OPERATING ON THE APPLE VALLEY MODEL RAILROAD REV. 03-14-2017

A. INTRODUCTION

The Apple Valley Model Railroad Club has a HO- Scale standard gauge layout and a G- Gauge layout.

A1. **The Apple Valley Model Railroad HO layout** utilizes the DIGITRAX SIMPLEX DCC System.
A2. **The HO Apple Valley Model Railroad** is made up of two divisions
The Asheville Division
The Piedmont Division which includes
Piedmont mainline and Piedmont Upper Level
A3. **The Thomas "subsidiary**" is a two track DC layout for use of the Thomas Set.
A4. **The Pisgah Valley Central "subsidiary**" is an outdoor G Gauge layout located on the station platform. The G Gauge layout may be operated utilizing the Crest DC analog operating system with remote wireless control or internal battery with remote wireless control.

B. APPLE VALLEY MODEL RAILROAD OPERATION TYPES

There are six distinct operating situations on the Apple Valley Model Railroad defined below:

B1. **Saturdays and Special events** – These are typically considered as High Visitor Traffic and have more restrictive guidelines. Trains must be operated on both divisions during the hours the Apple Valley is open to the public. Normal Saturdays the AVMRC is open from 10:00AM to 2:00PM. Special events may have longer hours, usually 10:00AM to 4:00 PM. (Sections C-E)
B2. **Wednesdays** – intended for work on the layout and meetings. Wednesday 1:00 PM – 3:00PM is considered High Visitor Traffic. Members are expected to adhere to the operating rules/ guidelines. (Section C-E)
B3. **AVMRC Operating Sessions** occur on the Third Tuesday of each month, starting at ~ 9:00AM.(Section F)
B4. **Fun Night** is currently not scheduled. All rules/guidelines are waived. It is assumed that operators will take responsibility to protect club and personal equipment.
B5. **Junior Engineers Session** is scheduled for the Saturday following the AVMRC Operating Session (See B-3) and will start at ~ 2:00PM. See Section H for specific rules for this program. These rules are also available as part of the application form.
6. **G- Guage Outdoor Layout. (See Section G)**

C. APPLE VALLEY HO EQUIPMENT REQUIREMENTS

C1. The club has HO locomotives, rail cars and cabooses available for use of members.
C2. **Club and Personal HO equipment** must meet the following club standards for use on the HO Apple Valley Model Railroad. This requirement is to insure the highest level of reliability possible.

a. **HO engines** must be DCC equipped. There will be no Analog (Address 00) engines operated on the HO Apple Valley Model Railroad. Use of address 00 has been eliminated from the main system to avoid damage to DC equipment and adverse effects to the DCC system.
b. **All HO cars and engines** will have metal wheels. Plastic wheels are prone to build up material that is deposited on the rails, significantly reducing the reliability of the operation.
c. **All HO cars and engines** will be equipped with operating knuckle couplers, preferably Kadee. Proper height shall set using the Kadee height gauge available in the shop. Experience has shown the Kadee metal coupler to be more reliable than the available alternatives.
d. **All HO cars** will be weighted per NMRA recommendations. Car weight as defined by NMRA insures consistent level of operational reliability.
e. **All HO cars with metal truck frames** must have properly insulated metal wheels. This requirement is intended to minimize the number electrical short circuits that result in track shutdown.
f. **Thomas Layout** only utilizes DC equipment provided by the club

C3. **Club HO equipment** is periodically maintained to meet the club standards.

C4. **Club HO engines or cars requiring repair** shall be carefully returned to the shop and bad order slip filled out.
C5. **Repairs to Club equipment** will be done by a member of the club Repair Committee.

D. APPLE VALLEY HO MODEL RAILROAD OPERATING RULES

The following are the rules for operating on the HO Apple Valley Model Railroads:

D1 The **HO DCC system start up and shut down instructions** are posted at the Asheville DCC Command Station and the Piedmont Booster. These instructions must be followed. Failure to follow the procedures could result in the loss of control by the Command Station and necessitate reprograming of the system.
D2. **Piedmont Division mainline** shall have no more than FOUR trains at one time during times of High Visitor Traffic. This requirement is based on experience and is intended to prevent collisions and damage to club or personal equipment. .
D3. **Operation of more than one train on the Piedmont division is prohibited.** No train operator may operate or permit operation of more than one train at a time on the Piedmont Division.
D4. **Camera car/tv display may not be used** as only means of monitoring operation of the train.
D5. Asheville Division mainline shall have no more than ONE train per mainline during times of High Visitor Traffic. This requirement is based on experience and is intended to prevent collisions and damage to club or personal equipment.
D6. **Piedmont Division upper level** shall have no more than TWO trains at any time on the upper level. This requirement is established because of limited passing sidings and turning facilities (short engines only).
D7. **Operating a train on the Piedmont Division or Asheville Division during times of High Visitor Traffic**. You must check the Time Board to determine if there is an available slot. Place your magnetic name tag in the next available time slot. Time board is located on the Maple St. wall opposite the end of the Black Mountain/ Spartanburg peninsula. This procedure was incorporated to help maintain Rule D-2. This also allows members to schedule a time slot so they will get to operate if they have come to the club to operate.
D8. **When running on the HO Apple Valley Model Railroad** you are responsible for any damage you cause. If you allow a non-member to run your train you are still responsible and your name tag should appear on the time board.
D9. **HO Piedmont or Asheville Mainline Track Signals** You must observe and obey the track signals. On the Piedmont Division be aware of the train in front of you at all times. Piedmont Division signals are because of multiple trains on a single track mainline with the potential for collisions. Asheville Division signals are critical because of the possibility of trains crossing mainline tracks.
D10. **HO Piedmont Upper Level Track signals**. You must obey signals or take measures to insure safety of equipment in use.
D11. **Non -member HO equipment** should not be operated during times of High Visitor Traffic. The AVMRC's goal is to have trains running for visitors, allowing unknown equipment can cause significant disruption of train movement.
D12. Members unproven HO equipment should not be operated during times of High Visitor Traffic. The AVMRC's goal is to have trains running for visitors, allowing unknown equipment can cause significant disruption of train movement.
D13. **Setup tracks** are to be used to place HO engines and cars are on the layout. See D-12
D14. **Setup track locations** for the HO Apple Valley Model Railroad are indicated below. All setup tracks can have the power shut off during setup to avoid unwanted shutdowns due to shorts circuits. These tracks are clearly marked

Linwood Track 1
Hickory Interchange Track
Hickory Track 1
Spencer Track 1
Morganton Track 2
Spartanburg Track 1
Asheville Arrival and Departure Tracks

D15. **Setup tracks** should be kept clear at all times for the purpose of setting up trains so that they can be used for intended purpose. See D-14.

D16. **Required end of train identification** - All trains running on the HO Apple Valley Model Railroad will have a caboose, an operating EOT (FRED) or other readily identifiable last car. This requirement will identify a train that has experienced a mid train separation or mid train derailment

D17. **HO Piedmont Division Mainline train length** shall not exceed 9 feet. Engine(s), caboose or identifiable last car is included in the 9 feet. This requirement is set by spacing of signals, signal sensors and length of tracks available to park trains.

D18. **HO Piedmont Division Mainline train length** maybe checked by tape measure. Alternately white posts with red tops have been set near tracks at 9ft spacing.

18.1 The measuring locations are:

Hickory
Spencer
Morganton
Old Fort Siding
Spartanburg set up track
Black Mountain mainline and siding

D19. **HO Asheville Division train length** shall not exceed the length of one Asheville Yard A/D track.

D20. **Faulty equipment** must be removed from any Apple Valley Model Railroad trackage. Faulty club equipment should be taken to the repair location (See C-4). This requirement reduces the number of incidents during High Visitor Traffic times.

D21. The Operations Committee reserves the right to remove club or personal equipment that causes frequent disruption of operations, particularly during times of High Visitor Traffic.

D22. **First trains out** in the morning should include a track cleaning car.

D23. **Track cleaning cars** need to be cleaned periodically and when you finish using the car.

D24. **Parking a HO engine**, turn off the sound and lights. Common courtesy.

D25. **Parking a HO train**. Do not park a train on mainline tracks. Doing this could disrupt train operations.

D26. **Parking a HO train** on any HO Division siding or passing track. Train must not foul mainline tracks or yard lead tracks. This avoids collision or traffic disruptions during High Visitor Traffic times

D27. Parking acquired trains. Do not leave an unattended acquired train and active throttle on any HO Division track. Leaving trains unattended with throttle available has resulted in instances of runaway trains, particularly important during High Visitor Traffic times.

D28. **Finished running a DCC engine(s)** - You must properly dispatch the engine(s).

D29. **Operating other member's equipment**. You must get permission to move or operate other member's personal equipment.

D30. **RED TAGs** indicate cars have been assigned for Op Session use, may not be moved (See Sect. F- 1a)

E. TURNOUT OPERATION ON THE APPLE VALLEY MODEL RAILROAD

E1. Piedmont Division (HO)

a. **Linwood, Hickory and Spencer Yards turnouts** are powered and controlled from local panels.
b. **Piedmont Division Mainline Turnouts** are manually controlled using ground throws.
c. **Black Mountain Turnouts** are powered and controlled by panels at either end of the yard. These panels are located on the fascia between Black Mountain and Spartanburg.
d. **Spartanburg turnouts** are manually controlled.
They are manually controlled because of lack of space below the Spartanburg Yard.
e. Piedmont **Division Upper level turnouts** are powered.
They are controlled from local panels located on the fascia below.

E2. Asheville Division (HO)

a. **Asheville Division turnouts** are powered.
b. **Asheville Division mainline turnouts** can be controlled as follows:
b-1. From the Panel Pro panel located in the back corner of the Asheville Division Room

b-2. Utilizing a Digitrax DT300, DT400 or DT402 throttle. This option is not available to the UT4 users.

b-3. From local panels at Asheville Yard, Canton and Hendersonville

b-4. Turnouts may be operated from Dispatchers Panel in the meeting room during Operations Sessions.

E3. **Asheville Yard turnouts** are controlled from the Asheville Yard Panel

E4. **Hendersonville and Hendersonville Industry Area turnouts** are controlled from local Hendersonville panel. Mainline turnouts in Hendersonville can also controlled per Asheville Division 2-b

E5. Canton Yard and Canton Mill turnouts are controlled from one of two local panels. These panels are located on either side of the Canton Peninsula. During times of High Visitor Traffic members should limit use of the aisle panel. Do not leave it unattended and powered. Power to these panels is controlled by a switch on the panels that allows only one panel to function at a time. When changing from one panel to the other check to determine if turnouts have reset.

F. AVMRC HO Operating Session Rules

The HO Scale Operating Session has unique Rules and waivers or amendments to the General Rules as indicated by the following sub sections.

F1. **PREPARATION for Monthly Op Session** is conducted on the Wednesday and Saturday prior to the scheduled OP Session.

1a. **Red Tags** indicate that cars on that track have been assigned for Railop use.

F2. **A meeting** of all participants will take place at 9:00AM in the Depot Meeting Room.

2a. Any unique rules / situations shall be presented at this meeting

2b. Yardmaster and Dispatcher positions will be verified at this meeting

F3. **Train Manifests and Yard Switchlists** are prepared using Railop computer software. Switchlist are distributed to yard crews prior to start of operations. Manifests are given to train crew at the time of train assignment. See F-6-i

F4. **Rolling Stock** – Only club owned freight cars, passenger cars and cabooses will be used for an AVMRC Operating Session. Personal DCC equipped engines are permitted.

F5. **Yardmaster, Dispatcher, Trainmaster and Roadmaster positions** will be determined by the Operations Committee prior to the Session. These people will be notified by e-mail from OPS Committee Chairman or a Committee Member.

F6 Yardmaster, Dispatcher, Trainmaster, Roadmaster and Train Crew positions are defined below:

6a. **Asheville Yard Crew** may consist of 2 or 3 people who are responsible for operations within the Asheville Yard limits.

6b. **Black Mountain/ Spartanburg Yard Crew** will consist of 1 person responsible for operations within Black Mountain and Spartanburg Yards.

6c. **Hickory Yard Crew** may consist of 1 or 2 people responsible for operations in Hickory Yard and interchange with Carolina and Northwestern (C&NW)

6d. **Linwood Yard Crew** may consist of 1 or 2 people responsible for operations in Linwood Yard.

6e. **AVMRC Train Dispatcher** is responsible for communication and control of trains on the Asheville and Piedmont Division mainlines. This dispatcher is not responsible for Piedmont Upper Level (C&NW, Ritter tracks).

6f. **AVMRC Yard Dispatcher is** responsible for communication with Yardmasters and Train Dispatcher. Yard Dispatcher may also handle Asheville panel operation in meeting room or communication with Asheville Tower operator as required.

6g. **C&NW Dispatcher** is responsible for operation and train assignment for C&NW and Ritter Lumber.

6h. **Asheville Tower Operator** will man the Asheville Tower as required to control mainline turnout operation on the Asheville Division.

6i **AVMRC Trainmaster** is responsible for assignment of trains to train operators. Trainmaster will provide a signup sheet (Call Board) to document train assignments. The Call Board

is NOT the time board referenced in Section D-5. Specific train assignments will be made at the morning meeting. (Section F-2)

6j. **AVMRC Roadmaster** is responsible for "on the ground" issue reconciliation and operation of the Saluda Grade Pusher.

6k. **Train Crews** consisting of one or two people are responsible for operating their assigned train following the manifest requirements and Train Dispatcher direction (Section F-8). Train Crew is also responsible for having engine (personal or club), radio *with headset* and throttle ready before receiving manifest.

F7. **Operating personnel** must have a FRS radio *and headset* for communication with appropriate Dispatcher. The club has a limited supply of radios *and headsets*.

7a. **Train Dispatcher and Train Crew** will utilize channel 9 *and each train crew must have one active radio with headset.*

7b. **Yard Dispatcher and Yardmasters** will utilize channel 16 *and each yard crew must have an active radio and headset*

7c. ***Carolina & NorthWestern and Ritter Lumber Operations*** are exempt from the FRS requirement

F8. **Train crews** must follow the instructions of the Train Dispatcher.

8a. Train crew should respond to instruction by repeating instruction back to Dispatcher

8b. Train crew must notify Dispatcher of progress by "OSing" each OS location

8c. Train crew must notify Dispatcher when stopped for a problem, when stopped at limit of track authority by Dispatcher, stopped to do work or stopped at yard limit waiting clearance into yard.

F9. **Train crews** will conduct any switching that is NOT required in a yard with an assigned yard crew.

F10. **Train Crews** should confirm that train has correct cars after yard switching or local switching

F11. **Train Quantity Limits** (Section D - 2, 3, 4) are waiver for AVMRC Operations.

F12. **Train Length Limits** (Section D- 15, 16) are waived for AVMRC Operations.

F13. **Regular Operation Time Board** (Section D-5) use is waived. See Section F -6i

F14. **Setup Track requirements** (Section D-11, 12, 13) are waived. These tracks maybe used to set up staged trains or switching locations during AVMRC Operation Session.

F15. **Asheville Division Turnout Control** amended below:

15a. **Section E-1-c** is amended to control by Yardmaster.

15b. **Section E-2-b-b.1** is amended - Panel Pro panel in Asheville may only be operated by Tower Operator when Dispatchers panel is inoperative (See F- 6 – h)

15c. **Section E-2-b-b.2** is not permitted for AVMRC OP Session

15d. **Section E-2-b-b-3** this section is permitted after permission from Dispatcher.

G. G- Gauge - Procedures and Rules

G1 Introduction

a. The G-Gauge layout is known as PISGAH VALLEY CENTRAL.

b. The PISGAH VALLEY CENTRAL is located on the depot platform.

c. The Pisgah Valley Central allows for both track powered and battery powered engines.

d. There is limited club equipment available for members use. Member's personal equipment is welcome. See Section 2 Equipment Requirements

G2 Equipment Requirements

a. All club engines and rolling stock should be equipped with KD couplers set at the proper height using a KD coupler height gauge.

a.1 Personal equipment is exempt from Para.G.2.a if not being run with club equipment.

b. All club rolling stock should have metal wheels.

b.1 Personal equipment is exempt from Para. G.2. b

G3 Layout Setup

a. Umbrellas should be opened up if necessary

b. Carefully remove tarps covering sawmill, gravel facility and other structures. Tarps are to be stored under layout near facilities.

c. Setup the car barn by unlocking with key from key ring located in YARD orange tote box. Remove the door, plug in the power plug, swing barn in to position and lock. Use available pin to secure the bridge to the main layout.

d. Turn on power strip in shop by coffee pot to activate G Gauge layout track power for Upper Level Branch Line, Main Line track and Avery Creek Yard Tracks.

e. CREST remote controller(s) should be brought out to layout area.

f. Check battery levels of both CREST and AIRWIRE remote controllers and replace if necessary

g. Remove cover from Little River Yard and Avery Creek fascia panel.

G4 Layout Shutdown

a. At closing time umbrellas need to be closed with cover sleeves.

b. No cars should be out on the tracks unless covered by tarps at sawmill and gravel facility.

c. Cars must be stored in the Car Barn or on the Back main yard tracks. No cars are to be stored on Main Line tracks. Some log cars maybe on Carr lumber track closest to the building. Some gravel cars may be stored Penrose Gravel facility track.

d. To shutdown Car Barn - unplug the power from the barn and slide the door in to position making sure that the door is all the way in, as the lock hasp will not lock when the Car Barn is moved to the locking position. Use the available pin to secure the Swing bridge in the open position and the hook to the yard when all operations are completed.

e. Carefully cover sawmill and gravel facility with tarps and hold in place with supplied half bricks.

f. Return orange Yard and Main tote boxes to shop.

g. Turn off layout track power supply power strip in shop.

h. Install covers on Little River Yard and Avery Creek fascia panels.

G5 Operating Rules

a. G-Gauge trains should be operating on the Main Line loop and Upper level Branchline during high visitor times, weather permitting. High visitor times are Saturdays from 10am to 2 pm, Wednesdays from 1pm to 3pm and Special Event hours.

b. All trains running on Main Line should have a caboose or identifiable end of train car.

c. All trains running on the Main Line are to be run in counterclockwise direction.

d. Mainline operation is limited to two (2) total trains.

e. Mainline operation is limited to one (1) train with battery operated engine and one (1) train with track powered engine.

f. Upper Level Branch operation is limited to one (1) train.

g. Upper level operation is limited to one (1) train.

h. The Club has a limited amount of engines, rail cars and cabooses available for use of club members.

i. No member or visitor should run another member's personal equipment without asking the owner first.

j. SET UP / TEST track on front edge of layout now known as Avery Creek and 4 yard tracks now known as Little River may be used to set up or test locomotives.

k. Club members are responsible for any restrictions regarding visitors operating trains on the PISGAH VALLEY CENTRAL.

m. Power control of all Avery Creek and Little River yard tracks is by on-off switches. On-off switches are located on yard fascia panel.

n. The car barn tracks are extensions of the yard tracks.

o. Turntable operation procedures are to be defined

p Track power control panel at the Little River yard has on off switches and a Main/Yard switch.

q. Turnout operation is manual.

H. Junior Engineer - Procedures and Requirements

Procedures and Special Instructions to be defined.