

MOBILE ELECTRONICS INSTALLATION

PURPOSE

To evaluate each contestant's preparation for employment and to recognize outstanding students for excellence and professionalism in the field of mobile electronics installation.

First, refer to General Regulations, Page 9.

CLOTHING REQUIREMENT

For men: Official SkillsUSA white polo shirt with black dress slacks, black socks and black leather shoes. For women: Official SkillsUSA white polo shirt with black dress slacks or skirt, black socks or black or clear seamless hose and black leather shoes. All: Safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.) To purchase the polo shirt, contact Midwest Trophy Manufacturing Co. Inc. by calling 1-800-324-5996 or order online at www.mtmrecognition.com/skillsusa/.

ELIGIBILITY

Open to active SkillsUSA members enrolled in technology programs that include mobile electronics installations.

EQUIPMENT AND MATERIALS

1. Supplied by the technical committee:
 - a. All necessary tools, materials, schematics and equipment required for the contest
2. Supplied by the contestant:
 - a. Pencils
 - b. Safety glasses
 - a. Calculator
 - b. One-page, typewritten résumé

SCOPE OF CONTEST

1. The scope of the contest will be consistent with the industry standards outlined in the competencies listed for the Mobile Electronics Certified Professional Basic Installation Technician exam produced by the Consumer Electronics Association (CEA). See www.mecp.com. Following are the major skills areas:

Section 1 - BASIC AND ADVANCED ELECTRICAL

- a. *Section 1 - Electrical Laws And Formulas For The Mobile Electronics Environment*
- b. *Section 2 - Electrical Components*
- c. *Section 3 - Basic Electrical Troubleshooting*
- d. *Section 4 - Filters*
- e. *Section 5 - Relays, Batteries And Cable*
- f. *Section 6 - Semiconductors*
- g. *Section 7 - Automotive, Electrical and Charging Systems*
- h. *Section 8 - Troubleshooting*

Section 2 - MOBILE ELECTRONICS INSTALLATION KNOWLEDGE & TECHNIQUES

Section 1 - Basic Installation Practices

Section 2 - Noise Troubleshooting

Section 3 -Battery Troubleshooting
Section 4 -Meters And Test Equipment
Section 5 General Installation & Equipment
Section 6 Shop Safety
Section 7 Troubleshooting Guide

Section 3 - INTRODUCTION TO AUTOSOUND, SECURITY, WIRELESS & NAVIGATION

Section 1 Introduction To Audio - Autosound Basics
Section 2 Introduction To Security
Section 3 Wireless Communications: The Basics Of Installation
Section 4 Navigation Basics
Section 5 Satellite Radio

The current MeCP Basic Mobile Electronics Installer competency standards are available on the Web at www.mecp.com.

2. Contestants will demonstrate their ability to perform jobs or skills selected from the Competencies listed below as determined by the SkillsUSA Championships technical committee.
3. Installing, Diagnosing and Servicing: This section of the competition consists of several test-station activities. Contestants must successfully complete assigned tasks at each station. The tasks are designed to provide a variety of challenges based on the MECPrecommended practices. Approximately, 45 minutes are allowed at each station.

MAJOR CONTEST AREAS

1. Charging and Electrical System Measurements: Contains one task associated with using standard test instruments to establish a State of Health report for a given vehicle.
2. Removing and Replacing Headunits: Contains one task related to removing an existing headunit and replacing it with an OEM ungrade headunit.
3. Installing Audio Amplifiers: Contains one task related to physically adding an audio amplifier to an existing mobile audio installation and configuring it for safe usage by the customer.
4. Using Relays: Contains one task requiring the contestant to design and configure a relay based circuit to perform the requested mobile installation-related to upgrading consumer electronic systems in a vehicle.
5. Locating and Diagnosing Open and Short Circuits: Contains one task related to locating and repairing an open circuit and/or a short circuit condition and will be judged on ability to locate, identify and repair all malfunctions; and adherence to safety and ESD procedures.
6. Electronics Installer Theory Exam: Contestants will take an examination covering their knowledge of basic and advanced electrical theory, installation knowledge and techniques, and mobile consumer electronics systems. Questions cover basic 12-volt circuits and devices, mobile consumer electronics systems and sub systems (sound, security, wireless and navigation), and basic mobile electronics diagnostic and troubleshooting questions. The exam consists of multiple choice questions and lasts up to two hours.
7. Customer Service: Contestants will respond to questions related to providing professional customer service techniques.
8. Personal Interview: A business/industry preliminary interview will be conducted with an industry professional focusing on the customer service culture.
9. Winners will be determined on the basis of total scores, including diagnosis and troubleshooting, soldering, assembly, customer service and personal interview interaction, and theory exam.
10. Items Evaluated: Relative point values for each item below will be determined by the technical committee.
 - a. Installing, Diagnosing and Service Scoring
 1. Read and understand the manufacturer's training literature about the device.
 2. Use test equipment to make specified measurements.
 3. Follow recommended manufacturer's sequence of installation procedures and troubleshooting practices.
 4. Identify the scope of the task or problem.
 5. Identify any defective component.
 - b. Practical Skills
 1. Soldering and desoldering techniques

2. Workmanship and assembly techniques
 3. Final operation of installations tasks
 4. Ability to locate, identify and/or repair malfunctions
 5. Safety and ESD procedures
- c. Customer Service
 - d. Personal Interview
 - e. Written Exam