

Tuesday – April 14 – 9:00 a.m.

A-1 Introduction to Basic Electricity

Andy Pierce • AP Electrical Service, LLC

This course will cover the basics of electricity, circuits, electrical components, and expand on the equations used for electrical calculations. Bring a calculator or a cell phone with a calculator

A-2 Electrical Safety

Paul Gelinis • Burlington Safety Services

The class will cover the basics for electrical safety in the work place. Particular attention will be paid to defining a qualified person, risks of shock and arc-flash hazards, approach distances, personal protective equipment for electrical shock and arc-flash hazards and the consequences of serious electrical accidents. Material from the current OSHA standards and NFPA 70E-2015 "Standard for Electrical Safety in the Workplace" are used in the PowerPoint presentation.

A-3 Crosby Factory Training

Rick Nyles • The Crosby Group

The CROSBY GROUP will present this 4-hour "End User" rigging class. It will cover Risk Management and the basic rigging plan; Loads on rigging and the Rigging-Triangle; Application of hardware; Inspection of hardware; Application of slings; Inspection of slings. The class will also introduce and explain the Crosby Rigging apps. For your phone that can be downloaded.

This is an all day Class. Do Not sign up for "B" or "C" Classes

A-4 Does This Happen At Your Area?

Detachables Mechanical Roundtable

Mark Thorpe • Aspen-Snowmass

This Roundtable Session will initially look at the following issues but will branch out as questions are raised:

Cadence or spacing, gearbox and bearings, tires, Etc. Etc. Bring your service bulletins, as many times the manufacturers have a rep attend this session.

A-5 Sunkid Wonder Carpets

Maintenance, Operation and troubleshooting.

Conor Rowan • Star Lifts

Maintenance, operation and troubleshooting.

A-6 Evacuation Planning - Are You Ready?

Mary Davis • ASC B77 Evacuation Subcommittee

The impacts of lift evacuation is not limited to rope handling and belaying. Designed for employees from all departments and presented in a workshop format, this session will guide the participants through the process of assessing their plan for evacuation of lifts. It addresses the challenges of lift types, variables that impact the operations, and explores potential additional resources to draw upon.

A-7 Evaluating Snowmaking Efficiency and Performance

Ian Jarrett • HKD Snowmakers

At today's ski areas, there is no shortage of ways to utilize low energy snowmaking equipment and operational strategies to reduce energy costs and improve profits. The biggest challenge is striking a balance between snowmaking efficiency and an end product that insures a positive customer experience. We'll share concepts on how to quantify snow quality and evaluate the true economics of low energy snowmaking, as it relates to your trails and systems in the Northeast. Please join HKD Snowmakers for this educational and entertaining session.

Tuesday – April 14 – 11:00 a.m.

B-1 Mikel Carhart Series Circuit

Intro to Electrical Schematics/Drawings/Symbols

Bruce Wyman • S-K-I Electric

We will start with the symbols of the different electrical components and then add the lines (wires) that connect them together. 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.

B-2 AC Motor Maintenance

Tom Bates • New Hampshire Electric Motors

This course will show you how to maintain rotating assets at peak operating efficiency, giving you the tools you need to lower your maintenance costs and increase reliability. You learn how they run, what environmental and operating conditions do to electrical and mechanical components, and how to recognize early-stage problems - before they lead to motor failure.

B-4 Work Carrier Safety

It's Just Another Carrier-and You Are Along for the Ride"

Maynard Russell • MCR Services

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 proposed changes for Work Carriers submitted to the ANSI B77 Committee.

B-5 Conveyor Safety & Guarding

Sam Geise • Star Lifts

Panel with: Dave Kelley, Conor Rowan

Conveyor lifts appear deceptively simple, yet mechanics and attendants continue to become involved in entanglement accidents. The class will focus on the hazards associated with maintaining these lifts, with topics including entanglement prevention, electric shock and stored energy dangers.

B-6 Property Insurance Coverage for a Damaged Lift

Everard Hatch • Willis/MountainGuard

Panel with Dylan West, Steve Lawlor

We will discuss property insurance coverage for damage to lift equipment, types of coverage, causes of loss, methods of detection and documentation requirements.

B-7 Off Season Maintenance and Storage for Your Snow Groomer

Peter Craig • Prinoth

Everything you need to know to put your cat to bed and what to do/maint. required for the off season to have that groomer ready for next year

Tuesday – April 14 – 1:30 p.m.

C-1 Introduction to the Usage of Digital Multi-Meter

Andy Pierce • AP Electrical

You must bring a multi-meter to this class.

This course will cover the workings and usage of digital multi-meters.

C-2 DC Drives - Stone Age to Space Age

Bruce Wyman • S-K-I Electric

This class will start out with the basic concept of DC drives, and take you through the evolution of simple D.C. drives to the present day regenerative drive. We will look at how drives work, and the block diagram concept DC Drive design and construction.

C-4 Ball and Roller Bearings – Design and Operation

Neville Sachs, PE, PLLC • Sachs PLLC

- Historical background information about ball and roller bearings;
- Different types of bearings and where they are used;
- Design lives and how the lives are calculated;
- How bearings fail and descriptions of Hertzian and surface fatigue;
- L10 lives and the effects of loads;
- Lubricants and film thickness;
- The effects of water, dirt, and temperature.

C-5 Magic Carpet Conveyors

Dave Kelly • Magic Carpet Ski Lifts

Maintenance, operation and trouble shooting. of Magic Carpet Lifts

C-6 Lift Operations Roundtable

Jason Perl • Mount Snow Resort

Complete the first day of the Seminar 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.

C-7 Snow Cat Hydrostatic Drive Systems

Peter Craig • Prinoth

Everything you need to know regarding both Sundstrand/Saur and Rexroth hydrostatic drive systems. From basic maint, to fine tuning for optimal performance.

Wednesday – April 15 – 8:30 a.m.

General Session Jiminy Roundtable - Little Shop

Sid Roslund, Maynard Russell, Ross Stevens

With help from Insurance, authorities, and maintenance personnel. The year in review! What went "right and wrong," trends that have been noticed concerning Ropeways, and the people who maintain and operate them.

This session will immediately follow breakfast in JJ' Lodge.

SP-1 Introduction to Low Voltage

Electrical Department • Doppelmayr USA, Inc.

This course will give the participants the basic electrical knowledge to help them understand Doppelmayr Low Voltage circuits. It will be greatly beneficial for electrical apprentices and/or mechanics so they may trace and troubleshoot basic lift circuits. There will be hands-on sessions in the morning and afternoon, to apply and practice concepts learned. This is an all day session.

Limited to 20 participants.

Additional Cost is \$160.00 for materials and equipment.

This session will immediately follow breakfast in JJ' Lodge.

Wednesday – April 15 – 10:30 a.m.

D-1 Overhead Comline Installation

Dan Etman • Green Mountain Control Systems

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

Hands-On Lab - Comline Installation class is a prerequisite.

Each lab will be a hands-on session with 4-6 people. You will install a section of comline, tension it up and then cut in boot. 2- Sessions will be offered.

Sign up during class.

D-2 Basic Fuseology

Joe Baroli • Eaton Bussman Business

Discussion of fuses, construction, theory of operation, application and selection for the operation and maintenance of ski industry equipment.

D-3 Introduction to Wire Rope

JT Anderson • Mountain Wire Rope

Panel with Sid Roslund, NSAA and Sam Geise, Geise Engineering.

Terminology, constructions, use; how wire rope is made;

Basic inspection & Math (Broken Wires, etc) MRT;

ANSI B77 Requirements.

D-4 Bearing Basics - Numbering Systems, Styles of Bearings, Bearing Lubricants

Steve Green • Emerson Bearing Company

Numbering systems as they relate to bearing sizes, seals, and clearances, styles of bearings, and bearing lubricants.

D-5 Lift Gearbox Preventive Maintenance Techniques and Planning

Geordie Folinas • Artec Machine Systems

Panel with Bruno Pfister, Field Service Engineer

What can be done by resort maintenance. What to look for when doing a visual inspection.

Practical tips of how to inspect gearboxes.

D-6 Adaptive Awareness

Joe Hurley, Betsy Hurley • Bart J. Ruggiere Adaptive Sports Center

To inform people that do not have adaptive programs at their area what they might encounter when a person shows up to go ski or ride. We will give some examples of ways to set up the corrals to the lifts to make it possible for easier access.

D-7 Basic Ski Lift Math and Physics

Ross Stevens • Stevens Engineering

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 at ski areas. 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.

Wednesday – April 15 – 1:00 p.m.

E-1 Battery Maintenance and Care

Scott Tuttle • Sugarbush Resort

Definitions, types, sizes, maintaining, testing, series/parallel circuits, sulfation, and parasitic drain. The intended audience is all lift maintenance personnel. I hope to share insight and proper care so our lifts have the voltage they need to run and eliminate low voltage related "ghost" stops.

E-2 Lightning and Surge Protection: The Coordination of Technologies with Ski Industry Applications

William (Bill) Percell • Meter-Treater, Inc.

This presentation explores the applications for Surge Protection as it relates to Power Quality issues associated with operating systems in real world environments. Material covered will provide insight on what to protect, how to select the technology/protector and where to interface/install with specific emphasis on application/technology coordination. Discussions will include lift operating systems, ac and dc drives, proximity (PROX) switches, weather instrumentation, security systems (access control, video & alarm), plus computers and communications networks. Grounding and bonding principles will be reviewed due to their critical relationship to system performance and personnel safety.

E-3 Understanding Drawings and Blue Prints

Kirsten Ericksen •

This session will help you understand the box legends and the information provided. Also looked at will be the different types of views, sections, and details.

E-4 Failure Analysis of Mechanical Components With Failed Components segment 3-Hour Class

Neville Sachs, PE, PLLC • Sachs PLLC

1. *The multiple causes of mechanical failures.*
2. *A brief review of the physical properties of materials.*
3. *Comparing the features of overload vs. fatigue failures*
4. *Looking at a series of failed components, with the students diagnosing the causes for the failure.*

E-5 Retrofitting Lifts;:The Issues and the Economics

Carl Skylling • Skytrac Inc.

The issues involved in retrofitting a ski lift - such as line clearance, equipment compatibility, upgrade limits of old equipment, and the associated liability exposure will be discussed. An example of a retrofit will be presented with a cost/benefit, cash flow, and ROI comparison of options.

E-6 Adaptive Lift Evacuation Workshop

Mary Davis • ASC B77 Evacuation Subcommittee

Panel with Joe Hurley

Hands-on workshop working with typical adaptive ski equipment in an evacuation setting. An opportunity to explore adaptive evac procedures at various resorts.

E-7 Advanced Ski Lift Math and Physics

Chris Hanrahan • USDA Forest Service

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.

Wednesday – April 15 – 3:00 p.m.

F-1 Lift Electric Roundtable:

Mark Thorpe • Aspen-Snowmass

Panel with: Bruce, Andy, Don, Scott

This will be an open session to answer questions and discuss your electrical concerns and problems. Do you wonder if you are the only person having a particular problem? Ask about it in this session and you will probably find other with the same question.

F-2 Updating and Replacing Electrical Drives and Motors

Don Gerhard • Parker Hannifin SSD Drives Div.

Updating electrical drives isn't just a one-for-one replacement.

The physical, technical, and other considerations for a replacement will be discussed and explained, so you will be able to start a replacement with the proper information.

F-3 NDT Visual Inspections

Scott Shanaman • Aerial NDT Inspections Inc.

Visual Inspection (VT) is the most widely used method of NDT for ski lift component inspections. Scott will share his knowledge, experience, and techniques with lift mechanics to further aid and improve their visual inspection skills.

F-5 Formalized Lift Maintenance Training-

Where do YOU Stack Up

Michael Weise • Leitner-Poma Services, Inc.

Formalized Lift Maintenance Training - It's where many Ski Areas are heading. Come see how you can train, document and develop your Lift Maintenance Team to the next level. Please bring your Program's information to share with everyone. Feel free to offer suggestions, corrections, changes.

F-6 Summer Evacuation - It's Just Not the Same

Tim Bruce • Safehold Special Risk

Summer operations come with their own unique challenges and operational issues. Lift evacuation is a critical component of your summer risk management plan. Building from the updated NSAA Lift Evacuation Manual, this session will cover the unique challenges that areas are faced with and practical solutions to address those challenges. Accessing difficult terrain and insuring the safety of your guests and staff is only the beginning.

F-7 Modern Snowmaking Annual Maintenance

Garrett Poole • Techno Alpin USA Inc.

Diving into the details of modern snowmaking equipment, and why maintenance is important to having a successful snowmaking season. Topics include planning, budgeting, inspections, maintenance, spare parts, operation, and safety.

Thursday – 8:30 a.m.

G-1 Arc Flash Safety 3-Hour Class

Bruce Wyman • S-K-I Electric

The goals of this session is to discuss the tools and materials needed to build an effective Arc Flash Hazard Safety Program that meets the strenuous requirements of OSHA and the NFPA 70E. Keeping workers safe while working on or around energized electrical equipment is the foremost purpose of this training. We will apply the information presented in this course to your specific needs, circumstances, facilities, and equipment.

G-2 CPS's - Trouble Shooting Tower Faults:

Mark Thorpe • Aspen-Snowmass

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.

G-3 Lubricants and Lubrication - From the Well to the Applications

Neville Sachs, PE, PLLC • Sachs PLLC

- A little bit about the lubricants industry and refining;
- Explain the basics of how lubricants work in different applications;
- Discuss the important lubricant properties and additives;
- Explain what problems occur with lubricant applications;
- Suggest a procedure for calculating relubrication interval.

G-4 Doppelmayr USA Manufacturer Session:

Aging Lifts - The Iceberg Principle

Gary Mayo • Doppelmayr USA, Inc.

As in the causes of the infamous Titanic incident, what may be visible may not be as important as what lies "beneath the waterline"!

The earliest detachable lift installations in the United States have already surpassed the initial targeted life expectancy! Some have plans for retirement; most do not and are intended to run forever! What are the major concerns with aging lifts? What is lurking out there to sink YOUR ship?

Targeting the front line Mechanic, this informative and entertaining presentation is intended to provide insight into the need for long-term planning related to aging components and orphaned technology.

G-5 Lift Inspectors Point of View

Mike Nillis • State of Vermont

Winter season and spot inspections and summer season inspections.

Are You Ready? Doing your own Pre-Inspection.

Paper Work: NDT, Wire Rope Inspections, Switch Checks, Line Work

Do you know How to Test - Electrical Checks; Drives, Switches, Motor, Tacks, Brakes; Inspector Write Ups and Inspectors Bibles (Code Books)

Acceptance and Dynamically Testing and New Lifts or Modifications - What is Required? Employee Safety and Guest Safety

G-6 Introduction to Brakes - 101

Chris Hanrahan • USDA Forest Service

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.

Thursday – 10:30 a.m.

H-2 DC Motors A to Z

Karl Butz • Troy Belting

We start with the construction looking at the different types of rotors, stators, fields, risers, etc. We will then continue on with operation, regeneration types, maintenance, and inspections.

H-3 Gearbox Maintenance; Inspection and Overhaul Procedures

Nick Chieppo • Artec Machine Systems

This presentation will cover lift gear basics, troubleshooting, inspection and repair

H-4 Tower Alignment

Donnie Martin and Walt Read • Doppelmayr USA

As summer maintenance starts on towers, this class will look at maintenance and inspections from the foundation, servicing the roller batteries, to alignment. This class will motivate everyone with things to think about, and look for while performing this years line work

H-5 ANSI B77.1

Proposals for the Next Revision in 2017

Sid Roslund • National Ski Areas Association

The ANSI B77.1 Standard was approved by ANSI May 2, 2011. The next required revision is due in 2016. This session will review proposals that the committee is looking at to revise the next standard. This will be your chance to find out what the ASC B77 Committee is discussing and add comments and opinions.

H-6 Department Communications

Jason Perl • Mount Snow Resort

Description coming