Preliminary Subject to change

47th RMLA Conference Classes

Additional classes will be added as speakers confirm

March 1, 2018 Update

Little Shop

Michael Lane - National Ski Areas Association

Mikewill lead this session, with help from Sid Roslund, insurance, authorities, and maintenance personnel. The year in review! What went "right and wrong," trends and tips that have been noticed concerning ropeways, and the people who maintain and operate them.

Workplace Fatalities, and OSHA

Dave Byrd - National Ski Areas Association

With 11 deaths in 14 months, across all departments, ski resorts are directly in OSHA's crosshairs. As an industry, there is tremendous room for improvement for workplace safety, and this session will examine recent examples of serious lift-related injuries and fatalities at ski areas, and the consequences as they relate to OSHA investigations and fines, and the resulting abatement and mitigation policies. Fatalities, amputations, falls from lifts, and even serious conveyor incidents — seven amputated arms in last few years! — will be examined. Our employees need (and deserve) management buy-in to improve overall workplace safety, in light of the growing number of serious incident in the industry, specifically as they relate to chairlift operations

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ELECTRICAL CLASSES:

Introduction to Basic Electricity

Mike Taylor - Keystone Resort

This course will cover the basics of electricity and will expand upon various electrical components typically found on ski lifts. Bring a calculator.

Introduction to the Usage of Digital Multi-Meter

Mike Taylor - Keystone Resort

You must bring a multi-meter to this class.
This course will cover the workings and usage of digital multi-meters.

Troubleshooting Comm-Lines and Mechanical Deropement Switches

Mike Taylor - Keystone Resort

This course utilizes a mock comm. line to demonstrate what type of faults can occur and how a digital multi-meter can be used to diagnose electrical problems.
Prerequisite for this course is E-1 (Introduction to Basic Electricity) if one is not familiar with electrical power flow

Overhead Comm-Line Installation

Mike McMahon - Breckenridge Ski Resort

The presentation will be a hands on introduction to installing a comm-line. The presentation will show the steps needed to pull in a new comline, how to tension, and then how to "cut-in" a boot.

Hands-On Lab – E-12 Comm-line Installation class is a prerequisite.
Each lab will be a hands-on session with 4-6 people. You will install a section of comm-line, tension it up and then cut in boot. 2-3 lab sessions will be offered.
Sign up during E-12 class.

Using Vibration Analysis and Infrared Thermography to Monitor Machinery Health

Tim Williams - Vail Resorts, Inc.

This course will look at the benefits of Vibration Analysis and Infrared Thermography as technologies to include in a comprehensive preventive maintenance program. We will cover the basics of vibration analysis, the frequency spectrum and time waveforms, and the signatures of general faults such as misalignment, unbalance, gear mesh, bearing defects, and electric motor problems. We will also look at how Infrared technology can be used to diagnose electrical issues and prolong machinery life.

Lift Electric Roundtable

Todd Ruoff - Vail Mountain

Panel with Bob Mcdonnell
This is an open forum for all those who practice the "Dark Art of Lift Electronics". All skill levels are welcome. We will discuss all flavors of Lifts, Snowmaking, and other electrical challenges. Please bring your questions, ideas, and anything else you would like to talk about.

AC Motor Fundamentals & Best Maintenance Practices

Josh Brown - Integrated Power Services

Primary issues that will be covered are basic electric motor maintenance and A/C motor fundamentals. Intended audience would be maintenance personnel and reliability engineers. Takeaways from the class would include history of A/C power, best maintenance practices, and A/C motor fundamentals.

Fuseology: Overview, Application, and Selection

Bruce Dube - Intermountain Fuse Supply

Attendees will be given a working knowledge of fuses and the proper selection and sizing for various applications and situations. The presentation will include a brief open book quiz and several fuse selection and sizing problems for common applications Class Limited to 25 participants.

Lightning and Surge Protection for Ski Lift Operations

Joe Lanzoni - Lightning Eliminators & Consultants, Inc.

Lightning can interrupt normal lift operations and damage related lift equipment. This presentation will explain how lightning forms and how electrical surges are created. It will also cover various lighting and surge protection equipment and techniques. And because grounding is an inherent part of lightning protection, and grounding is difficult in rocky locations, it will also cover grounding principles, techniques and test methods.

Low Voltage Control Circuits 3-Hour Class

Bruce Wyman - S-K-I Electric

We will start with the symbols of the different electrical components and start to add the lines (wires) that connect them together forming series and parallel circuits resulting in a circuit diagram. The inter action of external control devices actuating the relays contained in the above circuits combine to control the electrical functions of the lift. As more components are added the basic circuits will come to light. The protocols for the layout of circuit diagrams will be explained and how to start to trace a circuit through a drawing.

D.C. Drives

Bruce Wyman - S-K-I Electric

This class will go back to the basics of D.C. Drives. You will learn the fundamentals of D.C. Drives and see the relationship between voltage, current, and speed of D.C. drives. If you have this type of Drive, a must see.

Rope Position Detection (RPD) - Doppelmayr Systems

Mike Taylor - Keystone Resort

This class will explain how proximity switches produced by Efector are utilized for haul rope location by Doppelmayr. The two methods of deropement detection (Matrix and Individual tower) will be explained along with the troubleshooting of each system. There will be a demo of the Efector switch showing the function of the sensor.

CPS's - Troubling Shooting Tower Faults

Mark Thorpe - Snowmass Ski Area

This session will address Poma style C.P.S. faults including;
- *Introduction to Trouble shooting*
- *3-wire switches - 4-wire old style switches;*
- *4-wire new style switches - 5-wire newest switches.*

Bearing Protection for Electric Motors

Randy Keener - Torq Engineering

Panel: Tom Leunig & Randy Keener
This presentation will cover the common causes of bearing failures in AC & DC motors resulting from induced electrical currents, especially prevalent when VFD drives are installed. The attendees will learn how to identify these bearing failures and how to address the problem. Identifying and implementing a solution will provide significantly reduced downtime and major cost savings from reduced motor failures. The presentation will feature a "hands on" format and demonstration.

Electrical Switches – Bridging the Gap Between Electrical and Mechanical

Matt Steel - Powder Mountain

Without switches, the electrical control system wouldn't know what the mechanical system is doing. This session will look at different types and applications of mechanical, electro-mechanical and electronic switches. We will also cover switch logic, schematic symbols and troubleshooting.

MAINTENANCE CLASSES:

Introduction to Wire Rope and Inspections

RJ Knight - Knight Equipment Co.

Panel with Justin Knight
Terminology, constructions, use;
How wire rope is made;
Basic inspection. What to look for during you weekly and monthly inspections.
ANSI B77 Requirements.

Fastener Safety and Application Procedures

Mike Burgin - District Sales Manager

Panel with Todd Nelson, Territory Sales Manager
Common causes and correction of fastener failures. The importance of matching the strength of fastener components, and recognized fastener standards. We will review recommended torque settings for fastener systems. Intended audience-Anyone that works on equipment or lift maintenance personnel. No specific tools, only requirement is their attention and wanting to learn more about these items.
Approx 30 people

Luff Rigging

Troy Frutiger - Vail Mountain

Rigging in the motor room can present some unique challenges. Low clearances and lack of overhead lifting beams are just a coulple. Topics covered are Drifting loads form point A to point B, Sling tension calculations, D/d ratios, Leverage calculations, and Pulling force calculations.

Lifting, Pulling & Rigging Basics

Mike Stephenson, P.E. - Stephenson Engineering, Ltd.

Seasoned lift mechanics learn to appreciate the safety aspects of lifting, pulling or rigging and understand the importance of knowing the weight of the object or load on the line before attempting to lift or move it. In far too many cases the technician simply guesses the load and hopes the rigging is up to the task, which can be a formula for disaster. This class will illustrate some simple rules-of-thumb, techniques to determine loads, methods to approximate the weight of objects and an explanation of the use of center of gravity for lifting and rigging. This class is intended for the novice lift technician, but veteran mechanics may also benefit from a refresher course. Bring your smart phone calculator to help solve some of the problems presented in the class.

Sheave Assembly Loads for Tower Rigging

Mike Stephenson, P.E. - Stephenson Engineering, Ltd.

Any mechanic who has experienced a near miss while rigging a tower to service the sheaves appreciates the importance of knowing the rope load before trying to lift it from the sheave assembly. Tower rope loads are usually provided by the lift manufacturer for a new chairlift, but how do you determine these loads for older lifts with missing or lost records? This class will review examples of incorrect rigging techniques and provide a simple method to determine the tension in the haul rope at any given tower to then derive the assembly load using the break-over angle of the rope over the sheave assemblies. Bring your smart phone calculator to help solve some of the problems presented in the class.

Old School Machinery Alignment
3-Hour Class

Brian Reihe - Vail Mountain

Panel with Joe Klosterman Beaver Creek Lift Maintenance.
This class is by Mechanics for Mechanics, this is a hands-on open discussion class, and will be using an alignment simulator for instruction. Topics include; Types and causes of misalignment, alignment methods, Alignment preparation, soft foot. Moving the machine, simple alignment techniques, precision alignment. Please bring your phone with a calculator. Limited to 18 participants. Sign up durring check in.

Old School Cardan Shaft Alignment
3-Hour Class

Brian Reihe - Vail Mountain

Panel with Ryan Portz, Vail Resorts Lift Mechanic.
This class is by Mechanics for Mechanics, This is a hands-on open discussion class, taught with an alignment simulator, Topics include; Cardan shaft overview, universal joint terms and operation, soft foot types and correction methods. Types and causes of misalignment in Cardan shafts, alignment methods for Cardan shafts, alignment preparation. Moving the machine to correct alignment, simple alignment techniques, and Cardan shaft operating angles and velocities.
Limited to 18 participants, sign up during check-in.

Getting a Grasp On Fasteners:
Confused and Bewildered, You Are Not Alone

Bob Lund - Fastenal

General assembly and maintenance teams will learn the importance of understanding lubricity in fastener assembly. We will discuss locking methods, both chemical and mechanical… what works and what doesn't. The general theme will be: Get it tight, keep it tight and understand corrosion, all of which are much harder than you would expect.

High Pressure Hydraulic Safety Training

Rodman Flint - Enerpac

A Safety Seminar is a 1-1/2-hour semi-hands-on high-pressure hydraulic safety training class designed to bring awareness to common safety hazards of both reportable/non-reportable (OSHA & MSHA) conditions and product seen in the high force tools industry. The seminar discusses safety concerns when using 10,000psi equipment. Class participation is required in identifying and determining common misuse and proper set up. We also conduct a brief question & answer session at the end providing feedback to participants on current issues they may be experiencing. Maintenance, welding, electrical, metal working personnel will use our products. No tools are required to attend.

Artec Machine Grearbox Tips and Tricks

Nick Chieppo - Artic Machine Systems

This presentation will be an overview of gearbox history and theory including maintenances practices and modes of failures.
The emphasis is on customers specific unites and questions with tips on preventive maintenance.

Belt Drive Optimization and Maintenance

Ben Huntoon - Gates Corporation

Maximize the performance and life of belt drives. Learn about the different types of belts and their application. Learn the best ways to inspect, install, and maintain belt drives. This training is for anyone that works on belt drives.

Introduction to Brakes - 101

Michael Lane - National Ski Areas Association

This class will look at the different types of brakes, their physical characteristics, components, nuances, and adjustments. The session then applies the different brake types as they are used on ropeways and attempts to give an overview to help you understand their operation and how they relate to the requirements of the B77.1 Standard.

Gearbox Inspections and Failures

Bruno Pfister - Kissling AG

We will present different types of gearboxes, introduce on how to inpsect them and talk about the gear failures as well as bearing failures which can be found.
This class is for mechanics or people interested in mechanics which want to gain more experience on gearbox inspections and failure evaluation.

The Basics of Hydraulic Mechanical Advantage

Troy Frutiger - Vail Mountain

This is by mechanics for mechanics. Basic math skills will be reviewed; including calculator use, basic algebra and basic geometry. The crux of the presentation will be centered around Pascal's Law and how it applies to the use of hydraulic rams. Please bring a calculator, your phone is fine. This is a great refresher prior to Grant Ellis's "What's my tension? Don't have line calcs? We can help!" class.

Hydraulic Controls Brake Tension
3-Hour Class

William Hartman - Skytrac Inc.

Training on hydraulic components, assemblies, diagrams, troubleshooting and theories for brake and tension systems.
3-Hour Class

Bearing Maintenance & More - From The Manufacture

Michael Wernke - Schaeffler Group - FAG, INA, Barden

Panel with: Michael Wernke, Shawn Dunn
Have you ever wondered how to get the most out of your bearing installations? This class covers the fundamentals of achieving long bearing life, identifying and troubleshooting failures and operational issues.
Bring your questions and examples (bearings, pictures, stories) to class for an interactive roundtable session with your real world examples.

Concerned About Aging Lifts and
Other Mechanical Equipment?

Neville Sachs, PE, PLLC -

Many of our ski lifts are over thirty years old and much of our other machinery is aging. This presentation reviews the common causes of mechanical deterioration, what we can do to prevent further degradation, and some steps we can take to improve their mechanical reliability. It will include a section on how corrosion occurs, how it affects fatigue strength.

Failure Analysis of Ski Area Mechanical Equipment
With Emphasis on Shafts and Fasteners

Neville Sachs, PE, PLLC -

The presentation starts by defining and showing examples of the physical, human and latent roots (causes) of failures. It then goes into detail about how to diagnose the physical causes and includes a number of hands-on examples. The last portion of the class is a review of several ski area failures and how their diagnosis can lead to preventing additional equipment problems. Students are encouraged to bring failed parts to the class for hands-on analysis.

How and Why Accidents Happen

Neville Sachs, PE, PLLC -

A review of the common causes of accidents looking at the human errors and systematic procedures (or lack of them) that cause accidents. In the class we'll discuss a number of practices that we can take both as individuals and supervisors to reduce the probability of future accidents. Included will be some ski area examples..

Loctite Workshop

Rick Stanley - Henkel Loctite

The Loctite workshop will address the following: elimating redundant repairs, minimizing chronic equipment failure, build equipment reliability from the ground up, lower maintenace costs, identify tools that make maintenace tasks easier and learn how to use Loctite tools through practice.

What's My Tension?
Don't Have Line Calcs? We Can Help!
3-Hour Class

Logan Still - Vail Mountain

Panel with Logan Still, Lift Maintenance, Vail Mountain
We will look at how calculate the tension on a haul rope at the location where you plan to install the rigging for a splice or project. Both hydraulic and counterweight systems will be reviewed and how to determine the initial tension in the rope plus the additional vertical component/calculated rope weight and chairs for the location along the lift line. Please bring your cell phone with a calculator.

GENERAL CLASSES:

Maintenance Training Guideline

Michael Lane - National Ski Areas Association

Update on the Maintenance Guideline that NSAA is working on to help areas with their training need for their maintenance training program.

Knots - Slings - and Other Things

Sid Roslund - National Ski Areas Association

With Greg Baldquci, Park City
"Knot" is a term used to loosely describe any one of many ways to attach (cordage, rope, webbing) to an object. You only need to know about five basic knots that will hold the load and then come undone easily (without using a knife). We will also do an end splice and a back splice on a rope, a "Flemish" eye in a wire rope and build some other interesting slings.

Work Carrier Safety

Brook Kasman - Stowe Mountain Resort

Panel with Travis Elmbald - Keystone Resort
You load them up and climb on, but have you done your homework?
How much can they carry, have you done the grip maintenance, communication protocols, lockout-tagout? This open discussion will start with these items and end with a discussion of the changes for Work Carriers in the new ANSI B77.1-2017.

Leitner-Poma of America - Manufacturers Session

Rod Stocking - Leitner-Poma of America, Inc.

Interactive discussion with engineering and service staff regarding the products and services we offer, annual and periodic maintenance procedures, problem resolution. Session intended for current and prospective lift users/operators. Jeremiah Frazier-Electrical Service Engineer, Jeff Copeland-Design Engineer, Nelson Tusberg-Design Engineer, Charles Atchison-Electrical Engineer, Wyatt Breed-Sales Representative,

Doppelmayr USA - MFG Session
Planetary Gearbox Concepts

Paul Ehlert - Doppelmayr USA, Inc.

Panel with Gary Mayo and Daniel Richer
We will discuss the following:
- Types of CAT planetary drives - How to identify. important differences for maintenance;
- Failure modes - What has happened to others, what have you experienced:;
- Accessibility without removing the rope - Safety precautions;
- What to inspect and how;
- Other failure prevention measures.

Basic Mathematics for Lift Maintenance and Operations (Just Another Tool)

Darren Brungardt - Colorado Mountain College

Team Taught with Brooke Kasman.
Bring a simple calculator +-/ SQ Root (Check your cell phone)*
Introduction to using math as a tool in lift maintenance and operation.
Need a more complete description.

Ski Lift Math and Physics

Sid Roslund – National Ski Areas Association

Bring a simple calculator +-/ SQ Root (Check your cell phone)*
This class will look at the math and formulas you need for routine operations and Maintenance of ski lifts. The class will go through the building blocks of area, volume, speed, time and then put them together with practical examples of usage. We will also look at calculating uphill capacities and when they don't match the theoretical, how to do calculations to see if the speed, spacing and other parameters are correct.

Advanced Ski Lift Math and Physics

Michael Lane - National Ski Areas Association

Bring a simple calculator +-/ SQ Root (Check your cell phone)*
This class will move beyond basics and will start with fundamental tensions, tower/sheave loading, rope angles, radial acceleration, grip slip forces, torque and horsepower requirements as a few examples. From these aspects the class then can expand on drive terminal locations, loss of tension issues, simple rigging and lift inertia.

Lift Maintenance Safety 101 ½

Frank Fidler - Steamboat Ski and Resort

Panel With Mike Twede
Working safely in a dangerous environment. This session will look at preventative measures and procedures that can potentially reduce the exposure to risk technicians face as they perform maintenance on ropeway equipment. We will touch on the most dangerous aspects of our jobs with a slight emphasis on tower work. It will be a roundtable style session building
off of questions and comments.

NDT/UT Roundtable Discussion Emphasizing Ultrasonic Inspection for the Ski Industry

Greg Floor - Wasatch NDT LLC

Topics for the discussion will be scope standardization, longitudinal and shear wave applications,
specific ski lift parts that we inspect using UT and comparisons between analog and digital ultrasonic flaw detector equipment. This discussion is intended for those have received UT training
and are involved with UT inspection although a trainee may attend if their sights are set on future UT training. The instructor hopes that attendees will be able to contribute to the 'shop talk' that this roundtable will afford. Attendees are welcome to bring their UT equipment to use during the roundtable.

Detachable Mechanical Roundtable
What We Are Seeing?

Scott Uren - Keystone

This class will be an open discussion on what issues we are seeing on our detachable, and what tools, practices, and changes are we seeing/doing. There are some older detachables out there lets talk about the challenges everyone is dealing with to keep them going and what mechanics/management are doing to deal with the issues. What behind the scenes challenges are you seeing with all the new bells and whistles? No topic is off limits!! Be ready to bring your problems/comments to the class to help exchange ideas or problems for some good discussions.

Does This Happen At Your Area?
Older Fixed Grip Mechanical Roundtable

Scott Uren - Keystone

This session will initially look at the following issues, but will branch out as questions are raised.
- Spacing of chairs and removal of chairs on older lifts;
- Reduce Gauge bullwheel to tower alignments;
- Slip Testing of grips.

Adopting the New ANSI B77.1 Standard for Colorado

Larry Smith - CPTSB

What's new, what's hot and what's not, and how it all fits together for new and existing tramways.

How the New Tax Bill—and Federal Grants—
Dramatically Makes it Easier to Upgrade & Replace Lifts

Dave Byrd – National Ski Areas Association

This session is to educated lift department heads and other managers and dramatic changes to the Tax Code that was signed into law by President Trump in December 2017. We want to put this on managers' radars so they can talk with the CFOs, owners, and finance people to encourage them to leverage these key changes in the new corporate tax law to upgrade or replace aging lifts and other equipment. In addition, we will discuss the availability of federal programs under the Department of Agriculture's Rural Development grants and low interest loan programs, that can likewise be leveraged to help ski areas to gain access to very favorable financing for such equipment.

OITAF-NACS
Papers from the Silverton Symposium

Tom Scully - Safehold Special Risk

OITAF-NACS holds a Symposium every 2-years where Technical Papers on Ropeways are presented and discussed.
2 papers will be presented as an opportunity to experience the technical presentations.
Paper 1 - The Changing Culture of Chairlift Passenger Safety - Tom Scully
Paper 2 - Relocation of Track Cables in New York City - Sid Roslund

OPERATIONS CLASSES:

B77.1 - Operational Responsibilities Alignment of Your Documents with the New B77.1-2017 Ropeway Standard

Paul Rauschke - Colorado Mountain College

We will focus on the standard as it applies to operational responsibilities of your supervisors, operators and attendants. You and your staff need to learn, comprehend and speak the fundamental language of the standard for operations and record keeping. Alignment of the language of your ski areas documents incl. titles, job descriptions and responsibilities will be addressed. Participants are encouraged to submit "blind" copies of their documentation for use in class

Employee Satisfaction and Retention

Jessica Caskey - Taos Ski Valley, Inc.

Tips and tools to make you the most popular manager at the mountain ☺

Crucial Conversations

Jessica Caskey - Taos Ski Valley, Inc.

Water cooler talk and gossip isn't cool, it's cruel. Be cool...lean into conflict and tackle those tough conversations!

Leading with Accountability

Jessica Caskey - Taos Ski Valley, Inc.

Don't you hate when you ask for follow-up and it never happens? How about setting deadlines and they're never met? Or holding a colleague responsible yet they let you down? Don't be that person! Learn how to be a great leader through the practice of Accountability.

OSHA

Ashley Ryland - Taos Ski Valley, Inc.

Be an OSHA Champion. Make OSHA less daunting with our 2018 updates, tips for surviving an inspection and great ideas for setting your teams up for success!

Work Comp - From a Supervisor and Employee Perspective

Ashley Ryland - Taos Ski Valley, Inc.

We're here to remove the stigma of Work Comp! Join us as we walk through the workers comp process and learn how to share our warm and fuzzy side all while being compliant ☺

Lift Operations Roundtable

Jeff Marzka - Park City Mountain Resort
Mike Gierach - Crested Butte Mountain Resort

Wrap up the RMLA Conference by attending this class ! This session will serve as a sounding board for Lift Operations Supervisors and Managers to get answers to those troubling questions that have arisen over the past season. Bring your questions and problems and we can discuss potential solutions that other areas have tried. Have an idea for a class that you would like to see at a future Conference? This is a great opportunity to present your idea and get input from others in the Industry. Everyone is encouraged to attend.

SUPERVISOR CLASSES:

Leadership in Safety 3-Hour Class

Michael Walker - Park City Mountain

This discussion will include leadership lessons, mitigating risks, overcoming obsticals, and improving on wins and oportunities.
Part - 1 will focus on creating a safety culture. This starts with self awareness and how to set the tone for your team. Then we will discuss how to analyze your team and find the areas where change and influence can occure.
Part - 2 will be a leadership discusssion with safety being the focus. It will break down how to strategically asses risks and mitigate them, how your team's focus can lead to complacency, and how to manage safety policies effectivley. It will end with a discussion on evaluating performance, and utilizing that data to make improvements.

Hot Topics in Ski Area Liability

Mary Bozack - MountainGuard Insurance

This session will focus on a broad overview of current industry risk management and legal considerations that directly impact your departments. Review of cases that highlight industry issues and good investigation and documentation practices.

Small Ski Area Roundtable

Andy Birch - Ski Granby Ranch

This will be an open discussion to look at issues and potential answers for personnel involved with small ski areas.

Employee Wellness and Its Effects on Perfromance and Retention

Darren Northwood - Park City Moountain

Panel with Gary Hall, Lift Supervisor, Park City
We all struggle to staff every season and this puts a strain on the people who are working for us. How do we take care of those people? How do we keep them engaged? Employee wellness is not just about rewarding performance, it is about development, building trust, motivating and giving back to your employees. You are investing in your employees and this is proven to help with staff retention. We all struggle to staff every season and this puts a strain on the people who are working for us. How do we take care of those people? How do we keep them engaged? Employee wellness is not just about rewarding performance, it is about development, building trust, motivating and giving back to your employees. You are investing in your employees and this is proven to help with staff retention.