while showing their existence and function, if necessary. Photographs (or other form of media) of components or installation techniques which are not readily apparent, an audio system layout, and other diagrams (etc.) may help the competitor to more effectively present the audio system. Additional materials pertaining to the audio system may be available to the judges after the presentation period has expired.

A competitor must present the vehicle to the judges during the event. ONE "co-pilot" (assistant) will be permitted to assist while the vehicle is being judged. The "co-pilot" may only pull panels, open doors, etc but will not offer any assistance with the presentation. Any "co-pilot" presenting the vehicle (pointing out installation points during the presentation, prompting the presenter, answering questions, etc) will result in the registered competitor receiving a 0 (zero) on their presentation score. The average score in this category shall be three points. Points may also be deducted if, in the judge's opinion, the competitor lacks a general knowledge or understanding of the audio system.

If a competitor is unable to attend an event the competitor may petition USACi Rules and Ethics to designate someone else to show the vehicle. The designated person will be considered a competitor and will assume all responsibilities of such. If a competitor is unable to present the vehicle due to handicap or other extenuating circumstances, that competitor may appeal to the USACI Rules and Ethics board for a presentation exemption. If an exemption is awarded, the

competitor who owns the vehicle MUST be with the vehicle while it is being judged. The competitor will be required to show the head judge and/or the event director the official written exemption at every event. Additionally, the competitor is responsible for the conduct of his or her assistant. If any assistant is found to be disruptive or unruly during the event, the competitor will be penalized.

SOUND QUALITY JUDGING CRITERIA

A USACI competitor's audio system's sound quality will be judged according to the rules and guidelines in this section. Few points shall be awarded in a category if the system fails to meet the judging criteria for that category. Partial credit may be given if the system is nearly consistent with the judging criteria for that category. Maximum points shall only be awarded if the system completely meets or exceeds the criteria for that category.

The general rule for Sound Quality judging is to evaluate how well the audio system duplicates or recreates the original music performance. All musical information, including direct and reflected sound, must be recreated with accurate tonal balance. The musical information should also seem to come from the same direction and distance from the listener as in the original performance. When evaluating a very accurate audio system, the listener should be able to close his or her eyes and feel that they are actually experiencing a live performance.

A competitor will not be allowed any extra time to adjust the audio system for Sound Quality judging or borrow official judging software being used at that event from a judge. A Sound Quality judge will only adjust the system's volume and use such signal source playback functions such as fast-forward and rewind or tracking. All other settings will be left untouched and should be preset.

Sound Quality software (Compact Disc) will be provided by USACI and should not be substituted during the event. It is the competitor's responsibility to ensure that the software is returned to the judging staff after Sound Quality judging is completed. If the software is not returned, the competitor will be considered disruptive to the event and appropriate action will be taken. Alternate software (MP3, MP4, DVD, cassette tape, etc) may not be available during the event. The competitor must specify any special source requirements prior to registration to ensure that official software in that format is supported at the event.

It shall be the Sound Quality judge's responsibility to score the competitor's audio system according to the following rules and guidelines to the best of this judge's ability. It is the competitor's responsibility to accept that the scores awarded by the judge are given in the competitor's best interest as an honest evaluation of the audio system.

The competitor must present the sound quality judge a seating position that closely approximates the normal seated position while operating the vehicle. The sound quality judge must judge the vehicle seated in the seat placement presented by the competitor. If the judge feels that this position will not allow him or her to accurately score the vehicle or is unrealistic, the head judge will determine if the seating position is unrealistic. The sound quality judge may NOT adjust the seat or seating position to personal tastes.

STAGING

The soundstage is an area containing all of the performers. The sound stage should have proper width, depth, and height direction. For a vehicle to receive maximum points in this category, it must accurately reproduce all components of the sound stage.

Position: Front to Rear (1 - 10) – The judge will evaluate where the front of the performer's stage is located. Ideally, the front of the stage should appear to start well out in front of the listener and beyond the confines of the vehicle. An audio system that exhibits "rear stage" will appear to have most or all of the audio information originating from behind the listener with very



little sound originating in front of the listener. This can be likened to listening to a live performance while sitting backwards in your chair. A vehicle that exhibits rear stage will receive minimum points.

Width (1 - 10) – The stage's left and right boundaries will be evaluated in this category. The stage should appear to extend outside of the left and right confines of the vehicle. The stage should appear seamless from left to right with no noticeable holes or gaps. If the audio system cannot accurately reproduce Left of Center or Right of Center positions, points will be deducted in this category. If the audio system lacks width, then the stage will sound as if all the performers are grouped closely near the center of the sound stage and points will be deducted.

Height (1 – 10) – This section will evaluate how accurately the sound system recreates the proper stage height across the entire sound stage. The soundstage should appear to be at or near eye level for the listener, placed between the top of the dashboard and rear view mirror when in a normal seated position. Maximum points will only be awarded if all portions of the stage are at the proper height. If a sound stage varies in height from one area of the sound stage to another, an average of the best and worst stage height will be awarded. Example: Judging from the driver's seat, the center and right placement appear to maintain the same relative vertical position but the left placement is considerably lower than the other portions of the stage. The center/right score (10) will be averaged with the left score (2) to arrive at the final score (6).

Depth (1 – 10) - When evaluating a sound field that has good depth recreation, it should be apparent that some of the performers are also closer to the listener than other performers. Using the baseline obtained in the "Position" section, the judge will evaluate how well the vehicle accurately reproduces the depth of the recording.

Balance L/R (1 – 10) – The stage should be balanced front to back, left to right, and top to bottom. It should not sound "right side heavy" or "thin on the left side" for example. It should sound consistently proportional throughout the stage area. A stage split front to rear (the left portion of the stage originating in front of the listener and the right portion originating behind the listener or visa versa) would score poorly in this category.

IMAGING

Imaging is the proper placement of the individual performers and/or instruments within the sound stage. The images on the sound stage may appear to be focused or diffused depending on the characteristics of the individual performer. These images should remain stable and not randomly change location on the sound stage during the performance. The images should remain stable at all volumes and frequencies. Example: The lead vocals in a recording may be perceived as having a "tight and focused" image while a piano located toward the rear of the stage may have a "broad or diffused" image.

Proper image separation is important to a well-balanced soundstage. Each image should originate from its own distinct location on the sound stage. No two images should appear to come from the exact same location. The sound stage should maintain seamless transitions from one image to the next and no gaps or missing musical information should be evident.

Left Position (1 - 8 points) Instruments and/or performers on the left side of the sound stage should be placed in the correct locations.

Left Focus (1 - 7 points) Images on the left side of the sound stage should be focused and well defined. The audio information from any given performer/instrument should come from an exact point on the sound stage.

Center Position (1 - 8 points) Instruments and/or performers at the center of the sound stage should be placed in the correct locations.



Center Focus (1 - 7 points) Images at the center of the sound stage should be focused and well defined. The audio information from any given performer/instrument should come from an exact point in the sound stage.

Right Position (1 - 8 points) Instruments and/or performers on the right side of the sound stage should be placed in the correct locations.

Right Focus (1 - 7 points) Images on the right side of the sound stage should be focused and well defined. The audio information from any given performer/instrument should come from an exact point in the sound stage.

(Note: See Width for Left of Center and Right of Center scoring)

AMBIENCE/SPATIAL REPRODUCTION

This section will score the system's ability to accurately reproduce the spatial characteristics of the room that a musical track was recorded in. The audio system should give the sensation of being in a much larger space than that allowed by the confines of the vehicle. The audio system should be able to make the physical boundaries of the listening environment transparent.

Reproduction (1 - 5 points) - This section will score the system's ability to accurately reproduce the spatial characteristics of the room that a musical track was recorded in.

Size of Space (1 - 5 points) - The audio system should give the sensation of being in a much larger space than that allowed by the confines of the vehicle.

DEFINITION AND CLARITY

A properly designed audio system should be capable of reproducing all audible frequency ranges with clarity, definition and authority. An audio system should not add any unnatural coloration or distortion to the original recording. Instruments or vocalists from each frequency range should appear distinct and natural. There should be no additional resonance or harmonic overtones. Unnatural or "overly processed" sound is not desirable, as the music will lose warmth and realism. The system will be evaluated at normal and slightly above normal volume and an average of both scores will be awarded.

Low Frequencies (1 - 10 points) - This frequency range should not sound exaggerated in relation to the rest of the system but should blend sonically and appear to originate in the same location as the other frequencies being reproduced. The musical notes should sound realistic and not have a noticeable rumble or unnatural sound. An audio system should also be able to reproduce the lowest frequencies accurately without distorting or "breaking up". This frequency range includes the lower harmonics of the bass drum, bass synthesizer, pipe organs, etc. The system will be evaluated at normal and slightly above normal volume.

Mid-bass Frequencies (1 - 10 points) Frequencies in this range should be realistically reproduced and balanced. The musical notes should be free of unnatural colorations or resonant sounds. The tones should sound realistic, accurate and precise. This frequency range includes lower vocals, snare drum, bass guitar, trombone, etc.

Midrange Frequencies (1 - 10 points) Frequencies in this range should be realistically reproduced and balanced. The musical notes should be free of unnatural colorations or resonant sounds. The tones should sound realistic, accurate and precise. Voices and instruments should sound rich and natural without being harsh, dull, compressed or distorted. The frequency range includes upper vocals, piano, guitar, keyboard, trumpet, etc.



High Frequencies (1 - 10 points) Frequencies in this range should be realistically reproduced and balanced. The musical notes should be free of unnatural colorations or resonant sounds. The tones should sound realistic, accurate and precise. The frequency range includes drummer's high hat, cymbal, upper flute, etc.

Dynamics (1 - 10 points) Dynamics refer to the power of tones. The dynamic range of a recording is the extremes between loud and soft portions of the music. The audio system should be able to accurately reproduce the entire dynamic range of the recorded material without sounding harsh, compressed or distorted.

Tonal Balance (1 - 10 points) – The audio system must reproduce the recorded audio information without exaggerating or minimizing a frequency or group of frequencies. If a competitor were to look at the audio system's output on an RTA meter, there should be smooth band-to-band transitions across the entire measured frequency spectrum without any abrupt peaks or holes in the frequency response.

Environment (1 – 5) - The audio system should not add any sound that is not a part of the original sound recording. Sounds such a buzzing or rattling should not be caused by the audio system during evaluation. These sounds can be added due to improperly mounted speakers, loose panels or components. If no foreign sounds are heard during audio playback, maximum points will be awarded.

NOISE

This category will evaluate the lack of noise in the entire audio system. These noises will include both speaker generated and system generated noises. A good rule of thumb to use when evaluating noise is that when the vehicle contained the OEM sound system, no abnormal noises (relay clicks, pops on/off, hiss, etc) were present and the installation of the aftermarket audio system introduced noises in to the listening environment.

Engine Noise (1 – 3) – The vehicle's engine must be running and a current load must be placed on the charging system (i.e. headlights on and set to high beam, air conditioner operating, brake lights operated, etc). The judge will carefully listen for alternator whine, spark plug ticks and other noises induced by the vehicle's electrical system. The judge should be careful to distinguish between actual alternator whine produced through the audio system and other similar noises that already exist while the engine is running. These noises may include those produced by turbo chargers, the bearings in high output alternators, and etc. By listening to the audio system both while the engine is running and while it is not, a proper evaluation of the noise source can be made.

Note: The engine should be OFF to properly evaluate the remaining noise categories.

Mechanical/Fans/Actuators (1 – 3) – This will evaluate noises other than those included in the recorded media while the audio system is playing and the engine is off.

Note: The ENTIRE audio system should be designed to turn off with ONE power switch within 10 seconds. If the entire audio system fails to completely turn on or off within 10 seconds, minimum points will be awarded in the turn on or turn off category.

Turn Off Noise (1 – 3) – All components in the system should power down silently. No click, buzzes, thumps or pops should be present when the system powers down.

Turn On Noise (1 – 3) – All components in the system should power up silently. No click, buzzes, thumps or pops should be present when the system powers up.

Noise Floor (1 – 3) – A system with an improperly set gain structure will exhibit a hiss or “static” sound at full volume playing the zero bit track. This section will be evaluated on the zero data track at full system volume.

OVERALL SOUND QUALITY

The Sound Quality judge should evaluate the overall appeal of the audio system. None of the evaluations made for previous categories should have any bearing on this section. The average score for this section is five points. An audio system that does not create an overall comfortable sound field may receive a less than average score. However, an audio system that sounds good and would be pleasurable to listen to for extended periods of time will receive an above average score.

SOUND PRESSURE LEVEL - SPL

If a competitor chooses to use an SPL “podium”, he or she will be required to use the same brand equipment in the podium as is installed in the vehicle with the same output voltages. This will include all processors, head units and so on. Some examples would be:

Competitor A has 2 EQT’s, a PLD1 Line driver and Pioneer M900 in the vehicle. This competitor uses a Pioneer M-900 and PLD1 Line driver in the Podium. This would be allowable.

Competitor B has an EPX2, PA1 and Alpine 7919 in the vehicle. This competitor has a Alpine 7909, PLD1 and an EQX in the podium. This would not be allowed.

(All models and brand affiliations are used to clarify this rule)

The SPL meter should be set to display only Max SPL and adjusted to the correct SPL range before initiating the testing. All gain or loss filters should be bypassed or set to their neutral position. Windows, doors, and etc. can be either open or closed during this test. Doors may not be slammed or fanned during testing.

The competitor will have a maximum of five minutes to make any adjustments to the audio system for this test. If the competitor is not ready for the test within the five-minute period, a minimum of ten points will be deducted. After the SPL meter has been placed and the competitor has loaded the software and readied the system, the competitor should signal the judge that he or she is ready for the test. The judge should then reset the SPL meter and ensure that all entrances are closed.

After the judge signals the competitor to begin the test, the competitor will play 30 (thirty) seconds of an official USACI SPL music track (no sine sweeps) in order to obtain a reading on the SPL meter. The music may not be restarted after judging begins. If the audio playback does not remain audible to the judge or if it is restarted (or repeated in any way) then ten points may be deducted from the competitor’s SPL score. The competitor must play the SPL track for a full 30 seconds in order for the scoring attempt to be considered official. However, the competitor will NOT be required to play the audio system at maximum volume for the entire 30 seconds and SPL judge must be able to audibly verify that the correct disk is being used during testing.

The use of tone generators, doublers or any other device that externally (outside of the closed signal chain) generates or alters the frequencies that the system is playing during SPL testing is expressly prohibited and will result in disqualification with no refund. Any competitor generating sound pressure with anything other than the provided musical software or externally influencing the SPL measuring equipment will be immediately disqualified and the incident forwarded to the USACI Rules and Ethics committee for review. Competitors found to be intentionally attempting to violate the above rules may be banned from competition for a period not less than 1 year and not more than 100 years. The decision of the Rule & Ethics committee will be final.

If the competitor feels that he or she had a system malfunction during the SPL testing, he or she may elect to retest. If the competitor elects to retest, he or she will be given 2 minutes to correct any problem(s) and retest. The result of the second retest will be the competitor's final score. The competitor cannot elect to take the "better of the two" for any reason.

While personal safety is ultimately the competitor's responsibility, hearing protection is required if the competitor is inside of the vehicle during SPL testing. The competitor will be required to furnish his or her own hearing protection.

Competitors may have subwoofers installed in the front of the vehicle but may not place the microphone or sensor within 36" of the cone or port of the closest woofer during SPL testing.

The competitor's score will be based on the SPL meter's reading after the test track has been played. The competitor will receive full points for SPL. (Example: A competitor's SPL reads 143.2 so the competitor would receive 143.2 points in the SPL section of the score sheet)

Note: Any ruling by the head judge is reversible only by a ruling of the rules and ethics board and only having been submitted by the petitioner in writing.

Vehicle Qualification: Please refer to the "Modified SPL" rules for specific microphone placement and vehicle interior modifications permitted.

SHOWMANSHIP AND BONUS POINTS

The competitor will be encouraged to display his or her vehicle for the spectators at all sanctioned USACI events. If the competitor chooses to display the vehicle, he or she will be required to have the vehicle on display for a period that will generally start at 1:00pm and conclude at 4:00pm to receive points in this category. The vehicle must be on display during this period unless it is in the judging lane. The head judge or event sponsor reserves the right to modify or omit this category due to inclement weather, space constraints or other reasons. Only the head judge, or another person designated by the head judge, will be judging this category. Please keep in mind that there may be space constraints that will not allow elaborate display areas to be set up. You will be informed by the head judge at the competitor's meeting of the approximate amount of space allotted for each vehicle and display. If the competitor chooses not to display the vehicle, a score of zero will be awarded in this section. The location and length of time required satisfying this category would be determined by the event director and covered at the competitor's meeting.

Display (0 or 10) - A competitor will earn 10 points in this section by simply opening the vehicle up for the spectators to look at. Typically, presenting the vehicle with all locations that have audio, or other, upgrades will be required. This will include, but is not limited to, the hood, passenger compartment, trunk and/or bed. Points will not be awarded, if in the judge's opinion, the vehicle is not easily viewable by the spectators.

Creativity (0 - 10) - Creativity points may be awarded for display books, labeling or signs highlighting the audio system, using lighting to highlight audio components, video (or other media) detailing the vehicle and audio system and so on. You are encouraged (but not required) to stay with the vehicle, while it is on display, as the judge may award creativity points by answering simple questions about the audio system while it is on display. Competitors are encouraged to engage the crowd to receive maximum points. Maximum points will only be awarded to the most creative and original displays. Creativity is considered any ideas that are out of the ordinary when compared with other competitor's displays at that event. Because the overall caliber of competitors may vary from one event to another, the number of creativity points awarded to the same display may also vary to some extent. Maximum points will only be awarded to the most creative, informative and original displays.



Note: Creativity points will NOT be awarded without the basic display guidelines being met and points awarded in that category.

Note: Xtreme competitors will be required to display their vehicles for an extended period of time to satisfy the display category. The head judge or event director will discuss the display category with the Xtreme competitors at the event.

USACI Decal Bonus (0 or 5) - A competitor will be awarded 5 bonus points for prominently displaying an official USACI sticker on his or her vehicle.

USACI Membership Bonus (0 or 5) - A competitor will be awarded 5 bonus points for being a current USACI member. Each membership is good for 1 year from the time you join.

APPENDIX A. - Proper American Gauge Wire (AWG)

Current Demand in Amperes

	Up to 4'	Up to 7'	Up to 10'	Up to 15'	Up to 20'	Up to 25'	Up to 30'
0-10	20	18	16	14	14	12	12
11-25	16	14	14	12	10	10	8
26-50	12	10	10	8	6	6	4
51-75	8	8	8	6	6	4	4
76-100	8	8	6	4	4	2	2
101-150	4	4	4	2	1	1	1/0
151-200	2	2	2	1	1/0	1/0	2/0
201-300	1/0	1/0	1/0	1/0	2/0	2/0	3/0
301-400	3/0	3/0	3/0	3/0	4/0	4/0	4/0

The above chart shows the minimum copper wire size acceptable for normal wire lengths used in a vehicle to meet normal current demands. If aluminum wire or tinned wire is used, the wire gauge size should be even larger to compensate. The wire size calculations are intended to allow no less than .5 voltage drop to a circuit, assuming that the wire is properly terminated.

APPENDIX B. - Upgraded Battery System

USACI does not require a competitor to upgrade their battery. In order for the competitor to receive maximum points in the "Upgraded Battery" section, any upgrade will be considered sufficient. The above chart shows the suggested total battery current for most total RMS wattage ranges of normal audio systems. A battery system's total current is equal to the sum of each battery's maximum amperage rating, or cold cranking amps (CCA), including all batteries connected in the battery system. The calculations assume an average stock battery rating of 650 CCA.

APPENDIX C. - Upgraded Charging System

USACi does not require a competitor to upgrade their charging system. In order for the competitor to receive maximum points in the "Upgraded Charging System" section, any upgrade will be considered sufficient. The previous chart shows the suggested amount of alternator, or charging system, upgrade over the stock charging system necessary for most total RMS wattage ranges of normal audio systems. Total charging system current is equal to the sum of all alternator current



ratings. Other charging devices, which are part of the charging system, should also be included in the sum.

A vehicle's total charging system current should be equal to the vehicle's stock alternator current rating (in amperes) plus the minimum amount of upgrade current required for the audio system.

APPENDIX D. - USACI Event Guidelines

This section will outline the event and judging procedures at a typical USACI sanctioned event. This is not an all inclusive guide as to how every show will progress but will give you an idea of what is expected of you and when. This section is targeted at the first time USACI competitor so that you will be prepared to progress smoothly through the judging line. This guide also assumes that you have read the rulebook and are now familiar with the basic USACI guidelines and rules. If you have any questions or issues before, during or after the event, do not hesitate to ask.

Before Entering the Lane

Make sure that your score sheet is completely filled out. All of the boxes **MUST** be filled in for your score to count. Simply putting "on file" will **NOT** be accepted. Failure to complete the entire top portion of the score sheet will result in your score sheet being discarded at the USACI office. Also, make sure you are set up and ready to go with your "Sound Quality" settings in your system. This will ensure that you are "ready to go" when the judging starts.

Station 1 - Verification

The verification judge will verify the overall safety of the vehicle and the installed audio system. Additionally this judge will verify the score sheet is filled out properly and completely. At this point, if any inconsistency is found you will be notified of any changes being made. After completion of this station, the judge will fold the score sheet and place it under the windshield wiper or on the dash. FROM THIS POINT FORWARD, YOU WILL NOT BE ALLOWED TO LOOK AT ANY PORTION OF THE SCORE SHEET. Failure to follow this directive can result in the head judge deducting points from your score sheet.

Station 2 - Installation

You will be required to demonstrate and detail all portions of your audio installation at this station. If applicable to your division, you will be given 7 minutes to demonstrate to the judge(s) how and why your vehicle meets or exceeds the installation guidelines outlined in this rulebook. After the 7-minute period has expired, you will be asked to step away and allow the judges to score your vehicle. After the judges have completed scoring the vehicle, you may be given a brief outline of what the judges have found and how to improve your vehicle in the future (time permitting). It is advisable to write this information down.

Station 3 - Sound Quality

This is the only station in which you will typically have very little interaction with the judge. The judge will approach you and ask if you are ready for sound quality judging. (You should already be ready) The sound quality judge may then ask you to load the official judging software and give a brief demonstration of how the tracking and volume controls are operated. At this point you will be required to step away from the vehicle and let the judge(s) score the vehicle. After the judge has completed scoring the vehicle, he or she will exit the vehicle and may discuss what was found and how to improve in the future. (Time permitting) It is advisable to write this information down.

Station 4 - Sound Pressure Level (SPL)

At this station, you will be required to play the provided USACI software for 30 seconds at or near full volume attempting to achieve the highest sound pressure reading. In laymen's terms, you will be testing to see how loud the vehicle will actually play. Most competitors will only play their subwoofers during this test. There are many reasons for this but the most obvious reason is, the



more cone area you have moving air in the vehicle, the higher the SPL reading can be. Usually, there is a big crowd around this station due to the excitement and noise. This will be your chance to show off how loud your system is for the crowd. After you have completed this test, you will be shown your highest Sound Pressure reading and will then be required to exit the judging lane.

Station 5 - Display

This is the final station at a typical USACI event. Here, you will be required to open your vehicle and “show off” the installation and vehicle. You should NOT demonstrate how loud the vehicle would get at this station. You should also be close by your vehicle to answer any questions that are asked of you as well as possibly demonstrate the finer points of your installation. It is your best interest, as well as the sports, to answer these questions in a friendly manner as honestly and completely as possible. You need to be aware that in some cases, these people asking questions may be judges and you are being evaluated on how friendly you are and how well you display your vehicle. This station allows you to show everyone your hard work and also promotes the sport to spectators and future competitors.

Before and After Judging

The USACI staff requests that you not be disruptive during the event before or after you have been judged. Disruptive can be considered, but is not limited to, playing your system near the judging lanes while judging is still in progress. The head judge or event director reserves the right to deduct points or ask you to leave the event if continued disruptions are experienced. If you are asked to leave, you will not receive a refund and any points or awards you earned at that event will be forfeited.

Glossary of Terms

Competitor: The competitor is typically the vehicle’s owner, an employee of its owner, or an immediate family member thereof.

Door Panel: The interior panel facing the passenger compartment is typically considered the door panel. The inner door skin is the metal under the door panel that the door release, speakers, door panel, etc attach to.

Event Director/ Event Registrar: Typically the person at the registration table will be able to answer any question about the event. If this person is unable to answer event related questions he or she can direct you to the proper person.

FIA: Fédération International de l’Automobile - a corporation that does safety ratings for racing equipment

Floor Pan: The metal under seats, driveshaft hump and floor mat area extending from the bottom of the fire wall to the rear bumper to include the area under the rear seats and trunk floor.

FMVSS#209 (§ 571.209 Standard No. 209): This file is PAGES long, you can read there for more on our Federal Standard.
(http://edocket.access.gpo.gov/cfr_2008/octqtr/pdf/49cfr571.209.pdf)

Judge: The Head Judge shall appoint USACI judges. The judge must be directly related to the car audio industry, either by job position or by substantial experience as an Advanced Consumer competitor. Any USACI member may be pre-approved to act in a judging position by becoming a USACI certified judge. Such certification should be requested by contacting the USACI headquarters. A USACI judge may not compete in sound quality at any event if he or she is on the judging staff.



A line judge is typically responsible for a specific station at the event. Any questions about that specific station can be directed at the line judge. If the issue is out of the realm of responsibility of that judge, you may be directed to another person. Usually you will be directed to the head judge or registration table.

Head Judge: The head judge is responsible for the smooth progression of the show. In addition, this person is also responsible for any disputes, rule clarifications and so on. This person has been entrusted with the responsibility of making the show run smoothly. Additionally, this judge is usually very busy but will try to help as best he or she can. You may be referred to another person who can better deal with your issue at that time.

Proper Fusing: A properly fused piece of electronics will not contain a fuse that is higher than the manufacturers suggested value. Automatic reset circuit breakers will not be considered proper fusing. Ideally, fusing should be as close to the source of power as possible and since this is a serviceable portion of the audio system, be easy to service with minimal system disassembly required.

SA: Safety rating for racing equipment

Senior USACI Official: Occasionally, a senior USACI official (President, Executive Director, board member) will be present at an event. This person will typically be able to answer any question you may have at that time. You may bring up an issue that this person has to research or refer to the Rules and Ethics board. If this is the case, you will be given a reply in an expedient manner.

SFI Foundation Inc.: A corporation that does safety ratings for racing equipment

"WOW": The "WOW" factor is techniques and/or overall appeal of a portion of the vehicle (i.e. trunk, interior, etc). This allows the judge to award competitors points for making their vehicles more appealing to spectators and other competitors. Competitors are encouraged to incorporate designs that "stop people in their tracks".

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