

# STATE OF NEW HAMPSHIRE



## Passenger Tramway Safety Board



Office: c/o N.H. State Fire Marshal's Office  
110 Smokey Bear Blvd., Concord, NH  
Mailing Address: 33 Hazen Drive, Concord, NH 03305  
603-223-4289, FAX 603-223-4294

Mark Petrozzi  
Chairman  
Term exp. 6/20/24

Stanley Judge  
Member  
Term exp. 6/20/23

Kris Blomback  
Member  
Term exp. 6/20/22

Steve Howell  
Member  
Term exp. 6/20/25

# NEW HAMPSHIRE PASSENGER TRAMWAY SAFETY BOARD MEETING MINUTES

## November 15, 2022

Gunstock Stockade Lodge, 719 Cherry Valley Rd, Gilford

### FINAL

#### Attendees:

Board Members: Mark Petrozzi, Chairman  
Kris Blomback  
Steve Howell  
Stanley Judge

NH DOS: Briggs Lockwood Chief inspector  
Scot Woolfenden Inspector  
Roxie Beall Administrative Support

Industry: Ross Stevens Stevens Engineering  
Ashvin Ghurburrun MND  
Tim Smith WVSR  
Erica Dickerman USFS  
Patrick McGonagle Gunstock

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### **I. Call to Order:**

Chairman Petrozzi called the meeting to order at 10:07 am and announced this meeting is being recorded.

### **II. Reading and Approval of Minutes:**

Chairman Petrozzi called for the reading and approval of the minutes from the last meeting August 3, 2022. Amend agenda Item 2 to reflect reading of August 3 minutes, not June 24<sup>th</sup>.

Motion made by Stanley Judge  
Seconded by Kris Blomback

Discussion: On page 7, the sentence before E, correct typo "every" to "ever".  
All in favor of approving minutes with recommended change. Unanimous.

### **III. Old Business:**

- A. Waterville Valley: Additional submittals for the Application for Construction for new MND Six Place Bubble Chairlift.

Ross Stevens states this is Phase 4 of the partial submittals. This one is electrical and also includes one supplemental section on carriers for the vehicle.

The electrical contains all the electrical schematics, parts identification for various components used, and safety related control functions which is the analysis of electrical components & what risks they might pose if they fail.

Risk analysis is done in European format. Ross Stevens states it correlates with ANSI. ISO standards that MND & Nidec uses are the same as ANSI Annex J.

Chair Petrozzi asks Ross to confirm that his letter from Nov. 2 basically states that. Ross Stevens confirms that he and Will Taylor went through electrical

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schematics, safety analysis and software component, and it is all compliant with ANSI.

Under the Safety Related Control Functions tab, you will find the letter dated Oct. 18<sup>th</sup> from Nidec (the manufacturer of the electric drive control systems) that states they conform with ISO. Other ski areas such as Wildcat, Sunday River and Catamount in MA/NY have the same equipment. Most is over-engineered (in a good way).

Briggs Lockwood questioned how the controls work. Are there several options for stop buttons, one of which is labeled Emergency Shutdown, which has capability to stop as defined in the book, in addition to the multiple programmed control stops it probably has built in.

Ross Stevens responded that it has multiple controlled (gradual) stops programmed throughout the drive that provides more levels of warnings built in throughout the Nidec circuitry, but also has the normal electrical stop (ramp down), and an emergency shutdown that kills all power. Ashvin Ghurburrun confirms. Briggs Lockwood gives history and reason for need to define what "emergency shutdown" means in this case.

Ross Stevens says acceptance test procedures requires all expected requirements are met. Graphs will be included in as-built acceptance test report. Every combination will be tested: Eg. accels, decels, curves, uphill loading, downhill, electric drive, diesel drive, auxiliary, coasting stops. Performance of the lift will be well documented.

Briggs Lockwood asked about brake testing process. Assuming they have established internal friction at 13%, apply brake, measure load using electric brake. The acceptance test will 1) verify estimates are accurate, 2) provide a procedures manual for maintenance to use in the future.

Ross Stevens presented an "All About Nidec" book, which offers information on what to expect for all the different functions, will be given out with the as-built.

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Briggs Lockwood asked if the same procedure will be used for the 7 year test. Ross Stevens states it would be fine to use for 7 year test, just increase to 110% load to meet future requirements.

Side discussion regarding the need to change passenger weight load requirements. Doing so would create the need for significant design changes, however, this has not been changed in 20 years and is not anticipated to be considered anytime in the near future, even though many are marginal and not operating at full potential because of the heavy loads of passengers/gear.

Briggs Lockwood asked about anti-collision systems. Is it a conventional counter zone system? Ashvin Ghurburrun said that yes, it works the same. Ross Stevens added that there are more warning sensors built in. Lists control functions then lists description of what it does. Several levels of protection, monitoring, sensors, warnings, shut downs; tensioner with redundant sensors that monitors ram pressure, overall sensor that measures comparative pressure between two rams. Over the top engineering, but very well done.

Procedural discussion that Briggs Lockwood and Ross Stevens will work to complete remaining blanks on original application to wrap up all phases now that all the information is on the table and most of it installed.

Motion to accept Phase 4 as presented made by Steve Howell.  
Seconded by Kris Blomback.

Discussion: Ross Stevens points out discussion is still needed for vehicle (last tab, back of book). The preliminary packet provided marketing information and pictures but nothing else because it was still in design. Now this packet (last tab, back of book) is providing new detailed drawings on the vehicle, bubble, carrier, grip & hanger, and detail on the grip. Work chair has not been submitted at this time, but it will be in as-built documents and includes load rating. Grip and hangers will be the same as for passenger carriers.

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Erica Dickerman wanted confirmation that this is original design work that was not in previous submittal, but it is not new, just more detailed. Ross Stevens said that it was not previously shown in other phases, so they are including it here.

Briggs Lockwood asked if it can go in reverse?

Ross Stevens confirmed that hangers are reversible so it can go in both directions.

Scot Wolfenden asked if there was no high speed rollback at all or just on brakes.

Ross Stevens states it has double bullwheel brakes, anti-rollback brakes.

Scot Wolfenden confirms that it has an "e" brake and a rollback?

Ross Stevens affirms on the bullwheel, no high speed rollback.

Chair Petrozzi asked about speed capability of auxillary in terms of speed?

Ross Stevens responded 1 meter per second, .8 meter per second carrier speed in station (evacuation only)

Scot Wolfenden asked if bubble locks down automatically

Ashvin Ghurburrun responded that customer must pull down and can put bubble up at any time. If empty, the bubble comes down.

Scot Wolfenden asked about wind monitoring. Is there going to be wind meters monitoring wind speed and will automatically slow lift down.

Ross Stevens and Ashvin Ghurburren confirms that Yes, absolutely. Speed protocol for lift. Line functions under acceptance test. Ashvin Ghurburren says wind speeds can be found in Phase 2, foundations.

Briggs Lockwood to Steve Howell – Does your new lift monitor wind speed? Was there a time where you monitored the wind conditions so you could program the alarms? Steve Howell responded that no, they were pre-programmed at the acceptance test. We tend to shut the lift down, not because of the wind speed, but because the alarm is going off.

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Ross Stevens – in addition to the acceptance test procedure, page 3, in bold, there are additionally 3 other procedures – MND Commissioner report, Nidec, safety related control function list is verified. Then we start the conventional preliminary lift test.

Steve Howell asked about overspeed monitoring test is at 110% and at threshold 120%. Sometimes there is a second threshold at 115?  
Ross Stevens responds there may be lesser warnings at say 108% or 104% but this one is 110% and is the emergency shut down and can be set at whatever you want.

Scot Wolfenden asked what detects a rollback, an encoder? Yes.

Kris Blomback – confirms that board is relying on Ross Stevens that this project meets ANSI B.77 code and this design book in its entirety fulfills the application for construction requirements.

All in favor of approving the motion for Phase 4 with all supporting documentation signed and stamped by Ross Stevens that it meets all codes as they may apply. Unanimous.

#### **IV. New Business:**

##### **A. Application for Construction: Gunstock conveyer**

Patrick McGonagle and Ross Stevens presented application for carpet lift, including acceptance test procedure and Ross Stevens' certification. Moved and reconstructed from a lift that was twice as long and steep. 6.8 horsepower required but this one has 15 horsepower motor.

Patrick McGonagle – Length before was 300 ft. It is now ½ length & ½ slope approx. Used same installation and design parameters.

Stanley Judge – After reviewing, it appears to meet requirements. Seems to cover machine itself. Are there any other ancillary things that needs approval?

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Briggs Lockwood –One side has railing, they will need to add snow to build up on one side. Partly design, partly operations.

Ross Stevens – letter qualifies & attests to. Many times he doesn't do acceptance test, especially a carpet. May or may not need to skirt or put railings on the carpet, but those items are included in the letter.

Chair Petrozzi – Based on letter dated October 19<sup>th</sup>, stating, stamping and signing is what we need as a Board in order to approve the project.

Chair Petrozzi asked if they are intending to skirt it?

Patrick McGonagle responded that yes, they are intending to skirt it. The intent is to leave it open until installation is complete to allow accessibility, then vertical plywood will be placed and then build up to the walkways.

Ross Stevens comments that some places prefer angled plywood rather than vertical.

On site relocation of conveyor with changes.

Motion made by Stanley Judge to approve the application for construction of Gunstock conveyor.

Seconded by Kris Blomback

Further discussion: None

All in favor. Unanimous.

B. Application for Construction: Waterville Estates, Addition of Lifting Frames to existing chairlift.

Briggs Lockwood provided background for Rich Combs, who is in Tennessee at the moment. Original lift was built in 1969 by Stately. Sky Trans has been selling lifting frames for years. Engineering was checked.

Chair Petrozzi asked if there is a stamped letter.

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Briggs Lockwood says the drawing is stamped.

Motion made by Kris Blomback to approve application for construction for adding lifting frames to existing chairlift, Tramway 115, at Waterville Estates pending receipt of stamped letter of acceptance letter and design certificate.

Seconded by Stanley Judge.

Discussion: Design certificate is not required at the application but prior to registration. Public facility must have stamped within the jurisdiction the design is for.

Chair Petrozzi asks for a note to be made to change rules to specify that a stamped letter is required at the application phase.

All in favor. Unanimous.

### C. Discussion: ANSI B.77.1 2022 Standard.

Briggs Lockwood presents a copy of the standard that has the changes highlighted. Chair Petrozzi stated that a summary of changes for 2022, similar to what has been provided in the past (2017), would be helpful.

Ross Stevens states the electrical and conveyor changes are substantial. Mechanical is not a big deal.

Briggs Lockwood states the work chair section has a lot of red ink. Ross Stevens confirms there are a lot of changes to that section.

Briggs Lockwood states Annex J (safety related control functions) has a lot of red ink also. Ross Stevens says that is reflective of the many electrical changes. Changes to Annex F, the Fire and Fuel Handling sections. Previously only 2 sections were adopted, not Annex F in its entirety. State of NH grandfathered almost all of the rest of Annex F. This means that a lot of the lifts are still operating under the grandfather clause and may be affected by the changes in Annex F that were previously not adopted.



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Does this Board have the authority to carve out these exceptions?  
In proposal for rules, we state we want to adopt 2022 rules with these amendments and list out the amendments to include. Then they must still pass legislative committee.

Resorts on National Forest land who accepts / adopts rules as written without amendments.

Kris Blomback asked about how Waterville Valley would be handled.  
Briggs Lockwood said rules say they need to comply if attached to an occupied structure. Define "occupied" required.

Kris Blomback related to occupancy load?

Ross Stevens related to occupancy use.

Discussion regarding situations that might affect occupancy use and applicable rules.

Erica Dickerman states that current rules as written without amendments. public /private interface will fall under National Forest and therefore would need to meet strict ANSI code. Eg. Half lift cannot run separately so it is managed as a whole, not split.

How many lifts fall under National Forest lands in NH? Estimated 30 or so lifts.

Side Discussion: Ross Stevens proposes Erica Dickerman of US Forest Service be part of the Tramway Board as we need consistent representation for USFS. Briggs Lockwood states to put on next meeting agenda for discussion.

Erica Dickerman – Eg. Loon. Has a year to meet 2022 standards even if Board accepts standard changes with amendments.

Briggs Lockwood – Review new books. He will request summary and get it out to everyone. Then it will be up to the Board what parts to adopt.

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Kris Blomback suggests that ski areas should be made aware that this is coming down the pike so they can be prepared when they need to meet the new standards. Ross Stevens states Colorado has been enforcing everything from newest standard/ safety analysis this year.

Briggs Lockwood discusses "hot work" definition, anything that makes a spark. Prohibition against doing hot work on a lift that is operating. Ross Stevens points out that many rules become obsolete very quickly and it is important for definitions not to be ambiguous. Briggs Lockwood encourages everyone to consider the intent and consequences behind the new standards so that the proper exceptions can be considered and included in the language when submitting the amendments.

Ross Stevens also suggests that Briggs Lockwood or lay people/ ski operators should be on the board of the ANSI committee so things like this can be considered as they are creating the newest standards.

Chair Petrozzi – maybe add provisions or language such as "applicable except in emergency situations"

Stanley Judge gives Forest Service history. Originally standards were adopted in entirety. Then each state opted to adopt a variation of the standard. Goal was to get the complete standard adopted. Then locally would use ANSI standard plus administrative rules which were the additions, exclusions or adjustments that points to the authority having jurisdiction.

Chair Petrozzi – The Board is responsible for what is in the Passenger Tramway Rules which may detract or add to ANSI requirements.

Ross Stevens – still have additional standards to consider. Eg. OSHA

Scot Wolfenden – As inspectors, we have to inspect under this standard and the administrative rules. Not our job to hold to higher standards, just to Tramway Administrative Rules & NH standards. Try to inform resorts of other standards

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Tramway may be aware of that need to be met but not our job to inspect for those.

Everyone to review 2022 Standard and plan to discuss at future meetings.

### **V. Next Meeting Date:**

Briggs Lockwood – Nothing currently outstanding for next meeting, possibly Granite Gorge

Ross Stevens – About to submit several applications in next couple of weeks for Granite Gorge, including a chairlift, 2 conveyors and wire ropetow to bring up to 2017 standards. Some of that work has been done. Will submit application, along with list of upgrade requirements that he made.

- December 15, 2022, Time?, Location TBD, probably Gunstock

### **VI. Adjournment:**

Chairman Petrozzi called for a motion to adjourn.

Motion made by Kris Blomback

Seconded by Stanley Judge

All in favor. Meeting adjourned at 11:57 am.

Respectfully submitted by Roxie Beall, 11/21/22, Amended 11/30/22