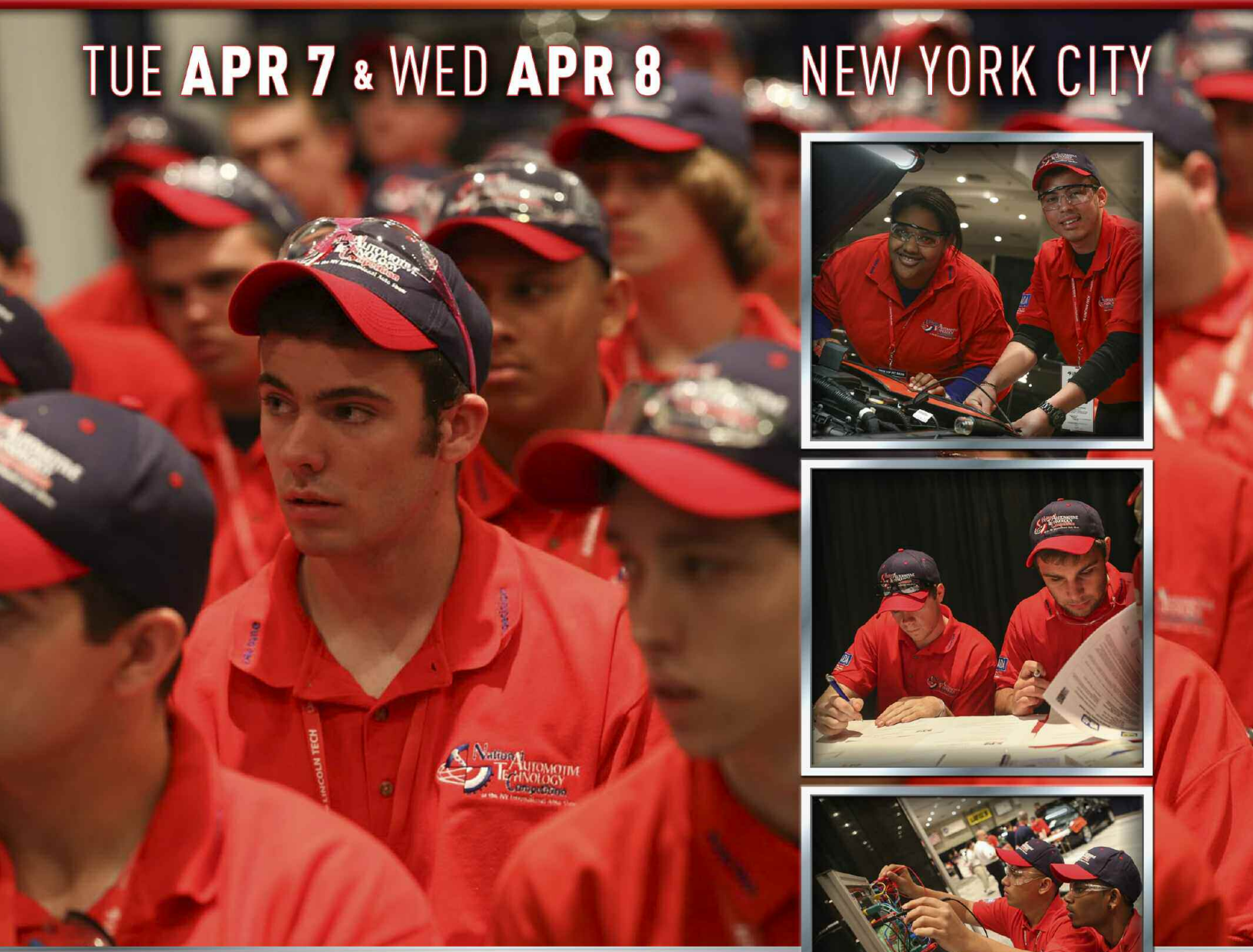
RULEBOOK

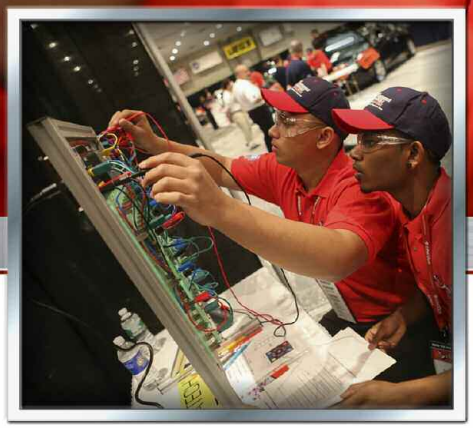
# 2015 NATIONAL AUTOMOTIVE TECHNOLOGY COMPETITION

## TUE **APR 7** & WED **APR 8** NEW YORK CITY









GNYADA
Greater New York Automobile Dealers Association

National Automotive Technology Competition
at the NY International Auto Show

nationalautotech.com
facebook.com/NatAutoTechComp

National Automotive Technology Competition
at the NY International Auto Show

***Welcome Message from GNYADA Vice President – Education & Communications, Edward Gazzillo***

*Students across the nation are gearing up to compete at the 23rd Annual National Automotive Technology Competition for a chance to be named America's Top Technicians.*

*Since 1993, the National Automotive Technology Competition has brought together the country's best and brightest high school automotive students to test their skill, measure their knowledge, and challenge their ability to diagnose and repair vehicles. For the past 22 years, the National Automotive Technology Competition has been designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in today's technologically advanced automotive industry. The job of an automotive technician today is as much about laptops as it is oil changes.*

*The National Automotive Technology Competition was originally conceived by the Greater New York Automobile Dealers Association to help address the shortage of qualified automotive technicians and push the curriculum of vocational education to a higher standard of rigor. This helps to ensure that automotive students master the skills they need to succeed as lifelong learners, workers, and citizens. Schools across America have risen to the challenge. Today's automotive students are better prepared and more qualified to join the workforce than ever before.*

*This event and the changes to the industry that it has helped foster could not be achieved without the support of an industry-wide collaboration that brings together nearly every major automobile manufacturer, retail automobile dealers, dealer associations, educational institutions, and numerous government agencies. Through their efforts, more than $3 million in prizes and scholarships will be awarded to participating students and their schools. These great organizations have literally changed thousands of lives.*

*I congratulate every participant for making it to the National Automotive Technology Competition and wish you the best of luck moving forward.*

Respectfully yours,

Ed Gazzillo

Edward P. Gazzillo
Vice President – Education & Communications
Greater New York Automobile Dealers Association

National Automotive Technology Competition
at the NY International Auto Show

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# THE COMPETITION

## SCOPE

*There are two major components to the Competition:*

### Part I – Workstations

In addition to diagnosing and repairing vehicle problems, contestants will be tested on their knowledge of tools, measuring instruments, specific vehicle components, and job interview skills. The workstations will account for 60% of the total team score.

### Part II – Hands-On

The other 40% of the total test score is based on each Team's ability to thoroughly repair as many of the vehicle faults as possible and to document their repairs correctly on the Repair Orders.

*The total time of the Competition is six hours over the course of the two-day event.*

### Tuesday, April 7, 2015

Student Teams will spend three hours at the Competition Workstations.

### Wednesday, April 8, 2015

Student Teams will have three hours for the Hands-On Portion of the Competition. Teams are responsible for checking all paperwork within the time period. A service manual or a computer (downloaded with manufacturer specific technical information) and other necessary references will be provided. Students must use the manufacturer's service technical information to complete the diagnostic procedures and receive credit for the repair.

## QUALIFICATIONS

Team Members must be high school seniors, eligible to graduate in June of the contest year, and not reached their 19th birthday by January of the contest year. Proof of age and photo I.D. must be presented upon request.

Students who participated in a previous National Automotive Technology Competition are ineligible to compete in the Competition.

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## GUIDELINES AND RESPONSIBILITIES FOR THE NATIONAL AUTOMOTIVE TECHNOLOGY COMPETITION

*These guidelines and responsibilities are designed to inform participating Dealer Associations, Dealers, and Schools what is expected of them by the NATC Planning Committee.*

### Dealer Association Responsibility

- The Dealer Association is responsible to choose a Team that will represent them for the Competition.
- Team selection is up to each respective Association. The challenge is to send the finest two-person high school technician Team in your area. Most Associations either work with an excellent neighboring high school or hold their own local contest as a means of choosing the best the area has to offer. If you need assistance in planning your own local competition, please contact Carole Rogner at 718-640-2012 or carole@gnyada.com.
- The Dealer Association will have selected the vehicle make and model their school will be using during the NATC at the NADA conference in January 2015.
- It is the responsibility of the Association Representative to notify the National Automotive Technology Competition representative of any concerns about the vehicle chosen at the time of the drawing.
- The Dealer Association is responsible for coordinating a relationship between a Dealership of the vehicle drawn and their NATC team.
- It is recommended that you choose a Dealer that will be able to provide assistance to the school and students with their preparation for the competition.
- Associations can contact their assigned manufacturer representative for aid in the search of a cooperating dealership.
- The Dealer Association is responsible to ensure payment of the NATC Registration Fee of $750.
- Registration fees cover operational and administration costs, tickets to the *Welcome to New York Dinner Reception*, tickets to the *National Awards Banquet*, breakfast and lunch on competition days, official competition racing shirt and hat, and much more.
- The registration fee does not cover travel and other expenses.
- The Association is responsible for communicating NATC rules and regulations to their team.
- The Association is responsible for communicating any issues their team is having with their vehicle to the authorized manufacturer representative assigned to them.
- Please remember that companies participating in the NATC volunteer their representative's time, as well as use of vehicles and equipment for the competition. Their authorized representatives merit your courtesy and respect.

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## School/Instructor Responsibility

*Practice time at a dealership must be a school sanctioned event. A school's permission trip form – signed by a school administrator and parent or guardian – must be available for inspection by the dealership representative.*

- The school is responsible for ensuring that competing students and instructors have all the appropriate paperwork on file for the NATC and during training sessions at the local dealership. This includes:
  - Parental/guardian permission contract
  - Medical forms/emergency contact information
  - Code of Conduct
- School/Instructor is responsible for communicating any issues their team is having with their vehicle, assigned dealership, NATC rules, or any other concerns to their Dealer Association.
- School/Instructor is responsible to prepare the competitors to the best of their abilities. Some guidelines for students participating are as follows:
  - Good basic electrical diagnostic skills are a must. Understanding how to make measurements with a volt-ohm meter and interpreting what the readings mean (the old method of just checking/looking at all the fuses will not be sufficient).
  - The students need to learn how to work as a team – understanding what each of their responsibilities are and following through with communication and action.
  - Understanding the three Cs – CONCERN (what is the customer complaining about or what is wrong with the vehicle); CAUSE (diagnose the vehicle to find out what is wrong, including any scan tool results or volt-ohm meter results); CORRECTION (what is needed to repair the vehicle including any parts and/or where the repair information is found. Additionally, the vehicle MUST BE REPAIRED, i.e., parts replaced and rechecked.
- DOCUMENTATION is critical. Every year the Committee stresses this point to students and many times it is forgotten. DO NOT WAIT UNTIL THE END. No additional time is given afterward for documentation. Documentation should be written on the repair order as the competition is in progress.
- Students should not worry if a part that is requested is not available. Make sure the name of the part is clear. The parts department will give the students a generic answer to their request if the part is not available. There is no penalty for this. All that is lost is time on the vehicle.

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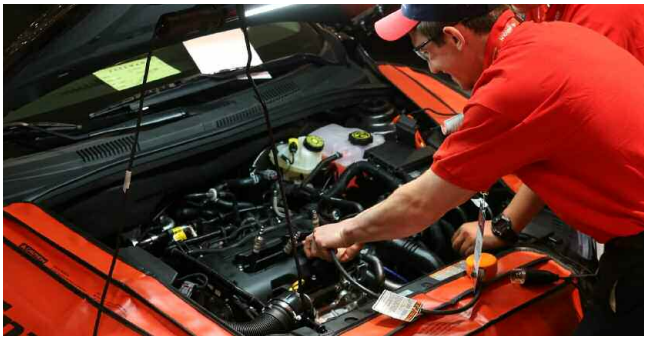
### Dealer Responsibility

- The Dealer is responsible for providing the students access to the model of the vehicle being used in the competition.
- Dealers are to provide assistance from one or more dealer technicians.
- Dealers provide access to technical information in the form of the "service manual."
- Dealerships are not required to loan a practice vehicle to a school.
- Dealerships are not required to loan scanners, tools, equipment, or electronic reference materials to a school.
- If the Dealer has questions or concerns, they should contact the Dealer Association or the assigned manufacturer representative.
- If a dealership does not have a required scanner, tool, piece of equipment or electronic reference material, contact your manufacturer representative. Due to limited supplies, special equipment may not be available at the time of your request.



## WORKSTATIONS

*Workstations allow the contestants to demonstrate skills and knowledge that cannot be measured during the Hands-On portion of the Competition. Each workstation Judge administers and monitors his/her own tests and collects answers on separate answer sheets (not part of the RO). At each station, teams must read and interpret a written set of instructions, perform the indicated tasks, and record their results. The tasks performed follow the ASE Task Lists for five of the ASE automotive test areas, shop safety, and job interview skills.*

- Engine Mechanical (A-1)
- Engine Performance (A-8)
- Steering and Suspension (A-4)
- Shop Safety
- Brakes (A-5)
- Professional Development – Job Interview
- Electrical / Electronic Systems (A-6)

Each workstation may include more than one task.

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## Nissan, Subaru & Toyota: Electric and Hybrid Vehicle Safety Workstation

Students will demonstrate the correct service procedures for disconnecting the High Voltage Battery from the vehicle so service can be conducted to diagnose and replace a high voltage component. Vehicles that will be used in the workstation are a Nissan Pathfinder Hybrid, a Subaru XV Hybrid, and a Toyota Third Generation Prius.

*Nissan Pathfinder Hybrid* – Students will find the procedures for the Nissan Pathfinder Hybrid at www.nissanusa.com/owners. NO sign-in is needed. From the home page select the manuals & guides, then select from the vehicle drop down menu the Nissan Pathfinder Hybrid. Then from the second drop down menu select either 2014 or 2015. A list of manuals will appear. Scroll down and select the First Responders guide.

*Subaru XV Hybrid* – Students will find the procedures for the Subaru 2015 XV Hybrid at http://bitly.com/1LIvt1A. NO sign-in is needed.

*Toyota Third Generation Prius* – Information can be found at http://bitly.com/1LIxWsN.

All tools and required safety equipment will be provided for the students during the competition.

## Snap-on: Information Retrieval Workstation

The Snap-on ShopKey Pro Electronic Service Information System can be obtained by contacting Ken Doran, Snap-on Education Account Manager at ken.j.doran@snapon.com. Access will be granted for a ONE TIME ONLY 14-consecutive-day trial period.

## Hunter Engineering: Wheel Service / NVH Workstation

Through the use of a Hunter GSP9700 Gen-IV Road Force Touch® Diagnostic Wheel Balancer, a Tire Tread Depth Gauge, and a Written Exam, students will demonstrate their understanding of:

- Fundamental Wheel Alignment Angles
- Vehicle Geometry and Alignment Diagnostics
- Basic Wheel Construction
- Wheel Size Information
- Wheel Runout Measurement
- Basic Tire Construction
- Tire Size Information
- Tire Tread Depth Measurement
- Tire Wear Pattern Identification
- Tire Pressure Monitor Systems (TPMS)
- Proper Tire Dismount/Mount Procedures
- Proper Wheel Balancing Procedures
- Axial and Lateral Imbalance Forces
- Road Force Measurement Values Display

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### BMW: Professional Development – Job Interview

Contestants will participate in a simulated job interview. Each contestant must submit a resume and be prepared to meet with someone for a simulated interview process. Each team member will be scored on preparation, the quality of their resume, and overall conduct during the process.

### Lexus: Wire Harness Repair Workstation

Students will demonstrate the necessary skills involving wire harness repair techniques including:

- Soldering with a connector
- Soldering without a connector
- Crimping with insulated connectors
- Crimping with non-insulated connectors
- Insulating with heat shrink tubing
- Connector terminal removal / replacement

### General Motors: Engine Mechanical Performance Diagnosis Workstation

Students are expected to understand the basics of a four-stroke cycle internal combustion engine. Students will be required to diagnose an engine problem using standard tools and procedures.

### General Motors: Brake System Workstation

Students will demonstrate their understanding of a basic disc/drum braking system. The students will be required to inspect and diagnose common brake system concerns using standard procedures and tools.

### Megatech: STEM / Contemporary Integrated Technology Workstation

This workstation is designed to gauge the contestant's comprehension of applied science as outlined in the NATEF standards as they relate to the present and future of the automobile industry. The students will be asked to identify different scientific principles and quantify measurement using DMM (i.e., behavior of a semiconductor material vs. photoelectric effect).

### Megatech: CAN BUS Workstation

This workstation requires general knowledge of CAN operation, terminology and diagnostic checks associated with servicing vehicles equipped with this technology from 2008 to present. Embedded engineering of CAN BUS programming or special diagnostic equipment is not required.

### S/P2: Environmental Safety Workstation

Access to S/P2 Safety and Pollution Prevention e-learning program is provided free of charge to competitors in the National Automotive Technology Competition. BEFORE the competition, instructors are asked to contact S/P2 by email at kelly@sp2.org to receive their students' log-on information for the S/P2 website. Students MUST COMPLETE the S/P2 courses IN ADVANCE of the competition. (Please plan on at least four hours to complete the training.) During the competition,

*-continued-*

students will be required to demonstrate their understanding of basic shop safety and environmental best practices. If you have any questions about how to gain access to the S/P2 e-learning program, call toll free 1-888-241-8332.

## HANDS-ON

The National Automotive Technology Competition covers Engine Management, Vehicle Safety and Chassis/Body/Electrical as well as basic mechanical skills. It is designed to challenge the students by measuring:

- Ability to read and record the 3-Cs (Concern, Cause, and Correction) on a Repair Order (RO)
- Problem solving and deductive reasoning capabilities
- Ability to understand wiring diagrams
- Use of resources such as working with a repair manual, electronic/computer recall service information data
- Performance with measuring tools, meters, and other electronic devices
- Diagnostic disciplines
- Reading comprehension with charges and specs
- Professional work habits and attention to detail

### STUDENTS NEVER

- **Open any fuel lines**
- **Lift the vehicle off the ground**
- **Open hydraulic lines or work on faults involving the airbag system**

## SCORING

Workstations account for **60%** and Hands-On Portion accounts for **40%** of the final score.

Judges look for key diagnostic steps to be performed during each task, as well as correctness of recorded answers. The emphasis of the Competition is on diagnostics and properly referencing technical information. Recorded references may account for up to **15%** of the Hands-On score.

It is important to note that time is never a judging factor and it is not used as a tiebreaker. Instead, students are rated on use of service and repair technical information (referencing where the information is found), proper work habits, quality of repair, ability to accurately list replacement parts, and the ability to record the 3-Cs on the repair order.

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## DRESS

- Students are provided with Official Competition Shirts and Hats. Students are required to wear black chinos/Dockers trousers while competing (NO JEANS).
- Students are required to bring safety glasses with side shields or safety-rated prescription glasses.
- Students are also required to wear proper protective work shoes or boots (NO SNEAKERS) for the Competition.

## TOOLS & PARTS

- All tools necessary to make repairs are included in the tool set that each student team receives at the Competition.
- Special tools, including a manufacturer's scan tool, will be provided and each team's table will have the same or similar special tools displayed.
- Tools are provided only as required by factory service procedures (i.e., noid lights).
- Replacement parts are specified by the technical experts and are available at the Parts Counters in the contest area.
- Only one student per team is allowed at the Parts Counter at any time and that student must bring the RO and defective part to the counter when requesting a replacement. Only one part can be ordered during a visit to the Parts Counter.
- When asking for any part, even a bulb, the specific number or type must be requested in writing on the RO or the student will be told it is out of stock.

## REPAIR ORDER (RO) INFORMATION

- The RO will give the team a brief description of why the vehicle is in the dealership service department.
- All information about the repair must be documented on the Repair Order. Team members must properly complete their team information, parts description, 3-Cs, and manufacturer's technical service references on the RO.
- No credit will be given for work not written on the RO. There is also no credit given for a successful repair if a team fails to indicate on the RO that a replacement part was requested and used.
- Each team is given several ROs to begin the contest and may request more.
- A sample RO is included at the end of this document.

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**NO EQUIPMENT, TOOLS OR TECHNICAL SERVICE INFORMATION (OTHER THAN THOSE PROVIDED BY THE VEHICLE MANUFACTURER AT THE TEST SITE) WILL BE ALLOWED IN THE COMPETITION AREA.**

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## JUDGING

*The Judges who score the contest are automotive industry professionals. They are responsible for managing the Competition area as well as determining the order of finish. Each Judge will supervise and oversee approximately five stalls. Judges use a Found and Fixed checklist to check the RO for the 3-Cs and shop manual reference information to score each team's performance. The Judges carefully check the contest vehicles just after they are bugged and again on the morning of the Competition.*

The Judges must make certain that the faults are set in a uniform manner and that the factory technical experts (Stall Monitors) fully understand their role in the Competition, which includes:

- Promoting safety practices, i.e., wearing safety glasses and proper footwear.
- Being certain no previously prepared notes, tools, or equipment are used.
- Providing additional repair orders.
- Making sure the rules are followed.
- Checking to see whether or not each fault set is found and fixed.

During the Competition, no instructor is ever allowed to enter the contest area or to communicate with a competitor in any way. Doing so may result in immediate disqualification for the instructor's team.

The Judges must also be sure that the Parts Counter has all the parts necessary to correct the faults that have been set.

A Judge may issue a warning by placing a red sign on the windshield if a team member or instructor fails to follow contest rules or ignores a Judge's instructions. A second warning to the same team results in an automatic disqualification.

## STALL MONITORS

- Stall Monitors are vehicle manufacturers' technical experts in the Competition.
- Their primary function is to set the vehicle faults and monitor contestant activity.
- There is one Stall Monitor assigned for each vehicle.
- Stall Monitors are not permitted to answer contestants' questions. However, they will intercede if there is an unsafe action taking place.
- Stall Monitors are to inform a Judge if a team begins working on a problem that is not part of the contest.

## DISQUALIFICATION

A Team may be disqualified for any of the following:

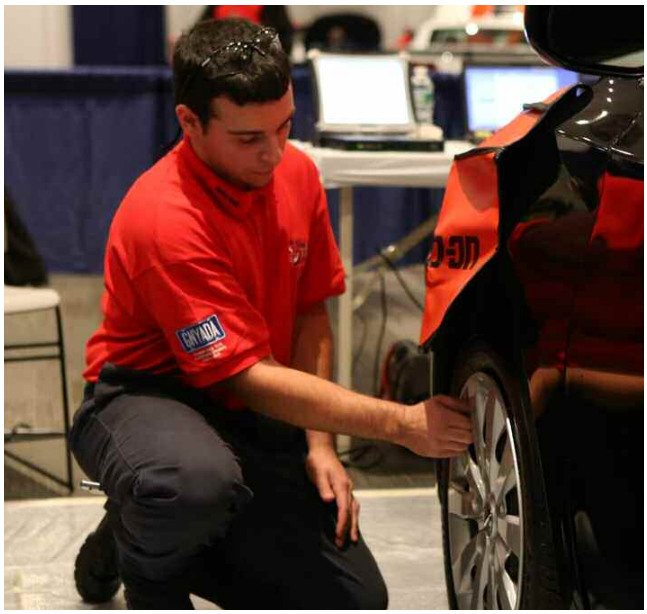
- Failure to follow Competition rules and/or Stall Monitor instructions.
- Use of a cell phone, text messaging, or any communications device during the Competition.
- Violating shop safety practices.
- Participation by an ineligible team member.
- Display of poor conduct by an instructor or team member.
- Communicating with anyone other than a Team Member, Judge, or Stall Monitor during the Competition.
- Use of written materials not supplied by contest Committee.
- Accessing technical information from a laptop computer that was not approved by the Competition Planning Committee.

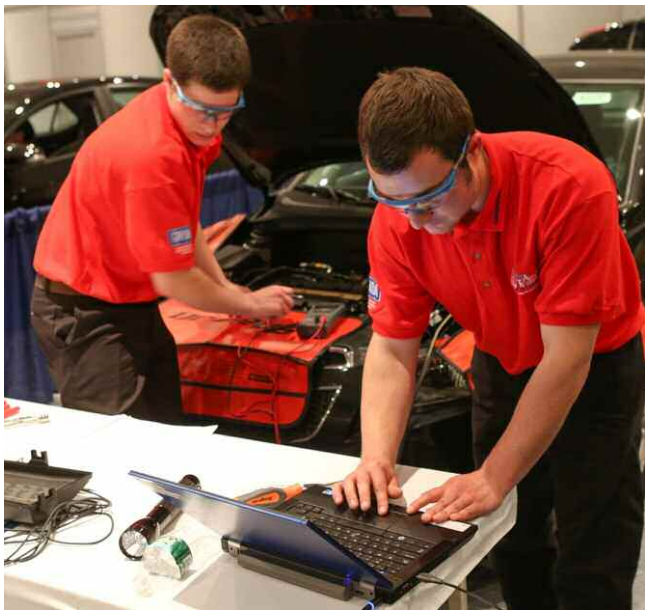
## PRIZES

Every student entering the *2015 National Automotive Technology Competition* will receive *Snap-on* tools, post-secondary scholarship offers, and an Official Competition racing shirt and hat. In addition, schools may receive donated vehicles and engines delivered to their automotive shops.

The Top 10 Honor Roll Teams earn additional scholarship offers, team and teacher awards from: *Automotive Training Center, Lincoln Technical Institute, New England Institute of Technology, Ohio Technical College, Universal Technical Institute, University of Northwestern Ohio*.

**NOTE: ALL RULES ARE INTENDED TO PROVIDE A SAFE, FAIR, MEANINGFUL COMPETITION. THE COMPETITION PLANNING COMMITTEE OR ITS DESIGNEES SHALL HAVE FINAL SAY IN RESOLUTION OF ANY CONCERNS THAT MAY ARISE IN THE COURSE OF THE COMPETITION.**





## PARTICIPATING MANUFACTURERS

## INDUSTRY SPONSORS

Automotive Service Excellence (ASE)
Automotive Training Center
Automotive Youth Educational Systems (AYES)
Bronx Community College
Chrysler CAP
Columbia Greene Community College
ConsuLab Training Aids
Coordinating Committee for Automotive Repair (CCAR)
Dunn Tire, LLC
Electude USA LLC
Ferris State University
Follow-A-Dream
General Motors – ASEP
Goodheart-Willcox Publisher
Homestyle Caterers & Food Service
Hunter Engineering Company
Lincoln Technical Institute
Mechanix Wear
Megatech Corporation
Miller Welders
Motor Age Training
National Automotive Technician Education Foundation (NATEF)
New England Institute of Technology
New York Automotive & Diesel Institute
New York City Department of Education
Ohio Technical College and the PowerSport Institute
Permatex
Rockland Community College
Snap-on Tools
S/P2
Suffolk County Community College
Tennaco, Inc.
Test Products International
Think Fast, Inc.
Toyota T-TEN Program
United Federation of Teachers – UFT
United States Department of Labor
U.S. Environmental Protection Agency
Universal Technical Institute
University of Northwestern Ohio
Westchester Community College
Zurich, NA

# SCHEDULE OF EVENTS

## DAY 1 MONDAY, APRIL 6, 2015

**Arrive at Sheraton New York Times Square Hotel**
52nd Street & 7th Avenue

5:30 pm **Shuttle Buses Depart from Sheraton New York Times Square Hotel**

6:30-8 pm **Welcome to New York Reception**
Jacob K. Javits Convention Center
Special Events Hall, Level 1

*Students will receive Official Competition racing shirts, hats, and other gifts compliments of GNYADA and competition sponsors. Students get to meet each other and have some fun.*

*Teachers will be briefed on what to expect at the Competition.*
*Dress casual – students often wear school or sponsor sweaters or jackets.*

8-10 pm **Attendees can visit the New York International Auto Show**

10 pm **Shuttle Buses Depart from the Javits Center to return to Sheraton New York Times Square Hotel**

## DAY 2 TUESDAY, APRIL 7, 2015

6:30 am **Shuttle Buses depart from Sheraton New York Times Square Hotel**
Teams should wear Official Competition hats and shirts received at the Welcome Reception.

7:15–8:45 am **Registration and Hot Breakfast Buffet**

9 am-12 pm **National Automotive Technology Competition**
**Day 1 – Part 1 – Workstation Challenge**

2 pm **Guided Bus Tour of New York City for National Teams and their Guests**
*Sponsored By:* New England Institute of Technology
*Registration Required*

**At end of tour, buses return to the Sheraton New York Times Square Hotel.**

# SCHEDULE OF EVENTS

## DAY 2 TUESDAY, APRIL 7, 2015 *(continued)*

**National Automotive Technology Competition "Night-on-the-Town."**
*Enjoy the bright lights of NYC at night. NYC has thousands of restaurants, museums, theaters, and more. Get together with a group and explore!*

## DAY 3 WEDNESDAY, APRIL 8, 2015

6:30 am **Shuttle Buses depart from Sheraton New York Times Square Hotel**
Teams should wear Official Competition Hats and Shirts.

7:15–8:30 am **Registration and Hot Breakfast Buffet**

| | |
|---|---|
| *Sponsored By:* | Universal Technical Institute |
| *Welcome:* | Jerry Ellner<br>National Director of High School Development |
| *Speaker:* | Ricky Craven<br>NASCAR Driver, Three Series Champion |

8:45 am **Students are permitted into the Competition area to set up at vehicles.**

9 am **National Automotive Technology Competition**
**Day 2 – Part 2 – Hands-On Portion**

1 pm **National Awards Banquet**
Jacob K. Javits Convention Center
Special Events Hall, Level 1

# GREATER NEW YORK AUTOMOBILE DEALERS ASSOCIATION
## AUTOMOTIVE TECHNOLOGY COMPETITION

STALL NO. ____

**Association:** City Dealers Assn
Technician Name: John K. Jones
Technician Name: Ramon Diaz

Vehicle Make: Mitsubishi
Model: Lancer Evolution
Year: 2008

| | | Parts Used |
|---|---|---|
| Customer Complaint | Rear left turn signal does not flash. | Number on bulb. |
| Cause Of Failure | Rear left turn signal bulb is defective. | |
| Correction | Replace bulb. | |
| Reference info | Repair manual, Vol. 2, page 65-3 | |
| Customer Complaint | | |
| Cause Of Failure | | |
| Correction | | |
| Reference info | | |
| Customer Complaint | | |
| Cause Of Failure | | |
| Correction | | |
| Reference info | | |
| Customer Complaint | | |
| Cause Of Failure | | |
| Correction | | |
| Reference info | | |

National Automotive Technology Competition
at the NY International Auto Show

# NATIONAL AUTOMOTIVE TECHNOLOGY COMPETITION
## APRIL 7 & 8, 2015

**New York International Auto Show / Jacob Javits Convention Center**

For more information, please visit our website:
NationalAutoTech.com

or contact:

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