FUEL, LUBRICANTS AND ENVIRONMENTAL COMMITTEE
(formerly known as Fuel and Lubricants Committee)

2023
1. The EPA Diesel Emissions Quantifier (DEQ)-Time for A New Approach
2. ALTRIOS – Advanced Locomotive Technology and Rail Infrastructure Optimization System, Exploring Pathways to Freight Rail Decarbonization
3. Evaluation of Emissions and Engine Wear With 100% Soy Methyl Ester Biodiesel on an EMD 567 Switcher

2022
1. Renewable Fuels Inter-Compatibility
2. Biomass-Based Fuels Long-Term Durability and Emissions Testing
3. GHG Emissions Reduction for North American Railroads

2021
1. Review in Trends in Railroad Diesel Fuel Properties Over the Past Decade or a Decade of Diesel Fuel
2. Renewable Diesel Fuel Effects on Exhaust Emissions from a Tier 3 GE ES44C4 Locomotive
3. Sustainable Fuel Constraints and the Necessity of Alternative Propulsion

2020
1. Locomotive Engine Fuel Economy Testing
2. Locomotive Engine Coolant-Best Practices
3. Performance Review of OEM Specifications for Traction Motor Support Bearings

2019
1. The Effects of a Hydrogenation-Derived Renewable Diesel (HDRD) Fuel Surrogate on Fuel Consumption and Emissions from a GE Tier 2 Locomotive
2. Used Oil Analysis – Is It Reliable? (2018 Railroad Used Oil Test Laboratory Evaluations)
3. Review of AAR M-963-84 All-Year Journal Box Lubricating Oil Specification
4. Engine Oils for Improved Fuel Economy and Oil Consumption to Railroad Services

2018
1. Diesel Fuel Heating Value Correction for Locomotive Fuel Consumption Calculations
2. SCR for Locomotive NOx Reduction
3. X-Ray CT Scanning of Diesel Locomotive Fuel Injectors

2017
1. One Size Fits All? Clarifying Standards for Locomotive Fueling Infrastructure –Storage Tank Overfill Protection
2. Statistical Evaluation of Lube Oil Analysis as a Potential Predictive Maintenance Tool
3. Failures Resulting from Misunderstanding Used Oil Data, Locomotives, and the Trouble with Trending

4. High Pressure Common Rail Engines in Locomotive Service: Symptoms, Causes and Cures for HPCR Deposits
5. Diesel Fuel Cleanliness- Application of the ISO 4406 Particulate Contamination Codes

2016

1. Defining LMOA Generation 7 Engine Oil Performance Category
2. Natural Gas for Rail Applications: LNG Fuel Quality Considerations
3. Effects of Fuel Composition on In-Service Engine Oil Properties

2015

1. Railroad's Fuel Options, Research and Literature Review
2. Transmix-Derived Fuel for Locomotives

2014

1. Fuel Filtration Considerations in the Changing Landscape of Engines and Fuels in Railroad Applications
2. Diesel Fuel Troubleshooting Guide
3. Locomotive Biodiesel Updates
4. Cold Soak Filter Plugging Test

2013

1. Railroad's Changing Fuel Supply: Diesel No. 2 (high-sulfur, low-sulfur, and ultra-low sulfur), Biodiesel, Fischer-Tropsch, and Blends
2. Locomotive Fuel & Lubricant Oil Filters 101
3. Generation 6 Locomotive Engine Oil Properties

2012

1. Diesel Engine Health Prediction with Integrated Lube Oil Analysis
2. Locomotive Durability Test Protocol for Alternate Fuels and Biodiesel

2011

1. Diesel Exhaust Fluid Properties & Technical Information
2. Locomotive Biodiesel Fuel Update

2010

1. The Clean Water Act and How it Affects Railroad Operations

2009

1. New Generation Oil Additive Technology for Engines Operating on Low & Ultra-Low Sulfur Diesel Fuel
2. The Clean Water Act and How It Affects Railroad Operations
3. Locomotive Testing of an Automatic Self-Cleaning Lube Oil Filter & Centrifuges

2008

1. Prevention of Fuel and Fuel Filter Headaches
2. Locomotive Idle and Start-Up Exhaust Emissions Testing
3. Operational Effects of Low Sulfur Diesel Fuel in Locomotives

2007

1. Automatic Self-Cleaning Lube Oil Filters and Centrifuges
2. Diesel Fuel 2007 and Beyond -What will be in Your Tanks?

2006

1. Fuel Additives-A Possible Method to Reduce Fuel Consumption in Railroad Diesel Locomotives

2005

1. Engine Oil 202 - Refined Base Oils and their Importance in Lubrication
2. Biodiesel - A Potential Fuel Source for Locomotives

2004

1. Discussion of the LMOA Fuels, Lubricants and Environmental Committee Pentane Insolubles Procedures Revision 4
2. Engine Oil 101 - Viscosity and Additives
3. Used Oil Analytical Result: What do they Mean, How to Interpret the Results and How do you Respond?

2003

1. Laboratory Results May Put Your Locomotive at Risk
2. Top of Rail Friction Modification Studies on the BNSF

2002

1. Improved Generation 5 Lubricant Provides Potential for Extended Lube Oil Filter Life
2. Corrosion Protection of Locomotive Cooling Systems

2001

1. On-Board Oil Management System
2. Evaluation of Locomotive Engine Oil Analytical Laboratories
3. Fuel Additives - Friend or Foe

2000

1. Biodegradability and its Relevance to Railroad Lubricants and Fluids
2. Engine Lubricating Oil Evaluation Field Test Procedure
3. Detecting Abnormal Wear of AC Traction Motor, Pinion End, Armature Bearings Through Lubricant Wear Debris Analysis
4. Further Development in Top-of-Rail Lubrication Testing

1999

1. Lube Oil Analysis-Achieving Quality Results
2. Effects of Engine Lubricants on Oil Filtration
3. Recycling and Re-refining of Used Lubricated Oils

1998

1. Safety and Chemical Cleaners
2. Development of a Low Emissions, Dual Fuel Locomotive
3. Fuel Oil Stability Update
4. Ten Questions on EPA's Locomotive Exhaust & Emission Regulations

1997

1. Ferrography-Used Oil Analysis Program
2. 2000 - A New Millennium for Locomotive Maintenance: EPA Exhaust Emissions Regulatory Impacts
3. Standardized Test Procedures - Current Developments
4. Industry Updates and New Developments

1996

1. Standardized Test Procedures-The Annual Subcommittee Update
2. Diesel Fuel Standards and their Applications to Railroad Fuel Quality Issues
3. A Look at Generation 5 Oil Performance and Future Oil Needs
4. LNG as a Railroad Fuel

1995

1. MSDS'S - What do they tell us?
2. Applying Satellite Communications Technology to On-Line Oil Analysis of Crankcase Diesel Engine Lubricants
3. Standardized Test Procedures - Past, Present & Future Developments
4. Locomotive Exhaust Emissions Regulations

1994

1. TBN-A Review of Currently Accepted Methods.
2. GE Multigrade Lubricating Oil Testing and Specification.
3. The Economic Impact of Low Sulfur Diesel Requirements.

1993

1. Used Oil Analysis of Multigrade Oils and Condemning Limits.
2. Insoluble Determination with the Advent of Multigrade Diesel Engine Oils
3. Bioremediation

1992

1. Environmental Issues Relating to Multigrade Railway Issues
2. Readily Biodegradable and Low Toxicity Railroad Track Lubricants
3. Support Bearing Oils
4. Recycling and Re-refining Locomotive Oils

1991

1. Infrared Spectroscopy as an Analytical Tool
2. Diesel Exhaust: Health Effects Research and Regulations
3. Traction Motor Gear Case Seals and Lube Containment (Oil Lubricant)
4. Partnership in Development

1990

1. The Responsibility of Railroads and Facility Managers in the Handling and Disposal of Hazardous Materials
2. Update on Diesel Fuel Regulations
3. Diesel Exhaust and Worker Exposure
4. Field Experiences with Multigrade Railroad Locomotive Oils.
5. Conrail Wheel/Rail Lubrication Update

1989

1. Field Test Data Follow-Up and Description of "Generation 5" Locomotive Crankcase Oil
2. Diesel Emissions: Regulations and Fuel Quality
3. Petroleum Storage Tank Regulations - Guest Speaker - George Kitchen, International Lube & Fuel Consultants

1988

1. Used Oil Analysis and Condemning Limits
2. Review of A.A.R. Procedure RP - 503, "Locomotive Diesel Fuel Additive Evaluation Procedure"
3. Update on Improved Oils - Multigrade
4. Wheel Flange Lubrication Update - Lubricants Being Used
5. Survey of Disposable Practices or Locomotive Engine Lube Oil and Lube Oil Filters
6. Speaker on Overview of Environmental Requirements for The Use of Petroleum Products in The Railroad Industry - Peter Conlon - AAR

1987

1. Common Fuel Additives and their Effectiveness
2. History of LMOA Lubricating Oil Classification System
3. Performance Requirements Needed by the Railroads for a New Generation Lube Oil
4. How do we Provide the Performance Needed for a New Generation Oil

1986

1. Extended Performance Lubricants Through Better Chemistry
2. Fuels and Lubricants Handling Hygiene
3. Fuels Availability and Price Outlook
4. Selection of Lubricants for Wheel Flange and Rail Lubricators

1985

1. Disposal of Lube Oil Drainings
2. Non-ASTM No. 2 - D Fuel
3. Oxidation Analysis
4. Wheel Flange and Rail Lubrication

1984

1. Locomotive Filters
2. Traction Motor Gear Lube Field Test

1983

1. Field Test Update of Multigrade Oils
2. Update of Alternate Fuel Testing
3. A Review of Locomotive Fuels

1982

1. Energy Conserving Lube Oils
2. Alternative Fuels Update
3. Availability of Medium and High Viscosity Index Railroad Oils
4. Journal Box Oil and Aniline Point.
5. Traction Motor Gear Lubricant Update
6. Traction Motor Gear Case Seals

1981

1. Effects of Using Alternate Fuels on Existing Diesel Engines
2. Update on Cold Weather Procedures for Fuels
3. New Techniques in Lube Oil Analysis
4. Traction Motor Gear Lubrication.
5. Multi-Viscosity Oils as an Energy Conservation

NEW TECHNOLOGIES COMMITTEE
(formerly known as the New Developments Committee)

2016
1. ECP Beyond Train-Handling – How ECP System Development Can Enhance Other Locomotive Technologies
2. New Developments in Diesel-Electric Passenger Locomotives
3. Diesel Emissions Control Technologies – A Post-Tier 4 Review

2015
1. Second life for DC locomotives
2. Natural Gas – Dual Fuel Locomotives Developments and Field Demonstrations
3. Hidden Costs of Locomotive Modernization

2014
1. End of the Line for the MU Jumper Multiple Locomotive Unit Control: A Discussion of Past, Present and Future
2. Natural Gas Economics and Fueling for Locomotives
3. What are my Natural Gas Engine Choices?

2013
1. Locomotive Data and Acquisition Reporting Systems (LDARS) and Crash Memory Module (CMM)
2. Natural Gas Locomotives
3. Remote Monitoring of Locomotive Systems
4. Extending Battery Life

2012
1. Tractive Effort and Adhesion: A Review of Yesterday, a Look at Today, Concerns for Tomorrow
2. A New Tier 0+ Solution EFI for EMD 645 Engines
3. Locomotive Repower with a High-Speed Engine and a Reduction Gearbox
4. The A3 Problem Solving Process in Action – a Case Study

2011
1. Positive Train Control
2. EPA Tier 4 Locomotive Development Status Update

2010
1. Tier 4 Diesel Emission Reduction Strategies
2. Testing of the BNSF Fuel-Cell Switch Locomotive: Part 2

2009
1. Ethanol Electric Hybrid Locomotives
2. Testing of the BNSF Fuel Cell Switch Locomotive: Part 1

2008
1. Maintenance Experience with Gen Set Switcher Locomotives to Date
2. Maintenance of the BNSF Fuelcell-Hybrid Switch Locomotive

2007
1. Fuel cell Hybrid Switcher Locomotive: Engineering Design
2. Locomotive Digital Video Recorder
3. CN Distributed Braking Car

2006
1. Variable Hybridity Fuel cell-Battery Road Switcher
2. GE Transportation-Hybrid Freight Locomotive
3. Dynamic Brake Status Reporting

2005
1. PL42AC Locomotive-Overview
2. Fuel Cell Locomotives
3. Locomotive Electric Hand-brake Systems

2004
1. GE Evolution Locomotive – An Overview
2. EMD SD70Ace Locomotive-Reliability for 2005 and Beyond
3. Get Them into Condition: Condition Based Traction Motor Reliability
4. Making the Switch - An Update on the EMD GP20D/GP15D Switcher Locomotive
5. "Fuel Proof Tank Repairs" - A Best Practice for your Locomotives

2003
1. New MPXPRESS Commuter Locomotive Models MP 36PH-3S & MP36PH-3C
2. The Green Goat Hybrid Locomotive
3. Observation on Auto Engine Start/Stop

2002
1. On Board Rider - A Remote Locomotive Condition Monitoring System
2. Cool Your Jets: A Low Cost, High Performance Rooftop Air Conditioner

2001
1. Performance and Economic Aspects of Various Environmentally Friendly Coatings for Rolling Rail Equipment
2. Non-destructive Testing: Crack Detection Technology - EMFaCIS

2000
1. FIRE: EMD Turns up the Heat on Railroad Electronics Integration
2. Put the Chill on Air Conditioning Costs
3. Do Not Get "Steamed" Over Fuel Tank Repairs
4. Industry Responses to Emission Regulations
5. Improved Adhesion Through the Use of Individual Axle Inverters

1999
1. Locomotive Filtration-Where are We Going?
2. EMD Markets a New Line of Switchers

1998
1. Expert Systems
2. EMD SD90MAC 6000 HP Locomotive - Where Are We Today? GE AC6000CW Locomotive - Where Are We Today?

1997
1. An Overview of the Electro-pneumatic Train Brake
2. Locomotive 6724, Where Are You? GPS, Mobile Telemetry and GIS Technologies in a Railroad Environment
3. Runout Measurement Using Non-Contact Sensor Technology
4. Common Rail Fuel Injection

1996
1. Activities Toward New Safety Standards for Passenger Equipment
2. SP-3 Thin Sensor Technology for Variable Force Measurement
3. Top-Of-Rail Lubrication
4. Traction Motor Vibration and its Effects

1995
1. Belt pack Locomotive Control System
2. The MK1200G Switching Locomotive
3. Advanced Traction Motor Testing

1994
1. Electronic Fuel Injection Systems.
2. Status of Distributed Power in Freight Trains.
3. Advances in Distributed Power-Iron Highway.

1993
1. New Technology to Solve Old Problems
2. Developments in Off-Shore Technology
3. Updates on AC Traction Developments

1992
1. Talking to the "Smart' Locomotive
2. Cab Noise Abatement
3. Electronic Management of Locomotive Drawings
4. Update on High Productivity Integral trains
5. AC Traction - A New Development

1991
1. Locomotive Cab Integration and Accessory Management
2. Improvements in Locomotive Adhesion Performance
3. The Role of Duty cycles in Locomotive Fuel Consumption.
4. What's New in Gadgets and Black Boxes: What do our Locomotives Really Need?
5. Failure Analysis

1990
1. Motor Driven Air Compressors for Diesel-Electric Locomotives
2. Locomotive Cab (HVAC) Heating, Ventilation and Air Conditioning Systems
3. Effect of Technology on Standardization of Cab Control Equipment
4. Locomotive Durability, Reliability and Availability Understanding Your Abilities

1989
1. A Rational Approach to Testing Locomotive Components
2. New Developments in Locomotive Cab Design

1988

1. Amtrak F69 PH AC Passenger Locomotives
2. New Component Developments Retrofittable to Older Model Locomotives
3. Locomotive Applications of Caterpillar Engines
4. Wheel slip Control for Individual Axles

1987

1. Electronic Fuel Injection Systems
2. Update on Electronic Governors
3. Recent Advances in Steerable Locomotive Trucks - the EMD. 4 Axle, 4 Motor HT-BB Articulated Truck
4. Converting an F40 Locomotive to AC. Traction

1986

1. Future Train Control Systems
2. Bringing Future Train Control Systems Back to Earth
3. Low Maintenance Locomotive Batteries
4. Electronic Engine Control Systems

1985

1. The Sprague Clutch for EMD Turbocharged Engines
2. AC Traction Locomotives Update
3. Natural Gas Locomotive Update
4. Ceramic Coated Engine Components
5. Locomotive Cab Developments

1984

1. GE Dash 8 Locomotives
2. EMD 50A Series Locomotives
3. Natural Gas Locomotives
4. Appraisal of the AC Traction Locomotive

1983

1. Microprocessors for Locomotive Control and Self Diagnosis.
2. Locomotive Fuel Tank Gauges
3. Locomotive Aerodynamics
4. Bombardier HR 616 Locomotive
5. Missouri Pacific - Phase III Locomotive Heavy Repair Facility, N. Little Rock, Arkansas

ELECTRICAL MAINTENANCE COMMITTEE
(formerly known as the Diesel Electrical Maintenance Committee)

2023
1. Using Locomotive as Emergency Generator Back Up Power
2. Locomotive LED Headlight Evolution
3. DC to AC Diesel-Electric Locomotive Conversion

2022
1. Emission Reduction Technologies
2. DC Traction Motor Reliability Solutions
3. 27-Point MU Control Trainline Connectivity Issues

2021
1. EMD DC Traction Motors-Past to Present
2. Locomotive Battery Maintenance-Best Practices
3. Remote Control Technology Enhancements

2020
1. AESS & Battery Health Task Force Study
2. Compressor Control Reliability Improvement for GE Locomotives
3. Distributed Power Consists Setup
4. The Evolution of Traction Motors

2019
1. Lost In Transition: The Collaborative Effort to Develop a Solution for Generator Transition Circuit Failures
2. What Can the Load Regulator Tell Me?
3. Getting off to a Good Start

2018
1. Slip Rings & Collectors - What Keeps Your Wheels Turning?
2. Still Stuck in the Middle With You: PTC and Short Line Railroads
3. Condition Based Maintenance VIA Rail Canada
4. Troubleshooting a One-Way Serial Link on an EMD SD70M Using EM2000
5. Battery Temperature Performance Study with Strategies to Optimize Charging and AESS Settings

2017
1. We Didn't Start the Fire: Best Practices for Inverter Cooling Management
2. Troubleshooting the Excitation Circuit on an EMD SD40-2
3. AESS (AUTOMATIC ENGINE START STOP
4. A Study of Locomotive Battery Charging and Performance

2016
1. Stuck in the Middle With You: PTC and Short Line Railroads
2. Troubleshooting Multiplexer Faults on EMD Locomotives Using EM2000
3. Battery Technology Within the Diesel Starting Industry
4. Supercapacitor Safety

2015
1. Modular Hardware & Software
2. Idle Reduction on GE Locomotives
3. The Ghost in the Machine: EMI on Your Locomotive

2014
1. FRA Requirements for Headlights, Ditch Lights & Other Lighting
2. Investigating Distributed Power Failures
3. Product Validation and Certification
4. Sensors and Transducers Installation Tips

2013
1. Locomotive Diagnostics
2. Positive Train Control (PTC) - Onboard Segment: An Update and Recommendations
3. Locomotive Battery Storage and Maintenance A Recommended Best Practice

2012
1. Extending Locomotive Maintenance to 184-day Intervals - Part II
2. Design for Reliability: Locomotive Lifecycle Approach

2011
1. Efficiency and Maintenance Aspects of the New Amtrak Electric Locomotive ACS 64
2. Modernizing an Aging Heavy Haul Locomotive Fleet
3. Three Stage Battery Charging for EMD Locomotives

2010
1. Infrared Thermography in Locomotive Electrical Maintenance
2. Electrical Connectors: Standards & Field Service Challenges
3. Locomotive Batteries and Long Term Storage
4. Long Term Storage Electrical Rotating Equipment
5. Long Term Storage Electrical Equipment

2009
1. EMD Slip Rings-Brushes & Wear
2. Using Test Instrumentation Safely on Gen-Set and AC Locomotives
3. Extending Locomotive Maintenance
4. 710 ECO Power

2008
1. Challenges with Retrofitting New Systems to Old Locomotives
2. Locomotive Maintenance Conventional vs Genset
3. Using Test Instrumentation Safely
4. Electric Motor Preventative Maintenance

2007
1. Finding Open and Short Circuits on AC Traction Motors
2. Locomotive Cab Signal Failures and Troubleshooting
3. Maintaining Main Generators - Some Safer Methods
4. Locomotive Software Management

2006
1. Application of 2000 HP Hybrid Yard and Road Switcher Locomotives
2. Portable Troubleshooting Data Logger
3. Adapting a Freight Locomotive into a Passenger Locomotive

2005
1. Wireless Communication Technology Overview
2. Maintenance Benefits of the Green Goat - Part A Hybrid Switcher Update – Green Goat - Part B

2004
1. Electrical Maintenance Benefits of the SD70ACe
2. Remote Monitoring & Diagnostics: Development and Integration with Maintenance Strategies
3. Carbon Brushes Revisited – an Update for 2004

2003
1. Diesel Driven Heating System
2. Trainline - ES TIBS as Applied to CN/IC Locomotives
3. Head End Power (HEP) Safety Issues
4. Fuel Savings Using Locomotive Consist Management

2002
1. Commutator Profiling
2. Basics of an Operations Center
3. Diagnostics for Older Locomotives
4. Traction Motor Protection Panel
5. "Locomotive Auxiliary Power Units" - Lessons Learned

2001
1. Diagnostic and Predictive Maintenance
2. Locomotive Replacement Control System
3. Automatic Shutdown Startup Controls - Fuel Savings through Technology
4. Locomotive Alternative Air Conditioners

2000
1. Custom Electronics and their Applications
2. Locomotive Wire Update
3. Integrated Air Brake & Distributed Power Under EMD Fire System
4. Carbon Brushes - A Fresh Look
5. RM&D - What It Is, What It Does
6. An Alternate Adhesion System

1999
1. Transition Panels for Older Locomotives
2. R.S. A.C. Crash Worthy Event Recorder Update
3. Traction Motor Suspension Bearing Temperature Monitoring System
4. EMD SD90MAC 6000 HP Locomotive-An Update
5. IGBT-What's New for GE AC6000 Locomotives

1998
1. Locomotive Troubleshooting Assistant
2. Locomotive Electronic Brake Maintenance
3. SD70MAC Capacitor Discharge Procedure
4. Power Savings for Electrical Locomotives
5. Auto Stop/Start and Layover Systems

1997
1. Review of Battery Maintenance and Available Options
2. Battery Charger/Booster
3. Locomotive System Integration
4. Electronic Governors

1996
1. EMD SD80MAC High Voltage Safety
2. GE AC Locomotive Electrical Safety Features
3. Electromagnetic Interference (EMI on AC Locomotives)
4. QTRAC 1000 Adhesion Control System
5. Locomotive Health Monitoring- The Key to Improved Maintenance

1995

1. Canadian National Battery Water Usage
2. Remote Diagnostics-Radio Download
3. Programmed Preventive Maintenance
4. Commutation Monitoring in Locomotive DC Traction Motors
5. The EMD Diesel Engine Control (EMDEC) System

1994

1. Safety First - Video on Electrical Safety
2. Locomotive Health Monitoring Systems
3. Event Recorder Update SD60 Dynamic Brake Improvements

1993

1. Automatic Engine Shutdown and Restart System
2. Layover Systems/Standby Power Systems
3. CN North America – Electronic Temperature Control
4. Speed Sensing Devices Adhesion Alternative
5. Electronic Brake 6. Modern Tooling Update

1992

1. Nickel-Cadmium Batteries as an Alternative
2. Overview of Locomotive Microprocessor Based Controls
3. Locomotive Air Conditioning
4. Testing Traction Alternator Fields on EMD Locomotives
5. Flange Lubricators

1991

1. Locomotive Rebuilding Something Old- Something New. Standardization of Electrical Equipment
2. Locomotive Batteries: a. Storage Handling Procedures; b. Recommended Maintenance Procedures; c. Recommended Repair Procedures
3. Amtrak's AC Traction Locomotives
4. Modern Tooling for Electricians Recorders
5. Why Can't We Have One Central Computer?
6. EPA and Regulation Driven Cleaning

1990

1. Modern Tooling of Electrical Troubleshooting
2. Maintaining Solid State Event Recorders
3. Why Can't We Have One Central Computer?
4. EPA and Regulation Driven Cleaning

1989

1. Modern Tooling for the Troubleshooting Electrician: a) test meters available (single function); b) test meters available (multiple functional); c) analysis and diagnostic tools
2. Sound Electrical Repairs and Practices for: a) traction motors; b) grids and fans; c) wire and cable solderless termination
3. Guidelines for Preparing Electricians for the 1990s

1988

1. Utilizing Magnetic Recorders for Maintenance
2. Solid State Locomotive Recorder
3. Improved Utilization of GE DASH 8 Data Recording Systems
4. Locomotive Health Data and Its Uses to The Railroad
5. Improved Data Acquisition from EMD's 60 Series Display Computer

1987

1. Proper Maintenance of Electrical Fuel Savings Options
2. Preliminary Report on AAR Traction Motor Study

1986

1. Cleaning, Handling & Storage of Electrical Equipment: A. Solid State Components; B. Rotating Equipment
2. Qualification of Locomotive Power Plants through Self load

1985

1. Locomotive Microprocessor Technology in Retrospect
2. Dynamic Brake Protective devices and Troubleshooting EMD-2 and GE-7 Locomotives
3. Indicators and Recorders for Locomotive Retrofit Application - Fuel, Speed, Power and Selected Events

1984

1. Electronic Technology to Improve Performance
2. GE Dash 8 Diagnostic Display
3. "Probe" Locomotive Diagnostic Equipment
4. CATS-Computer Aided Troubleshooting
5. Fuel Conservation Through Electrical Modifications-GE and EMD
6. Performance of Locomotives After Storage

1983

1. Ground Relay Trouble Shooting
2. Specification for remanufactured D87 Traction Motor Frames (Using D-77 Armature Coils)
3. Locomotive Storage (Electrical)
4. Water Cooling and Refrigerating Methods for Locomotive Cab Application

1982

1. Tests on Traction Motors
2. Transition Troubleshooting
3. Onboard Diagnostic Systems
4. Starting Systems

1981

1. Evaluation of Improved Test Methods
2. Teflon Bands
3. New Generation Locomotives
4. Electrical Troubleshooting
5. Batteries and Charging Systems
6. Troubleshooting EMD AC Auxiliary Generator System
7. Selection of Locomotives for Major Locomotive Overhauls

SHOP SAFETY, PROCESSES AND EQUIPMENT COMMITTEE
(formerly known as the Shop Equipment and Processes Committee and also the Shop Equipment Committee)

2016
N/A

2015
1. Video Borescope for Locomotive Maintenance Officers
2. Mechanical Department-Three Main Safety Focus Areas

2014
N/A

2013
1. Bolt Torquing / Tensioning Manual Torque Wrenches and Adapters
2. Mechanical Seven Safety Absolutes-BNSF Railway
3. PROPER TRAIN WASHING – More Than Just Brushes and Nozzles

2012
1. Application of Machine Vision Technology in Train Inspection
2. Smart Technologies for Locomotive 92-Day Inspections-Automate or Semi-Automate Wheel Measurement Gauges

2011
* 1. New Tooling Development-Level Loading, Extended Reach "C" Frame Lifting Device and Manipulator - Under the Hook Load Limiter Alarm
2. Automatic Wheel Inspection Systems

2010
1. New Tooling Development-Level Loading, Extended Reach "C" Frame Lifting Device and Manipulator - Under the Hook Load Limiter Alarm
2. Ultrasonic Inspection of Railway Wheels
3. Introducing a Portable yet Affordable Solution for Truing your Locomotive Wheels "Without the need to remove the wheels"
4. Automatic Wheel Inspection Systems

2009
1. Going Green in the Maintenace Facility
2. Shop Equipment for Truck Removal, Maintenance and Repair

2008
1. Vehicle Progression Systems

2007
1. Evolution and Improvements in Locomotive Rerailing Cranes

2006
1. Wheel Gauge Technology 2
2. Train Washing
3. Environmental Railroad Containment Products

2005
1. Mobiturn Wheel Truing Services

**This topic appeared in both the 2010 and 2011 LMOA Proceedings Publication*

2004
1. Under the Hook Lifting Devices
2. Sanding in the Railroad Industry- Part III - A Gentle Answer for an Abrasive Situation

2003
1. Locomotive Shop Support Systems and Equipment
2. Hand Tools - An Ergonomic Update
3. Locomotive Lifting Systems

2002
1. Note: Paper on lifting systems was presented by Ron Begier of Portec at the 2002 convention; however it did not appear in publication - will appear in the 2003 proceedings publication.

2001
1. Sanding in Railroad Industries - Part II - How to Specify Reliable and Safe Sanding Systems

2000
1. The Tandem Wheel Truing Machine at Amtrak's Ivy Shop
2. Shop Talk 2000: Fall Protection Technology
3. Sanding in the Railroad Industry

1999
1. Increasing Diesel Shop Capacity
2. Conrail-Cold Asphalt Processing of Environmental Waste Sand and Sludge
3. Dry Ice Cleaning of GE Intake Ports
4. AAR-LFIS No Spill Fueling System

1998
1. Smoke Opacity Testing-Emission Detection Equipment and its Use
2. HydraulicTensioning Tools and its Use
3. High Speed Portable Align Boring Series
4. Locomotive Mobile Servicing

1997
1. Wheel Truing as Preventive Maintenance
2. Conrail-Selkirk Diesel Terminal Wastewater Treatment Facility Recent Environmental Improvements

1996
1. Locomotive Painting Drop Table Tooling for New EMD and GE Locomotives

1995
1. Pre-Maintenance Inspection
2. Railroad Turntable Modification
3. Mobile Locomotive Service Vehicle

1994
1. Electronic Fuel/Unit Injection Tooling.
2. Locomotive Roller Support Bearing Tooling.
3. Fall Protection and Man Lifts.
4. Locomotive Washing Systems.

1993
1. Dynamic Balancing for GE Dash 8 Model Locomotives
2. Air Compressor Automated Station
3. Ergonomics in the Work Place
4. Hydraulic Traction Motor Shimming Table

1992
1. Automated Test and Production Equipment
2. Safety Corrective Action Team
3. Automated Locomotive Wheel Shop

4. Cleaning and Surface Preparation 1, with Sodium Bicarbonate Based Abrasive Blasting
5. Trainline Continuity Tester
6. BN - Railroad Power Assembly Shop of the 1990's

1991

1. Economic Separation of Emulsified Oil from Waste Water Using Ultra Filtration Membranes
2. EMD Cylinder Head Valve Seat Machining
3. Automated Barring Over Machine for EMD Diesel Engines
4. New Equipment for Testing EMD Engine Protectors
5. Compressed Air for Railroad Facilities Issues and Solutions to Achieve Clean, Dry, Oil Free Air

1990

1. EMD Valve Bridge Machine
2. GE Traction Motor Roller Suspension Bearing Replacement Equipment and Procedure.
3. Locomotive Component Replacement Forklift Attachment.
4. Locomotive Sanding, Fueling and Drop Tables
5. Hazardous Waste Disposal

1989

1. Automated Locomotive Wheel Shop
2. Laser Guided Material Handling Vehicles
3. Bulk Rail Lubrication Storage & Fill Systems
4. Pilot Plate Straightening Equipment

1988

1. Fuel Management Control Systems
2. Locomotive Mounted Rail Lubrication Fill Systems.
3. Comparison of Shop Air Compressors
4. Locomotive Toilet Servicing Equipment
5. Innovations in Blue Flag and Derail Protection

1987

1. Modern Servicing Facility for Improved Reliability and Availability
2. New Developments in GE Tools
3. Implementation of a Quality Process
4. A Quality Traction Motor Shop
5. Wheel Truing Machine Technology

1986

1. Robotics Update 1986 – Now What?
2. CNC Machine Tools
3. A New GE Power Assembly Area
4. Locomotive Wash System -1986

1985

1. Computer-Assisted Preventative Maintenance
2. New Tools for Material Handling and Overview of Balancing Technology
3. Effect of Governmental Regulations on Locomotive Finishing

1984

1. Shop Tools: A. New Tools; B. Shop-Made Tools
2. Traction Motor Shop Equipment Up-Date
3. Hazardous Waste Handling and Disposal

1983

1. Locomotive Maintenance Using a Production Line Process
2. Shop Tools to Increase Productivity and Improve Quality
3. Dynamic On-Line Performance of Locomotives Without On-Board Tele-Metering
4. Management in Action
5. New GE Training Center
6. Welding Qualifications

1982

1. Tools
2. Rebuild line for EMD Turbochargers
3. Air Brake Equipment Line
4. Industrial Robots
5. Automated Machines
6. Safety Related Items and Equipment

1981

1. Training Aids
2. Testing Devices Inspired by New FRA Laws
3. Tools and Training for Productivity
4. Changes to Shop Facilities Required by Newly Adopted EPA & OSHA Regulations
5. Tour through Conrail Altoona Shop
6. Supply/Service Facilities
7. GE Assembly Shop

DIESEL MATERIAL CONTROL COMMITTEE

2016
N/A

2015
1. "CORES" Long term assets… What is their value?
2. Innovations in Material Storage/ Management
3. Bar Coding: A 2015 Update and Beyond

2014
1. Examining Lifecycle Costs Part One - Defining the Inputs

2013
2. Recycling of Materials
3. Material Solutions for Implementing PTC

2012
1. Tracking Cores
2. Bar Coding: An Update on Tier Emission Compliance

2011
1. Small/Heavy Component Ergonomics Locomotive Starters
2. Storage, Handling, and Recycling of Locomotive Batteries

2010
1. Green Initiatives
2. Bar Coding, Material Tagging and Identification for Recycle and HAZMAT Controls
3. CN & Sustainable Procurement

2009
1. CSX Supplier Quality "Supplier Rating System"

2008
1. Lean Manufacturing as it Applies to Material Handling

2007
1. Insourcing vs. Outsourcing "The Altoona Story"

2006
1. PDAs for Inventory Control
2. Inventory Management System

2005
1. Centralized Materials Management
2. Centralized Component Core Management-Centralized Warehouse-Locomotive Components - Part A: BNSF Rwy. Centralized Component Core Management-Rotable Warehouse - Part B: Norfolk Southern Corp.

2004
1. Milk Run: Norfolk Southern's Dedicated Locomotive Parts Shipping System

2003
1. Just in Time Delivery - The Juniata - Shop Material Control Program
2. The Continuous Improvement Approach

2002
1. "Mentored Champion Process" - CSX Supply and Service Management

2001
1. RAILMARKETPLACE.COM The Industry's Market Exchange

2000
1. GE Global exchange Services
2. My.SAP.Com

1999
1. Composite Floors and Doors for Locomotives
2. Packaging Standards

1998
1. Tighter is Not Better
2. Are Vending Machines the New Wave for Safety Items?

1997
1. Raising Our Standards for Safety
2. The Rail Industry's Electronic Parts Catalog Exchange Standard (EPCES) - A Better Way

1996
1. Technology Transfer-The Hot Process of the 90's-Condition Based Maintenance
2. Warehouse Automation

1995
1. Warranty and Reliability Management
2. Railroad Industry Group (RIG) Exchange Standard for Parts Catalog Information

1994
1. Material Consignment
2. The Next Step in Electronic Information Management Interactive Technical Manuals.
3. Electronic Catalog Alternatives.

1993
1. Technology Transfer
2. Electronic Cataloging from a Material Perspective
3. Computerized Reordering from the Mechanical Employee's Point of View
4. Electronic Catalogues: OEM/Supplier Point of View

1992
1. Warranty Overview and Issues
2. Recycling-1992
3. Bar Coding
4. Material Packaging

1991
1. The World of Recycling
2. Problems with Solution
3. Problems with Opportunities

1990
1. Waste Minimization.
2. Hazardous Materials End Cost
3. The Role of the Suppliers

1989
1. Packaging and Containerization for Today's Railroad.
2. Innovations in Material Distribution Resulting from Shop Consolidations.
3. Outsourcing! Does Anyone Really Understand the Difference Between UTEX and Repair and Return and the Effect on the Budget?

4. "Stuff" Happens! - A Skit About the Necessity of Feedback from Suppliers - Suppliers to the end User

1988
1. Communication - The Vital Link in Materials Acquisition
2. Quality Assurance Through Communications and Feed-back
3. Paperless Requisitions
4. A Practical Application of Bar Coding in the Railroad Industry

1987
1. Suppliers Selection for Component Failure Analysis
2. Vendor Performance or Service Level
3. Bar Codes
4. Bar Coding - Railroads
5. Material Handling Innovations by the Airline Industry

1986
1. The In-House Electronic Requisition System
2. Electronic Data Interchange.
3. RAILING and Electronic Purchasing
4. Quality Evaluation Sourcing Decisions of Material

1985
1. Evaluating Locomotive Maintenance Projects
2. Reconditioning Material: In-House vs. Vendor
3. Identification and Disposition of Surplus Material
4. Cost of Carrying Surplus
5. Evolution and Future Directions of Material Handling Equipment in Railroad Use

1984
1. The New Language of Bar Codes
2. Forecasting Material Requirements
3. a. Fuel Security - Are You Getting What You Pay For? b. Fuel Oil Is Expensive
4. Pros and Cons of Material Purchasing Contracts (Single Source - Just In Time Inventory)

1983
1. Improved Locomotive Productivity Through Computerized Data
2. Inbound Material Inspection
3. Minimize Maintenance Cost Through Material Management Systems
4. New Ideas in Material Storage Containers

1982
1. Use of kits in locomotive maintenance
2. Cost effective methods of shipping material from vendors
3. Union Pacific's Component Inventory Maintenance System (CIMS)
4. Advantages of using shipping containers

1981
1. Disposal of Unserviceable Component Parts: What is the Most Profitable Method?
2. Innovations in Stores Material Handling, Via Computer Technology
3. Locomotive Held for Material: An Update for the 80's
4. The Best Approach to Procuring Material; New, UTEX, Repair and Return or Shop Repair

MECHANICAL MAINTENANCE COMMITTEE
(formerly known as Diesel Mechanical Maintenance Committee)

2023

1. Thermoplastic Polymer Bushings in Locomotive Brake Applications: Benefits, Challenges and Solutions
2. Reducing GHG Emissions Through Aerodynamics on North American Railroads
3. The Discipline of Best Practices for Gaskets and Seals: Design and Use-Gasket and Seal Design Parameters for Locomotive, Marine and Power Generation Diesel Engines

2022

1 .Systems Engineering Product Development and Integration
2. Robust Validation-Simultaneous Testing of Multiple Variables
3. Autonomous Detection of Compressed Air Leaks on Trains

2021

1. Crew Comfort for Locomotive Cabs
2. BNSF and Wabtec Battery Electric Locomotive Demonstration Summary
3. New Locomotive and New Technology "Disappointment Syndrome: -What is it? What Causes it: How Do You Avoid It?

2020

1. AAR RP-589 Locomotive Compressor Load
2. Introduction to Variation

2019

1. Locomotive Storage and Return to Service – Update Best Practices
2. Problem Solving Basics
3. Locomotive Emissions Labeling
4. DEF Systems for Locomotives
5. BNSF & GE Pilot Hybrid Locomotive Consist Using a Battery Electric Locomotive

2018

1. New Procedure to Check GE-FDL Cam Timing
2. A Review of Compressed Air Systems
3. Basic Maintenance Practices for High-Pressure Common Rail Fuel Systems
4. Locomotive Shore Connection Heating Systems Update

2017

1. Locomotive Emission Kits
2. DC To AC Locomotive Conversion
3. Water Treatment of Cooling Systems
4. Overview of Locomotive Starter Abutment & Fail-to-Start Issues

2016

1. Locomotive Horsepower
2. Best Practices Locomotive Fuel Spill Prevention
3. LOCOMOTIVE METRICS: Reliability/Availability; Is there a need for a Standard Definition?
4. SD59MX EGR Performance Reports
5. GE Dual Fuel Locomotive Development

2015

1. Measuring the Value of Installing Solid Lube Sticks on Locomotives
2. NS CNG Locomotive Test Program
3. Utilizing Modern Electronics to Assist with Mechanical Maintenance Planning
4. Shore Connection Heating Systems for Locomotives Electric Heating Systems with New Implementation Techniques
5. Locomotive Exhaust Emission Regulations: Is Tier 5 Next?

2014

1. Avoiding Logic Traps in Problem Solving
2. AFM Calibration Absolutes for All Air Brake Systems
3. Locomotive Hand Brake Maintenance, Best Practices
4. Locomotive Cab Securement
5. The Drooping Brake Head – A Perennial Problem

2013

1. Pacific Harbor Line Tier 3+ and Tier 4 Re-Powered Locomotive Emissions After-treatment Experience
2. Locomotive Repower: Why Repower and What to Consider
3. 21st Century Locomotive Truck and Bogie Related Improvements

2012

1. Failure Modes and Effects Analysis
2. Main Generators - AR Type Traction Alternators - Best Practices – II Removal, Installation and Alignment
3. Finding an EPA Certified Emissions Kit for Locomotive Engine Overhaul
4. Locomotive Idle Minimization
5. Manual Torque Wrench Basics

2011

1. Locomotive Storage and Return to Service Best Practices
2. Design for Reliability
3. Main Generators - AR Type Traction Alternators - Best Practices -Identification and Maintenance

2010

1. EMD Turbocharger Change Out Best Practices
2. Effect of Intake Air Filter Restriction on Fuel Consumption and Emissions
3. Locomotive Diesel Exhaust Aftertreatment Demonstrations; Size, Location and Issues

2009

1. Variability and the Toyota Production System
2. The Thorough Bred Maintenance System
3. Air Compressors – Best Practices – Back Shop Maintenance Part II
4. Alignment Control Coupler Requirements

2008
1. Ultra-Low Sulfur Diesel Fuel:Impact on Locomotive Maintenance
2. Exhaust Aftertreatment Technologies: Definitions and Maintenance
3. EPA Emission Requirements for Locomotives
4. Air Compressors-Best Practices-Identification and Maintenance, Part I

2007
1. Training a New Work Force
2. Locomotive Horn Testing
3. Diagnostic Techniques for Predictive/Preventative Maintenance-Exploitation of New Technology
4. Locomotive Particulate Matter Emissions Reduction through Application of Exhaust Aftertreatment Systems

2006
1. Lost Opportunities of Rebuilding Trucks
2. GP/SD38-2S Locomotive-A New Class of Power
3. Heavy Diesel Engine Field Repair
4. Benefits of Mobile Maintenance

2005
1. Crankcase Overpressure Today - Concentrating on EMD and GE Locomotives
2. Cold Weather Locomotive Operations
3. Importance of Cooling System Health, EPA Compliance Impact
4. Overhaul Extension

2004
1. GE Evolution Series-Maintenance and Reliability
2. EMD 70ACe and SD70DC-Tier 2 Locomotive Models-Mechanical Maintenance Enhancements
3. Best Practices Series-For Regional and Shortline Railroads-Managing Locomotive Wheel Wear
4. Maintenance Savings - Mother/Daughter Units

2003
1. Training 60/30 Impact Now Beyond
2. Condition Based Maintenance, Practical Approaches and Techniques

2002
1. Detrimental Effects of Locomotive Engine Idling
2. Emissions Standard Compliance for the GE Dash 8 Locomotives
3. Tier 0 Emissions Compliance for the GE Dash 8 Locomotive
4. Locomotive Inspection Training - A Preview of CFR 229/238
5. Computerized Record Keeping to Improve Performance and Reduce Maintenance Expense for Shortline and Regional Railroads

2001
1. Troubleshooting Electronic Fuel Injection on GE Locomotives
2. Troubleshooting Electronic Fuel Injection-EMDEC ElectroMotive Division Two-Stroke Engine
3. How to Maintain ALCO Locomotives in the 21st Century
4. Catastrophic Engine Failures: Shortlines & Regionals (Best Practices)
5. Are We Ready for Reliability- Centered Maintenance?

2000

1. 2000 Emissions Review - GE Perspective
2. 2000 Emissions Review – EMD Perspective
3. EMD Diesel Engine Crankshaft Main Bearings Edge-Load Condition (Description, Detection and Resolution)
4. 2000 - LMOA Best Practice Series: Locomotive Truck Overhaul Procedures

1999

1. Vibration Analysis
2. EMD Power Assemblies Change Out Practices for Regional and Shortline Railroads
3. Improved Access to GE7FDL Engine Intake Manifold for Cylinder Inlet Port Cleaning
4. What's Ahead in Plastics for Locomotive Applications
5. Cast Iron, Composition Brake Shoe Arrangements vs. Type-J Relay

1998

1. LMOA Best Practices Series: GM Engine Crankcase Pressure Troubleshooting
2. Union Pacific's New EMD Diesel Engine Rebuild Line At Downing B. Jenks Locomotive Facility-No. Little Rock, Arkansas
3. GE Turbo Rebuild Procedures
4. Mechanical Impact of Locomotive Emissions Regulations
5. Locomotive Engine Bearing Developments

1997

1. LMOA Best Practices - GE Water Leaks
2. Locomotive Update - MK 1200G LNG Powered Switcher
3. Proper Use of Gaskets and Seals

1996

1. Air Brake Trouble Shooting-Where We Are Now
2. Best Practices - Internal Water Leaks on EMD Locomotives
3. Best Practices - Oil Out Stack

1995

1. General Electric New 7HDL 6000 HP Diesel Engine
2. LMOA Best Practices Series – Low Oil Pressure Trouble-shooting Procedures for EMD Turbocharged Locomotives
3. How Can a Regional or Shortline Justify a Wheel Truing Machine?
4. EMD SD60M Natural Gas Locomotive Development

1994

1. Electronic Fuel Injection.
2. ICAV - The Physical Affects on Instantaneous Crank Shaft Angular Velocity Technology
3. Maintenance Practices Comparison Between Regionals and Class I Railroads
4. Amtrak Document Management.

1993

1. EMD's Three-Axle Radial Steering Truck
2. The Natural Gas Locomotive at BNRR
3. Locomotive Waste Oil Retention
4. Fragmented Maintenance

1992
1. Mechanical Quality Progress Developing on Major Railroads.
2. Coal Fuelled Diesel Locomotive Development.
3. 18:1 Upgrade for the 645E Engine
4. Automatic Stop and Start Control System
5. Acquiring Locomotives for Regionals and Shortlines

1991
1. Recommended Practices for upgrading 567 to 645 Design.
2. Conversion of SD40 Locomotives to SD 40-2 on CSX
3. Update: Diesel Engine Emission Controls
4. Stationary and Dynamic Test Procedure for Locomotive Fuel Efficiency Measurement
5. Personnel training on New Technology.

1990
1. Caterpillar Power in Remanufactured Locomotives.
2. The EMD 710G3A Engine
3. Improving Performance of Traction Motor Friction Suspension Bearings.
4. Fluid Leaks on GE 7FDL Engine.
5. Rebuild of the EMD F3B Fuel Injector.

1989
1. Wheel Axle Gear Wear/Impact on Traction Motor Life
2. 710 Engine - Operational and Overhaul Update
3. GE Power Assembly Improvements on Welded Head-to-Liner
4. Assembly Rework Procedures.
5. EMD Engine Oil Leaks. Secondary Air Filtration - Barrier vs. Impingement

1988
1. Low-idle Operating Costs vs. Fuel Savings.
2. Rebuilding GE's EB Liner
3. The Extended Maintenance Truck
4. Flange Lubricator Update
5. Permaspray II - Cylinder Liner

1987
1. EMD Water Pump Rebuilding
2. On Board Flange Lubricator
3. Gear Case, Bull Gear and Pinion Gear Longevity in the 1980's - Gear Cases - Canadian National Experience.
4. Maintenance of Locomotive Fueling Systems for a Spill Free Operation

1986
1. Rebuild of Valve Bridge Assemblies
2. Update of New Locomotive Service Problems, EMD and GE Effecting Quality Performance
3. Chromium Plating and Its Uses
4. Development of a New Diesel Engine for Heavy-Duty Locomotive Service

1985
1. Procedures for Storing Serviceable Locomotives for Quality Performance
2. New Locomotive Service Problems, EMD and GE
3. 92 Day Service Requirements: EMD, GE and Bombardier

1984
1. Mechanical Aspects of New Locomotive Designs
2. Maintenance of Locomotive Components

1983

1. Leaks: Cooling Water, Lube Oil, Fuel Oil and Air
2. Torquing Recommendations.
3. Update on Fuel Efficient Locomotives
4. Radiator Screens
5. Alternate Starter Systems

1982

1. Fuel Conservation - Effects on Maintenance
2. Fuel Conservation - What It Costs.
3. Diesel Fuel Receipt and Disbursement
4. Turbochargers

1981

1. Running Gear
2. Filtration
3. FRA Rules
4. Follow-up on Previous Topics

LOCOMOTIVE SOFTWARE AND SYSTEMS
(formed in 2017)

2020

1. COVID-19 and Shortline Railroads

2019

1. IoT – Big Data and Real Time Processing
2. Implementing Predictive Maintenance for Locomotives Using Big Data
3. Analytics through Repairs Integration
4. Locomotive Data Publication Standard S-XXXX.V1.0

2018

1. Best Practices for Locomotive Software Updates
2. Locomotives of The Future as a Mobile Data Center
3. Locomotive Remote-Control Systems

2017

1. Connected Locomotives
2. Sensors and Instrumentations on Locomotives-A Railroad Case Study

FACILITIES, MATERIAL AND SUPPORT COMMITTEE
(formed in 2017)

2023

1 .Storeroom Innovations
2. Overcoming the Supply Chain Issues

2022

1. Wheel Truing Technology: Development and Innovation
2. Supply Chain Issues/Global Economy

2021

1. A Comparison of UTEX, Repair and Return, and Fleet Maintenance Process Flows

2020

1. A Comparison of UTEX, Repair and Return, and Fleet Maintenance Process Flows
2. Bar Coding in Railroad Emission Consideration

2019

1. Wheel Truing Technology Development and Innovation
2. Reducing Locomotives Held for Material
3. New Coating Technology for Graffiti Prevention

2018

1. The Proper Paint Shop-Current Trend and Best Practices
2. PTC at the Belt Railway of Chicago
3. Designing the Bricks and Mortar for Locomotive Maintenance

Constitution and By-Laws Locomotive Maintenance Officers Association

Revised October 3, 2016

Article I – Title:

The name of this Association shall be the Locomotive Maintenance Officers Association (LMOA).

Article II – Purpose of the Association

The purpose of the Association, a non-profit organization, shall be:

- to improve the interests of its members through education,
- to supply locomotive maintenance and technical information to Association members and their employers,
- to exchange knowledge and information with members of the Association,
- to make constructive recommendations on locomotive maintenance procedures through the technical committee reports for the benefit of the railroad industry.

Article III – Membership

Section 1 – Railroad Membership shall be composed of persons currently or formerly employed by a railroad company and interested in locomotive maintenance. Membership may be subject to approval by the General Executive Committee.

Section 2 – Associate Membership shall be composed of persons currently or formerly employed by a manufacturer of equipment or devices used in connection with the maintenance and repair of motive power. Membership may be subject to approval by the General Executive Committee. Associate members shall have equal rights with railroad members in discussing all questions properly brought before the association at the Annual Meeting, serving on Association committees and shall have the privilege of voting and holding elective office.

Section 3 – Life membership shall be conferred on all Past Presidents. Life membership may also be conferred on others for meritorious service to the Association, subject to approval by the General Executive Committee.

Section 4 – Membership dues for individual railroad and associate membership shall be set by the General Executive Committee and shall be payable on or before September 30th of each year. The membership year will begin on October 1 and end September 30. Members' whose dues are not paid on or before the opening date of the annual convention are subject to being prohibited from attending the annual meeting, shall not be eligible to vote and may not be entitled to receive a copy of the published Pre-Convention

Report or the Annual Proceedings of the annual meeting. Failure to pay membership dues within a reasonable amount of time will result in loss of membership. Life members will not be required to pay dues, and will be entitled to receive a copy of the Pre-Convention Report and Annual Proceedings.

Article IV – Officers

Section 1 – Elective Officers of the Association shall be President, First Vice President, Second Vice President and Third Vice President. Each officer will hold office for one year or until a successor is elected. In the event an officer leaves active service, he may continue to serve until the end of his term, and, if he chooses, continue to serve as an elective officer and be allowed to elevate through the ranks as naturally occurs, to include the office of President.

Section 2 – There shall be one Regional Executive officer assigned to oversee each technical committee. Regional Executives shall be appointed from the membership by the General Executive Committee for an indefinite term, with preference given to those having served as a Technical Committee Chairperson. A Regional Executive who leaves active service may continue to serve as such, and shall be eligible for nomination and election to higher office.

Section 3 – There shall be a General Executive Committee composed of the President, Vice Presidents, Regional Executives, Technical Committee Chairpersons, and all Past Presidents remaining active in the Association.

Section 4 – There shall be a Secretary-Treasurer appointed by and holding office at the pleasure of the General Executive Committee, who will contract for his or her services with appropriate compensation.

Section 5 – All elective officers and Regional Executives must be LMOA members in good standing. (See Article III, Section 4.)

Article V – Officer, Nomination, and Election of

Section 1 – Elective officers shall be chosen from the active membership. A Nominating Committee, composed of the current elective officers and the active Past Presidents, shall submit a slate of candidates for each elective office at the annual convention.

Section 2 – Election of Officers shall be determined by a voice vote, or if challenged, it shall require a show of hands.

Section 3 – Vacancies in any elective office may be filled by presidential appointment, subject to approval by the General Executive Committee.

Section 4 – The immediate Past President shall serve as Chairman of the Nominating Committee. In his absence, this duty shall fall to the current President.

Article VI – Officers- Duties of

Section 1 – The President shall exercise general direction over all affairs of the Association and approve expenditures subject to availability of funds.

Section 2 – The First Vice President shall, in the absence of the President, assume the duties thereof. He shall additionally be responsible for arranging a mid-year joint meeting of the Association, preferably to be held in the early part of May.

Section 3 – The Second Vice President shall be responsible for selecting advertising. He will coordinate with the Secretary-Treasurer and contact advertisers required to underwrite the cost of the Annual Proceedings.

Section 4 – The Third Vice President will be responsible for maintaining a strong membership in the Association. He will ensure that membership applications are properly prepared and distributed, monitoring membership levels and reporting same at appropriate times to the General Executive Committee.

Section 5 – The Vice Presidents shall perform such other duties as are assigned them by the President.

Section 6 – The Secretary-Treasurer shall:

A. Keep all the records of the Association.
B. Be responsible for the finances and accounting thereof under the direction of the General Executive Committee.
C. Perform the duties of Secretary of the Nominating Committee and General Executive Committee, without vote.
D. Furnish surety bond in the amount of $50,000 on behalf of his/her assistants directly handling Association funds. Association will bear the expense of such bond.
E. Arrange the schedule for presentation of technical reports at the annual convention and coordinate same with the other associations to minimize conflict.
F. Serve as liaison for the LMOA with other associations
G. Arrange for publications of the LMOA Annual Proceedings.

Section 7 – The Regional Executive officers shall:

A. Participate in the General Executive Committee meetings.
B. Monitor material to be presented by the technical committees to ensure reports are accurate and pertinent to the goals of the Association.
C. Attend and represent LMOA at meetings of their assigned technical committees.
D. Promote Association activities and monitor membership levels within their assigned areas of responsibility.
E. Promote and solicit support for LMOA by helping to obtain advertisers.
F. Train new Committee Chairpersons on LMOA procedures and bylaws. Mentor and support Chairpersons.

Section 8 – Duties of General Executive Committee:

A. Assist and advise the President in long-range Association planning.
B. Contract for the services

and compensation of a Secretary-Treasurer.

C. Serve as the Auditing and Finance Committee.

D. Determine the number and name of the Technical Committees.

E. Exercise general supervision over all Association activities.

F. Monitor technical reports for material considered unworthy for publication or inaccurate.

G. Approve the tentative schedule and list of topics to be presented at the annual convention and published in the Annual Proceedings.

H. Exercise authority to disapprove, for just cause, any new committee member or other item submitted for its approval. Such member or item will stand approved as submitted if the General Executive Committee declines to act.

I. Handle all matters of Association business not specifically herein assigned.

J. Handle all public relations decisions within LMOA and coordinated associations with confidentiality.

Article VII – Technical Committees

The technical committees will consist of:

Section 1 – A chairperson appointed by the President and approved by the General Executive Committee.

Section 2 – A vice chairperson selected by the chairperson and approved by the President.

Section 3 – Committee members, selected as follows:

A. Representatives of operating railroads and regional transit authorities submitted by their Senior Mechanical and Materials Officers and approved by the President of LMOA.

B. Representatives of locomotive builders designing and manufacturing locomotives in North America submitted by their perspective company and approved by the Committee Chairperson.

C. The Fuel, Lube and Environmental Committee will include members from major oil additive companies or their subsidiaries submitted by their perspective company and approved by the Committee Chairperson.

D. As needed, the Committee Chairperson may invite other non-railroad personnel to participate in committee activities on either a limited time or permanent basis

E. The Chairperson will submit the name of perspective new committee members to the Executive Committee which reserves the right to approve or disapprove membership.

F. Companies are allowed a primary and alternate member on committees at the Chairperson's discretion.

Section 4 – All individuals who are on technical committees must be LMOA members in good standing. (See Article III, Section 4.)

Section 5 – Each technical committee shall prepare one or more technical reports for presentation at the annual meeting and publication in the Annual Proceedings. Oral presentations should include the use of slides, videos,

or other media as appropriate to the subject.

Section 6 – Subjects for technical papers will be selected and approved by the General Executive Committee.

Article VIII – Proceedings

Section 1 – The Locomotive Maintenance Officers Association encourages the free interchange of ideas and discussion by all attendees for mutual benefits to the railroad industry. It is understood that the expression of opinion, or statements by attendees in the meeting, and the recording of reports containing the same, shall not be construed as representations or statements ratified by the Association.

Section 2 – Those present at any meeting called on not less than thirty days advance written notice shall constitute a quorum.

Article IX – Rules of Order

The proceedings and business transactions of this Association shall be governed by Robert's Rules of Order, except as otherwise herein provided.

Article X – Amendments

The Constitution and By-Laws may be amended by a two-thirds vote of the active members present at the Annual Meeting.