



presents the

29th Annual

*Emergency & Municipal Apparatus
Maintenance Symposium*

September 20 thru 24, 2021
at the

OHIO FIRE ACADEMY

The Ohio Association of Emergency Vehicle Technicians will present it's 29th Annual Emergency & Municipal Apparatus Maintenance Symposium September 20 thru 24, 2021.

Classes will be conducted at the Ohio Fire Academy 8895 E. Main St. Reynoldsburg, Ohio.

SCHEDULE OF EVENTS

- Sept. 20-Monday **REGISTRATION AND OPENING REMARKS**
Registration 7:00 to 8:30 and Opening Remarks at 8:30

- Sept. 20 thru 24 **PRESENTATION OF CLASSES**
Monday - Friday Class Instruction starts at 9 AM
Monday - Thursday, class ends at 4 PM. Friday, class ends at noon.

- Sept. 22-Wednesday **OAEVT ANNUAL MEETING**
Held at the Ohio Fire Academy immediately following classes at 4:15 PM.

- Sept. 23-Thursday **EMERGENCY VEHICLE TECHNICIAN CERTIFICATION TESTING**
Sept. 24-Friday **Ohio Fire Academy. Time: 4:00 PM Thursday, 8:00 AM Friday.**
Applicants must have preregistered and paid the required fees to the EVT Certification Commission prior to testing. Registration deadline, September 5, 2021. EVT Cert. Comm, P.O. Box 894, Dundee, IL 60118, 847-426-4075
Testing is not required to attend the symposium.

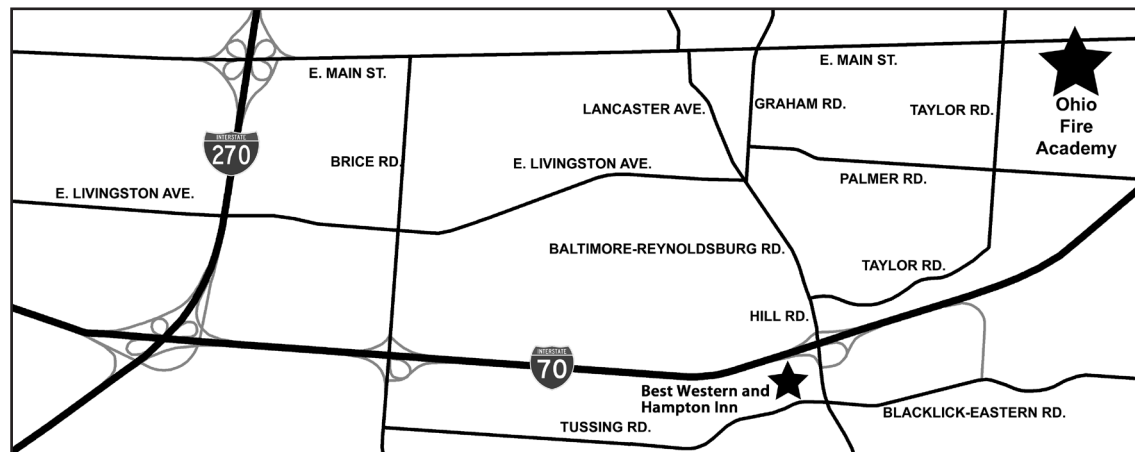
LODGING

Students are responsible for their own lodging. However, a group of rooms have been blocked at the Best Western Executive Suites 1899 Winderly Lane, Pickerington, OH 43147. Phone 614-860-9804. Confirmation # 2021 OAEVT, with a special rate of \$79.00 per night for all style rooms, which includes a full breakfast bar. Ohio Fire Academy also has hotel style rooms available 1-888-726-7731

Hampton Inn – East 1890 Winderly Lane, Pickerington, OH, OAEVT Group pricing, 614-864-8383

Comfort Inn – 1800 Hill Rd N Winderly Lane, Pickerington, OH, OAEVT Group pricing, 614-575-9900
Fairfield Inn & Suites – 2826 Taylor Rd Ext Reynoldsburg, 614-864-4555

Holiday Inn – 2806 Taylor Rd Ext Reynoldsburg, 614-861-8888



ATTENDEE REGISTRATION FORM

2021 OHIO ASSOCIATION OF EMERGENCY VEHICLE TECHNICIANS EMERGENCY & MUNICIPAL APPARATUS MAINTENANCE SYMPOSIUM

NOTE: PLEASE PRINT or TYPE all information. This form must be filled out completely or it will be returned to you. DEADLINE for registration is September 10, 2021. All late registrations after 9-10-21 will be required to pay a fee of \$30 per day/class or \$150 total for the week. Full registration refund prior to 8-20-21. 50% refund on or before 9-3-21. No refund after 9-3-21.

Name _____

Preferred Address _____

City _____ State _____ Zip _____

Cell Phone () _____ Work Phone () _____

E-mail _____

Fire Dept./ Agency / Company _____

Address _____ Zip _____

REGISTRATION

Carefully fill out the registration form and send it along with full tuition or payment verification: (for example purchase order number from your employer). Electronic payment (with processing fee) available online at oaevt.org/training-symposium.

Scan and email completed registration to pguhde@aol.com or by mail,

**Ohio Association of Emergency Vehicle Technicians, Inc.
P.O. Box 303 • Avon, Ohio 44011**

Use class selection number — PLEASE indicate second choice!

	Monday	Tuesday	Wednesday	Thursday	Friday
First Choice					
Second Choice					

Form may be photocopied as needed.

TUITION INFORMATION

REGISTRATION CLOSSES SEPTEMBER 10, 2021

Late registration rate will be required. \$30 per day/class.

FULL PACKAGE

Includes the 5 day symposium and daily lunch:

\$495.00 _____

Daily Rate - Any Class..... \$180.00 _____

TOTAL ENCLOSED _____

Late Registration after 9-10-21 Full Week..... \$150.00 _____

Per Day/Class..... \$30.00 _____

TOTAL INCLUDING LATE REGISTRATION _____

Send registration form along with full tuition or payment verification:

(for example, purchase order number from your employer)

Electronic payment (with processing fee) available online at oaevt.org/training-symposium.

Registration: Monday 7:00 AM to 8:30 AM Welcome & Opening Remarks: 8:30 AM

Class Times: Classes are Monday thru Thursday from 9 AM to 4 PM, with one hour for lunch and two 15 minute breaks. Friday 9 AM - 12 PM

Lunch will be in the Ohio Fire Academy cafeteria. Meal tickets will be issued to each student. Some classes are limited in size due to hands-on training. Register early, classes will be filled on a first come, first served basis.

Class registrations must be postmarked by September 10, 2021. Electronic or scanned registrations are encouraged; send to pguhde@aol.com.

Certificates of attendance will be awarded upon payment of all fees and verification of attendance.

Students are responsible for providing suitable personal protective equipment, i.e., eye protection, hearing protection, as may be needed for the hands-on portion of any class.

O.A.E.V.T. reserves the right to cancel or substitute classes due to conditions beyond our control. Reasonable efforts have been made to confirm the classes and instructors scheduled.

Please call Pat Guhde (440) 476-8707 or E-mail at pguhde@AOL.com

Class 050 Apparatus crash review:**Not if but when your organization is involved in a collision****3 Hrs.**

This course will provide insight and education for the audience to learn from and think about the four critical ambulance crashes the City of Lebanon Fire Division has been involved in over the past five years. Following a case study review of each crash we will discuss what to expect, what the standards are and how to rest knowing that your apparatus is held to a standard that can withstand the worst-case scenario. The insight into what occurs beyond the legal issues of ambulance crashes but how it affects the people riding in them. An overview of the records, and standards we are held to in these scenarios.

*Instructor: Ron Whitaker, Lebanon Fire Division***Class 200 Waterous Pump Repair & Maintenance (Tues - Wed) 2 Day Class****12 Hrs.**

This two-day class covers the care, operation and maintenance of the Waterous mid-ship pump, using an actual training pump, the gearbox, impeller assembly and all valves normally supplied with the pump will be removed, explained, examined and re-assembled. Christian will discuss the care and maintenance of the CAFS product time permitting.

*Instructor: Christian Wandmacher, Waterous Corporation***Class 100 EVT Objective Review for F-3 Fire Pumps and Accessories****6 Hrs.**

Class prepares the technician to understand the general design, performance and testing standards for pumper apparatus, per the NFPA 1901 & 1911. The technician will understand the hydraulic principles of water movement in pumping operations, learn the terms that relate to the basic hydraulic principles used in the fire service, understand the mechanical principles of pumps, pump controls and accessories during pumping operations, understanding the procedures necessary to overhaul a fire pump and the procedures of performing a pump service test. (Textbooks Recommended: NFPA 1901, NFPA 1911, NFPA 1915, Standards for Fire Apparatus Preventative Maintenance Program, IFSTA Pumping Apparatus Driver/Handbook, second edition. Note; Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 or 9-24-21

*Instructor: Christian Wandmacher, Waterous Corporation***Class 101 Spartan Air Conditioning Maintenance and Repair – Monday****6 Hrs.****Class 117 Spartan Air Conditioning Maintenance and Repair – Wednesday****6 Hrs.**

This class taught by John should say it all, but he will go over in the classroom basics and theory first and then move to the demo to do some hands on. Class will include maintenance, troubleshooting and repair of the air conditioning systems in fire apparatus.

*Instructor: John Merrifield, Spartan Chassis***Class 102 EVT Objective Review E-0 & F – 1 Maintenance, Inspection, and Testing of Ambulances & Fire Trucks****6 Hrs.**

This class covers the Maintenance, Inspection, and Testing of Ambulances as covered in KKK-A-A822 Federal Specification for the Star of Life Ambulance, Meritor Preventive Maintenance and Lubrication, and NFPA 1911, Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Fire Apparatus. Note; Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 & 9-24-21

*Instructor: Al Conkle, OAEVT Executive Director***Class 103 Fire Pump Familiarization – Monday****6 Hrs.****Class 129 Fire Pump Familiarization – Thursday****6 Hrs.**

This class is designed for the technician to familiarize and understand Fire Pump operations and all the components of Fire Pump operation as used by the Firefighter. The class will enable practical evolutions to enable the technician to fully understand the common practices used at fire scenes and theory to back it up which will help identify problems or find specific problems or repairs when faced with them. Perfect class for the Technician that wants to know why all those chrome gauges, handles and labels. This one day class repeated twice 103 on Monday and 129 on Thursday

*Instructor: Dave Woodward, Retired Violet Township Fire***Class 104 Electrical Troubleshooting E - 100****6 Hrs.**

This class is designed to instruct technicians on the repair and maintenance of Basic Electrical Systems. The class will start at the basics with power and ground and work up from there. Class includes lecture, demonstration, and hands-on instruction. Students must have this class to be eligible for E-200 or -E300

*Instructor: Wade Nichols, Spartan Chassis***Class 105 EVT Objective Review E-1 Design & Performance Standards of Ambulances****6 Hrs.**

This class reviews the objectives for the general design and performance standards for ambulances as described in NFPA 1917, Standard for Automotive Ambulances, and general principles of preventive maintenance and servicing. . Note; Student Must be Pre-Registered with the EVTCC to take test on 9-26-19 and/or 9-27-19

*Instructor: Kenny Stevens, EVTS – Emergency Vehicle Technical Support Inc.***Class 106 Hydraulic Principles and Theory – Smart Power Generators – Monday****6 Hrs.****Class 121 Hydraulic Principles and Theory – Smart Power Generators – Wednesday****6 Hrs.**

This class taught a senior trainer and manager in the field of hydraulic generators. Class will cover the hydraulic principles and theories and then get into the care and maintenance and proper installation of the smart power products. The instructor's will also offer some common troubleshooting and repair procedures.

*Instructor: Jordan Rautiola & Scott Jones, Smart Power***Class 107 GM Brakes and ABS Systems****6 Hrs.**

This instructor-led training seminar focuses on braking system diagnosis, and covers components, operation, and proper service practices. This course highlights real world case studies to address brake noise, pulsation, pad wear, fluid leaks, and concerns with power assist systems. Enhanced braking system designs and features by various manufacturers will also be covered.

*Instructor: William Carpenter, Jerry Temple, & James Hoopes, General Motors***Class 108 Cummins Engines ISB, ISC, ISL Maintenance and common failures – Monday****6 Hrs.****Class 123 Cummins Engines ISB, ISC, ISL Maintenance and common failures – Wednesday****6 Hrs.**

This class will cover the Cummins product line from years back to current production to include the 5.9, 8.3, and the big block family. Live engine troubleshooting and the regeneration aftertreatment process will be discussed This technical trainer comes from Cummins Bridgeway Columbus branch and needless to say he has seen a bunch. Don't miss this. Repeated, Monday and Wednesday

*Instructor: Ron Heitman, Michael Baldwin & Seth Romine Cummins Bridgeway***Class 109 Disc & Drum Air Brake Maintenance and Repair****6 Hrs.**

This class will cover air brake theory and proper set-up to enable the technician to understand the air brake system and properly troubleshoot and repair them. John will focus on the Air Drum and Air Disc systems and will have hands on demonstration stands for students to work on.

*Instructor: John Merrifield, Spartan Chassis***Class 110 EVT Objective Review F – 2 Design and Performance Standards of Fire Apparatus****6 Hrs.**

This class prepares the technician to understand the EVTCC F – 2. This class covers design and performance standards and accepted practices used for the Standard for the Inspection, Maintenance, Testing, and Retirement of In-Service Automotive Fire Apparatus. Textbook Recommended NFPA 1901, 2009 & IFSTA Pumping Apparatus / Driver/ Operator Handbook Note; Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 & 9-24-21

Instructor: Alan Conkle, OAEVT Executive Director

- Class 111 Sutphen Custom Pumper Maintenance** **6 Hrs.**
 This class will cover the recommended maintenance practices specifically for the Sutphen product. Class will consist of classroom and an actual truck for hands-on.
Instructor: Janelle Kizer, Tim Roush, Brian Teach, & Jeremiah Johnson, Sutphen Corporation
- Class 112 Electrical Troubleshooting by Spartan E-200** **6 Hrs.**
 This class is designed to instruct technicians on the repair and maintenance of Electrical Systems. The class will continue to test your basic knowledge with power and ground and work up to become an Intermediate electrical troubleshooter. Class includes lecture, demonstration, and hands- on instruction. Student must have had or shall take E-100 prior to being in this class
Instructor: Wade Nichols, Spartan Chassis
- Class 113 EVT Objective Electrical E-3 Ambulance HVAC** **6 Hrs.**
 This class will review the objectives that covers basic design, requirements and components of these systems.
 Note: Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 and/or 9-24-21
Instructor: Kenny Stevens, EVTS – Emergency Vehicle Technical Support Inc.
- Class 114 Advance Electrical / Multiplexing By Weldon** **6 Hrs.**
 This class is designed to instruct technicians on the repair and maintenance of V-Mux Electrical Systems. The class will start at the basics with power and ground and work up from there. Class includes lecture, demonstration, and hands- on instruction.
Instructor: Jeff Dilgren, & Markus Kelley, Weldon – IDEX Fire Group
- Class 115 GM A/C & Damper Door Diagnostics** **6 Hrs.**
 This seminar will provide technicians with the diagnostic techniques and strategies required to diagnose non-refrigerant related issues with the HVAC electronic controls that impact electronically regulated compressor operation and the air delivery system. Specific components and systems covered include: HVAC control inputs, condenser and blower motor fan controls and operation, manual, electronic and automatic temperature control and electronic mode door actuators and their control of air delivery and airflow in single and multiple zone adjustable systems. Setup procedures for all related modules will be reviewed. This course will include simulated diagnostic exercises to apply the principles learned
Instructor: William Carpenter, Jerry Temple, & James Hoopes, General Motors
- Class 116 International Engine Maintenance and After Treatment – Tuesday** **6 Hrs.**
- Class 131 International Engine Maintenance and After Treatment – Thursday** **6 Hrs.**
 This class will cover the Diamond Logic and ISIS systems used by International Truck to diagnose and repair the engine and chassis systems. Joel will present material for the DT and V8 Engine product line as well as maintenance tips and tricks for the exhaust after treatment systems. Class Repeated Tuesday & Thursday.
Instructor: Joel Crist & Tim White, International Truck – Rush International
- Class 118 EVT Objective Review for F-3 Fire Pumps and Accessories** **6 Hrs.**
 Class prepares the technician to understand the general design, performance and testing standards for pumper apparatus, per the NFPA 1901 & 1911. The technician will understand the hydraulic principles of water movement in pumping operations, learn the terms that relate to the basic hydraulic principles used in the fire service, understand the mechanical principles of pumps, pump controls and accessories during pumping operations, understanding the procedures necessary to overhaul a fire pump and the procedures of performing a pump service test. (Textbooks Recommended: NFPA 1901, NFPA 1911, NFPA 1915, Standards for Fire Apparatus Preventative Maintenance Program, IFSTA Pumping Apparatus Driver/Handbook, second edition. Note; Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 & 9-24-21
Instructor: Al Conkle, OAEVT Executive Director
- Class 400 Sutphen Aerial Maintenance Multiplex Systems (Wednesday – Thursday)** **6 Hrs.**
 This class will cover the recommended maintenance practices specifically for the Sutphen Aerial product to include the multiplex portion of the outrigger interlock systems. Class will consist of classroom and an actual truck for hands-on. This is a two day class
Instructor: Janelle Kizer, Tim Roush, Brian Teach, & Jeremiah Johnson, Sutphen Corporation
- Class 119 Electrical Troubleshooting E-300** **6 Hrs.**
 This day class is designed to instruct the technician on the repairs and maintenance of Fire Apparatus Electrical Equipment. Class will not review E-100 or E-200 rather build off them, Student must have had or shall take E-100 and E-200 prior to being in this class. Class includes lecture, demonstration, and hands-on instruction. The Weldon Multiplex system will be included in the segment.
Instructor: Wade Nichols, Spartan Chassis
- Class 120 EVT Objective Review Class, E- 2 Ambulance Electrical Systems** **6 Hrs.**
 This class reviews the objectives for the technician to understand The EVTCC E-2 exam which covers the basic design and performance requirements of ambulance electrical systems, components of electrical systems, and preventive maintenance and troubleshooting activities. KKK-A-1822E Federal Spec for the Star-of Life Ambulance, Heavy Duty Manual by Interstate Battery, Auto Electricity & Electronic Technology, Any Heavy Duty Truck Electrical Manual & Fire Dept. Pumping Apparatus Maintenance.
 Note: Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 & 9-24-21
Instructor: Kenny Stevens, EVTS – Emergency Vehicle Technical Support Inc.
- Class 122 GM Diesel Performance 1 & 2** **6 Hrs.**
 This course covers diesel engine performance, including an introduction to diesel engines, models, features, vehicle applications, operational components, systems, and Environmental Protection Agency regulation. Upon completing this course, participants will be able to describe the diesel engine characteristics, identify different types of diesel engines, and identify Environmental Protection Agency regulations for diesel engines. This course covers the diesel engine induction system, including induction system components and exhaust gas recirculation. It also covers the purpose and types of turbochargers. In addition, this course describes diesel engine induction system inputs, after treatment inputs, and diesel engine induction system controls. Upon completing this course, participants will be able to describe the diesel engine induction system, describe diesel engine turbochargers, identify diesel engine induction system inputs, and identify diesel engine induction system controls. .
Instructor: William Carpenter, Jerry Temple, & James Hoopes, General Motors
- Class 124 EVT Objective Review for F-3 Fire Pumps and Accessories** **6 Hrs.**
 Class prepares the technician to understand the general design, performance and testing standards for pumper apparatus, per the NFPA 1901 & 1911. The technician will understand the hydraulic principles of water movement in pumping operations, learn the terms that relate to the basic hydraulic principles used in the fire service, understand the mechanical principles of pumps, pump controls and accessories during pumping operations, understanding the procedures necessary to overhaul a fire pump and the procedures of performing a pump service test. (Textbooks Recommended: NFPA 1901, NFPA 1911, NFPA 1915, Standards for Fire Apparatus Preventative Maintenance Program, IFSTA Pumping Apparatus Driver/Handbook, second edition. Note; Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 or 9-24-21
Instructor: Christian Wandmacher , Waterous Corporation
- Class 125 EVT Objective Review E-0 & F – 1 Maintenance, Inspection, and Testing of Ambulances & Fire Trucks** **6 Hrs.**
 This class reviews the objectives the Maintenance, Inspection, and Testing of Ambulances and F-1 Fire Trucks as covered in KKK-A-A822 Federal Specification for the Star of Life Ambulance, Meritor Preventive Maintenance and Lubrication, and NFPA 1911, Standard for the Inspection, Maintenance, Testing and Retirement of In-Service Fire Apparatus. Note; Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 and/or 9-24-21
Instructor: John Merrifield, Spartan Chassis

Class 126 Pump Operations and Equipment overview for the EVT**6 Hrs.**

This course is designed to introduce the emergency vehicle technician with the overview of what the firefighter paramedic expects and how they abuse their apparatus. This class will provide you with an overview and education to topics such as the actual width of hose for hose trays, overview and pump operations hands on training to provide firsthand experience of what is needed to fine tune water flow from the truck to the end of the nozzle and a brief overview of the tools carried and when we deploy them. We will also discuss the importance of effective communication between the EVT and their firefighters.

Instructor: Ron Whitaker, Lebanon Fire Division

Class 127 Data Link Diagnostics, Code Reading via gauges, DVM**6 Hrs.**

This class is designed to instruct the participant on how to extract information from the fire truck electronics used the above methods. Wade knows his way around the truck and will help you use the trucks technology to help diagnose issues that you have. Bring your electronic tools and he will also be able to show you how to use them.

Instructor: Wade Nichols, Spartan Chassis

Class 128 EVT Objective Review E-4 Ambulance Cab, Chassis, & Power Train**6 Hrs.**

This class reviews the objectives for basic design, requirements and components of these system sand which are unique to Ambulances, Cab Chassis and Powertrain

Note: Student Must be Pre-Registered with the EVTCC to take test on 9-23-21 & 9-24-21

Instructor: Kenny Stevens, EVTS – Emergency Vehicle Technical Support Inc.

Class 130 GM Charging and Starting Systems**6 Hrs.**

This seminar covers battery, starting, and charging system component operation, diagnosis and testing, and correct service practices. The discussion on battery operation will include details on flooded and Absorbent Glass Mat, (AGM) types of batteries with emphasis on correct diagnosis and service. Starting topics will include processor controlled cranking systems, stop / start technology, and current diagnostic procedures. Participants will discuss computer-controlled charging systems including Regulated Voltage Controls (RVC), electrical power management, and advanced diagnostic procedures.

Instructor: William Carpenter, Jerry Temple, & James Hoopes, General Motors

OAEVT MAINTENANCE SYMPOSIUM SCHEDULE • SEPTEMBER 20 THROUGH 24

MONDAY 9-20	TUESDAY 9-21	WEDNESDAY 9-22	THURSDAY 9-23	FRIDAY 9-24
EVT Objective Review F-3 Fire Pump 100	Fire Pump Maint & Repairs by Waterour 200 <i>Day 1 of 2</i>	Fire Pump Maint & Repairs by Waterous 200 <i>Day 2 of 2</i>	EVT Objective Review F-3 Fire Pump 124	Apparatus Crash Review Not If – When 050
Air Conditioning Maint. & Repair by Spartan 101	Disc & Drum Brakes - Maint, & Troubleshooting 109	Air Conditioning Maint. & Repair by Spartan 117	EVT Objective Review F-1 & E-0 Maint & Inspection 125	
EVT Objective Review F-1 & E-0 Maint & Inspection 102	EVT Objective Review F- 2 Design and Performance 110	EVT Objective Review F-3 Fire Pump 118	Pump & Equipment Review for the EVT 126	
Fire Pump Familiarization 103	Sutphen Custom Pumper Chassis Maint. 111	Sutphen Aerial Maint., Repairs & Troubleshooting 400 <i>Day 1 of 2</i>	Sutphen Aerial Maint., Repairs & Troubleshooting 400 <i>Day 2 of 2</i>	
E - 100 Electrical By Spartan 104	E - 200 Electrical By Spartan 112	E - 300 Electrical By Spartan 119	Data Link Diagnostics Electrical Accessory 127	
EVT Objective Review E-1 Design & Performance 105	EVT Objective Review E-3 HVAC 113	EVT Objective Review E-2 Ambulance Elec. 120	EVT Objective Review E-4 Cab & Chassis 128	
Hydraulic Principles and Generators 106	Weldon Multiplex Design and Troubleshooting 114	Hydraulic Principles and Generators 121	Fire Pump Familiarization 129	
GM Brakes and ABS systems 107	GM A/C & Damper Door Diagnostics 115	GM Diesel Performance 1 & 2 122	GM Charging Systems & Adding Circuits 130	
Cummins ISB,ISC,ISL Maintenance 108	International Engine Maint. & after Treatment 116	Cummins ISB,ISC,ISL Maintenance 123	International Engine Maint. & after Treatment 131	
			EVT Testing OFA 4:00 PM	EVT Testing OFA 8:00 AM

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P.O. Box 303
Avon, Ohio 44011

FIRST CLASS MAIL
DATED MATERIAL

