



# **ACCUCRAFT TRAINS**

## **MUSEUM QUALITY BRASS MODELS**

### **Accucraft PRR E6s Atlantic**



**Manual for Butane and Alcohol versions**

**#1794 PRR E6s first production model**

**#460 PRR E6s last production model**

# Instruction Manual PRR E6s Atlantic



**Note: Please read the entire manual prior to operation**

## Unpacking

Remove inner wooden boxes from the shipping carton, open and remove the foam padding. The locomotive is bolted down to the crate, use a long phillips screwdriver and a wrench to remove the 4 bolts. Lift the plate and locomotive from the case. Place the board on a hard surface and using a razor knife cut along the board edge. Carefully pull off the tape and plastic from the locomotive. Discard all tape and plastic.

The tender is housed in foam and paper. Simply lift out being careful of the ladder and lamps

## General Information

Operating a live steam model is different than a electrically powered version. It is a hands on interactive model. Never leave any working engines unattended once the burner is lit or if the locomotive under way. Always know where and how the locomotive is operating including the boiler water levels.

- Always read and understand the manual prior to operation for the first time
- Always maintain the lubrication on the motion parts and lubricator as it is designed for extended run times. The lubricator will last for about 45-60mins
- Never let the engine run completely out of water – if the locomotive suddenly stops and there is still pressure or if the glass is empty shut down the burner. **DO NOT ADD WATER TO A HOT EMPTY BOILER**
- When filing the butane gas tank keep away from any open flame or passing by locomotives, especially Alcohol fired locomotives.
- Do not carry the locomotive by any bodywork, always carry by the front and rear buffers.
- Never stand or look directly over the chimney as hot water or oil can eject at any time.
- Use caution when opening the smokebox door when a engine is hot or burner is lit.
- Never touch any running gear while in operation as they can cause injury.
- Never allow children to operate without adult supervision.

# **Instruction Manual**



## **General maintenance**

As with all operating machinery; model or full size, wear will occur. Much can be done to prevent and prolong the life of both.

Keep the engine as clean as possible and the motion free of dirt and garden debris. When running on a garden track always clean after each day of running to keep sand and dirt from damaging the parts.

Routinely check for loose bolts/nuts and tighten as necessary. Do not over tighten, these are small model bolts and can shear or strip easily. Use of blue loctite is advised on any loose bolt.

To clean fill a spray bottle with hot water and a liquid dish detergent. Spray onto the cool locomotive. It cuts the grease and oils used to lubricate. It also cleans the dirt and sand from the small parts and motion points. Use a 2" soft bristle paint brush to wipe the loco down and get into all the confined spaces. Using hot water rinse off the locomotive keeping the water away from any R/C gear or electronics that may have been installed. Allow to dry thoroughly then lubricate as usual and store.

### **Using harsh cleaners may damage the paint.**

Lubrication should be done prior to each run. All motion points require a light oil designed for our steam trains. Green Velvet PBJ220 is designed just for that. It is designed to stick and not run, just a little is required on each point with a needle applicator. Do not flood parts with oil as that will just attract dirt and run all over and eventually onto the rails.

Steam oil should be a light weight ISO460 Steam Oil for our low pressures. Using a heavier oil or non steam oil will void the warranty.

When filling the lubricator only fill to the bottom of the tank bushing. Overfilling will cause an excess of oil when starting out. Also use a drop of steam oil on the cylinder crossheads, piston rods and valve rods as the rods all enter the cylinders and are exposed to the high temperatures of the steam. This will keep the O-Ring seals well lubricated and extend the life. To drain the lubricator use a syringe

## Lubrication points for Steam Oil

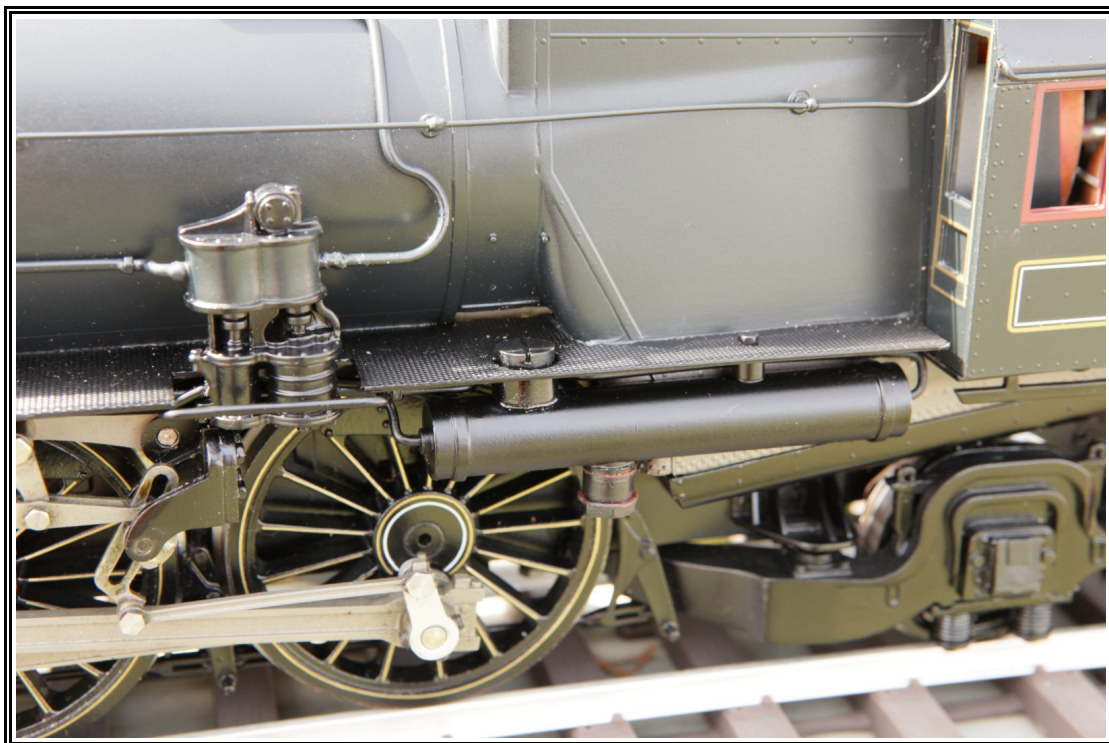
Displacement lubricator  
Piston rods  
Valve rods  
Crosshead Guides



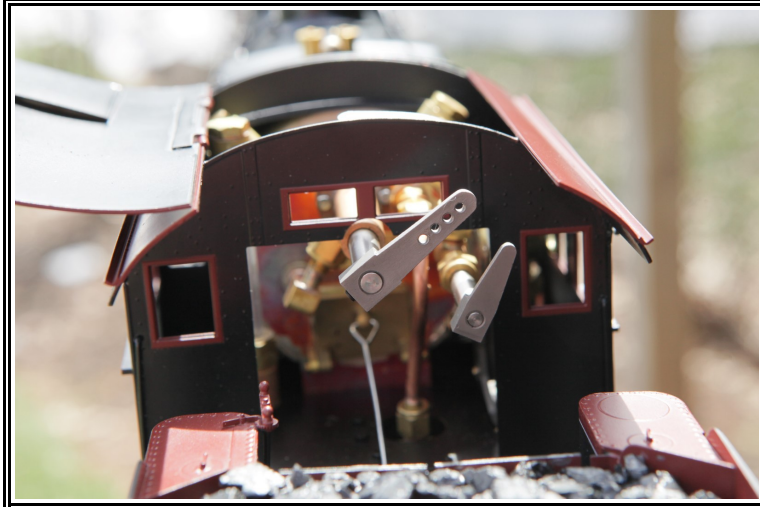
## Lubrication points for lubricating oil

All valve gear linkages and pins or pivot points  
Valve gear eccentrics  
Axle pump eccentric  
Main and connecting rod pins/bolts  
Journal box to axle  
Journal box to frame  
Trailing truck pivots  
Trailing truck journal to axle  
Tender axles and truck pivot

### Running board mounted lubricator







Cab controls – Throttle at center with the Blower valve to the right

## Preparation to Running

To connect the tender to the locomotive there are 3 lines to be connected.

1. Water feed line high pressure on the left side with the M5 threaded connection
2. Center line is the fuel both gas and Alcohol
3. Right side is the bypass return a low pressure line

Always service the engine fully for each run. Gas, Oil and Water

1. To fill the Butane gas tank, remove the tender deck cover and set aside for ease of access to the tender. Invert gas can onto filler valve and support the tender whilst filling to prevent the loco from tilting. Be aware of your surroundings and other running locomotives as Butane creates a puddle of gas that is invisible when filling. Gas will squirt out of the valve when full, at that time remove the can. For filling Alcohol fueled versions be sure the fuel valve is closed then open the filler cap and fill to the top. Open the Butane gas valve, **DO NOT LIGHT** but listen for the gas through the jet, you should hear a smooth gas sound. If there is any sputtering or squirting of gas allow it to pass until it is smooth. Shut the gas valve The gas tank is now ready and full. Bleeding off the tank allows the liquid in the tank above the valve to vent so lighting is easier and large fires are avoided.

2. Lubricate each motion point with a lubrication oil as discussed previously. Drain and fill the displacement lubricator in the cab until the oil is just to the fill bushing. Use a ISO460 oil only. Use a syringe to full the lubricator.

3. To fill the boiler you will use the hand pump to full the boiler to  $\frac{3}{4}$  full glass. You will need to close the bypass valve located on the right side under the cab. It will send all the water to the boiler when closed. Leaving a space of air in the boiler will allow the steam to build and water to expand allowing for easier starts when cold. You can maintain the water level using the hand pump during operation in conjunction with the axle pump.



## Lighting up

### **Both versions will require a draft fan AP-28202 for start up.**

Be sure the throttle is closed and the Johnson bar is in neutral. And typically open the bypass so there is less strain on startup. Set the draft fan on the chimney in the off position.

For Butane - Open the firebox door as this boiler uses a ceramic burner for operation and slightly open the gas valve, using a stick lighter bring the flame to the door. The burner should light then turn on the fan. Check the flame and make sure it is a strong blue flame, if yellow or green adjust the air collar on the burner flange at the cab base. Close the door.

For Alcohol – Open the fuel valve and allow so sit and flow into the burner pot for 1-2 mins to ensure good wicking of the fuel in the burner. Once ready to light, turn on the fan and using a stick lighter or a lit wick insert to the firebox to ignite. All pots should be lit and visible from the door. Close the door.

Once the pressure is up to 20psi you can open the blower valve slightly and remove the fan from the stack. Pressure will climb quickly on the blower. Once up to pressure 50-60psi the safety should lift and you are ready to run and clear the cylinders. The locomotive has operating cylinder drain cocks, they can be opened by sliding the lever fore and aft for operation. Water and oil will eject from the chimney, a cloth or towel will help deflect and keep the loco clean.

Once the cylinders are warm and cleared of condensate you are ready to

set off.

When starting off ensure the johnson bar is in the full forward notch. You can notch back when running at speed to conserve steam.

For Butane - Adjust the burner level to suit the running conditions and keep as low as possible while maintaining the needed steam supply. Excessive blowing of the safety is wasting fuel and water and shortens the run time. Maintain the boiler level using the hand and axle pump. Never allow the water level to get below the top of the lower nut on the glass as that exposes the flue from water inside.



## **End of run**

When the fire goes out, stop at a convenient place off the mainline to shut down and drain or to refill for continued running. If shutting down close the gas and throttle valves. Do not open the lubricator until you know the pressure is at 0 on the gauge and has cooled. The locomotive will be hot at first.

Drain the water from the tender using the supplied syringe. Once cooled the locomotive should be wiped down with a cotton cloth. Check the running gear for dirt. If seen, clean as described earlier otherwise wipe and apply oil.

Always store in a temperature controlled environment unless completely draining of water as freezing temperature will shatter the sight glass.

The locomotive may drip oil or water during storage so keep a cloth or towel underneath.

This model was developed with assistance of David Fletcher and Jason Kovac along with the PA State Archives for their invaluable collection of original working drawings to make this one of the finest models built to date of the PRR E6s

## **PRR E6s Specifications**

Scale 1:32  
Gauge 45mm  
Min Radius 72"  
Butane or Alcohol fired  
Slide valve cylinders  
Walscherts valve gear  
Cylinder draincocks  
Handpump/Axlepump  
Lubricator  
Water level gauge

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