

Kirklees Light Railway – Steam Driver Specification

Below is an outline of the minimum standard that all qualified Steam Drivers on the Kirklees Light Railway must be able to meet. The ability to reach these standards will be assessed both practically and theoretically. All Steam Drivers will be subject to a practical test prior to being passed out, this will be undertaken by the Operations Manager or someone appointed by him as competent to assess a Steam Drivers candidate. All Steam Drivers will be subjects of continual assessment both practically and theoretical.

Theoretical assessment may be written or verbal and a note should be made in the driver's assessment.

Key (These are for categorisation purpose and not a training progression)

- 1. Rules**
- 2. Preparation of locomotive**
- 3. Disposal of locomotive**
- 4. Operation of locomotive and ancillaries**
- 5. Boiler Management**
- 6. Locomotive specific failures and emergencies**
- 7. Anatomy of locomotive**

Standard	Assessment
1.1 A Steam Driver must have a clear understanding of the Rules and Regulations laid out in Issue 2 of the Kirklees Light Railways rulebook.	Practical & Theory
1.2 A Steam Driver must be fully conversant with all the hand, flag and colour light signals used on the Kirklees Light Railway.	Practical & Theory
1.3 A steam Driver must be able to demonstrate their understanding and competence in the rules and practices governing the operating of trains under all normal circumstances.	Practical & Theory.
2.1 A Steam Driver must be able to carryout the daily inspection of their locomotive and identify potential defects.	Practical
2.2 A Steam Driver must be able to test and read the locomotive gauge glasses to determine boiler water level at the start of the day with the locomotive cold or in steam.	Practical & Theory
2.3 A Steam Driver must be able to inspect the firebox for signs of defect whether the locomotive is cold or in steam. This includes leaking fusible plugs, tubes, stays, failed welds, condition of arch plates and firebars.	Practical & Theory
2.4 A Steam Driver must be able to inspect the internals of the smokebox for signs of defects, whether the locomotive is cold or in steam. This includes leaking washout plugs, tubes, stays, failed welds and defective pipework.	Practical & Theory
2.5 A Steam Driver must be able to clean the locomotives boiler	Practical

tubes, blast pipe and blower nozzles and identify any problems.	
2.6 A Steam Driver must be able to inspect the visible parts of the locomotive and identify problems. This includes, but is not limited to, motionwork, external pipework, boiler fittings (signs of leakage or failure) and couplings.	Practical & Theory
2.7 A Steam Driver must be able to lay, light and maintain a fire whilst keeping smoke to a minimum.	Practical
2.8 A Steam Driver must be able to clean and recover a fire that has been banked up overnight.	Practical
2.9 A Steam Driver must be able to fully lubricate their locomotive with the correct lubricants, including Mechanical Lubricator, Air Pump Displacement Lubricator, Grease Nipples, Bearing and axle box lubrication (In conjunction with 3.4).	Practical
2.10 A Steam Driver must be able to monitor their locomotive during preparation to identify potential problems. This includes steam leaks, failure of gauge glasses, failure of pressure gauges, failure of locomotive boiler (leaking stays, tubes, cracks and fusible plugs).	Practical & Theory
3.1 A Steam Driver must be able to thoroughly clean their fire and understand how to bank up the locomotive to enable it to stand overnight, including level of banked up fire.	Practical
3.2 A Steam Driver must be able to run a fire down to enable the locomotive to go out and cool down gradually.	Practical
3.3 A Steam Driver must be able to read the gauge glasses to enable the boiler to be filled to the appropriate level for each steam locomotive to stand overnight.	Practical
3.4 A Steam Driver must be able to appropriately lubricate their locomotive ready for service the following day (in conjunction with 2.9).	Practical
3.5 A Steam Driver must know how to shut down the locomotive to make it tight for the night. This includes closing gauge glasses, air reservoir and main manifold.	Practical
3.6 A Steam Driver must be able to check round their locomotive for signs of steam or water leakage and identify any problems that would prohibit the locomotive remaining in steam overnight.	Practical and theory
4.1 A Steam Driver must understand and be able to operate the locomotive and train braking systems, both to release and apply them, as well as associated equipment such as air pumps, reservoirs and fittings.	Practical
4.2 A Steam Driver must understand and be able to operate appropriately the reverser of each locomotive and understand its effect on the operation of the locomotive.	Practical
4.3 A Steam Driver must be able to operate appropriately the regulator of each locomotive under differing conditions of load, adhesion and gradient.	Practical
4.4 A Steam Driver must be able to demonstrate smooth control	Practical

when moving away either light engine or hauling rolling stock and when performing shunting movements.	
4.5 A Steam Driver must be able to demonstrate control of their locomotive and correct observance of signals when coupling up to rolling stock.	Practical
4.6 A Steam Driver must be able to demonstrate that they are able to bring the train to a smooth halt in the appropriate position in stations and passing loops.	Practical
4.7 A Steam Driver must be able to demonstrate that they are capable of controlling their train. This includes appropriate use of the regulator, reverser and brakes under all conditions of gradient, adhesion and operating eventuality.	Practical
4.8 A Steam Driver must be able to demonstrate that they understand how to operate their locomotive/train appropriate to the circumstances. This includes control during shunting maneuvers, passing through stations and permanent way slacks as well as open line running.	Practical and Theory
4.9 A Steam Driver must be able to demonstrate that they have thorough route knowledge. This includes changes of gradients, speed limits, signaling points, whistling points, crossings, names or identification of lineside features and positions of mileposts.	Practical and Theory
4.10 A Steam Driver must be able to demonstrate their ability to work with their guard or shunter to ensure all operations are carried out safely, correctly and smoothly.	Practical
5.1 By using the locomotives gauge glasses a Steam Driver must be able to read, monitor and predict water levels in the boiler on the differing gradients of the railway.	Practical
5.2 A steam driver should be able to use the locomotives injectors under varying conditions of pressure and temperature, and demonstrate knowledge of how they function.	Practical
5.3 A steam driver should be able to demonstrate the controlled use of the locomotives blower, understand its purpose and where its use is appropriate.	Practical
5.4 A Steam driver should be able to demonstrate that they can accurately read the locomotives boiler pressure gauge, monitor boiler performance and anticipate trends in steam production.	Practical
5.5 A Steam driver should understand and be able to demonstrate how to fire the locomotive. This includes maintaining appropriate fire levels, use of primary and secondary air and understanding the function of the Gas Producer Combustion System.	Practical and Theory
5.6 A Steam driver should be able to demonstrate that by using all controls, gauges and appropriate management of the fire they are able to maintain the locomotive boiler with sufficient water and steam during the course of a days operations.	Practical
5.7 A Steam driver should have a sound judgment of when the	

locomotives fire needs cleaning and how to clean it.	
5.8 A Steam driver should be thoroughly aware of the boiler safety devices and how they operate. This includes Safety valves and the fusible plug.	Practical
6.1 A Steam driver should be aware of how to throw out a locomotive fire and what circumstances would warrant this.	Practical and Theory
6.2 A Steam driver should be able to demonstrate how to isolate a locomotive gauge glass in the event of a breakage.	Practical and Theory
6.3 A Steam driver should have knowledge of what to do should the water disappear in the locomotives gauge glasses.	Practical
6.4 A Steam driver should be able to demonstrate what action they would take in the event of a sticking clack valve.	Theory
6.5 A Steam driver should know how to identify a leaking or failed fusible plug.	Practical and Theory
6.6 A steam driver should be able to identify problems that may prevent a locomotive from steaming.	Theory
6.7 A Steam driver should be able to demonstrate a controlled emergency stop on an uphill and a downhill gradient.	Theory
7.1 A steam Driver should be able to identify and understand the function of all cab controls and fittings.	Practical
7.2 A Steam driver should be able to demonstrate understanding of the function and operation of the valve gear and identify the principle components.	Theory
7.3 A Steam Driver should be able to identify and understand the function and operation of all the boiler fittings.	Theory
7.4 A Steam Driver should be able to identify and understand the basic components of the locomotive rolling chassis including frames, wheelsets and springing etc.	Theory

Specification Dated: 31st August 2011 – To be reviewed at periodic intervals