

 <p>PO Box 299 Oberon NSW 2787 ABN 98 107 506 208</p>	Version	Author	Reviewed	Reference
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	73CL Pre-start, Pre-work Inspection and Operation			

### Document Status

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### Revision Record

Revision	Date issued	Description of Changes
1	12/12/2018	Additional information
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## 73CL Locos Pre-start, Pre-work inspection and Operation

### F-048

#### 1: Introduction

This document is the routine to be followed by the driver and observer of the OTHR's 73 Class Diesel Locomotives prior to starting and operating.

#### 2: Tasks

##### Preparation for starting procedure

###### 1: Driver

###### a: In the Cab

- Close the battery switch.
- Ensure all circuit breakers on the electrical panel are switched on and the emergency low water isolating switch is sealed in the 'on' position. The control switch on the no. 1 control stand must be turned off to prevent damage to the electrical circuits.
- To ensure the spare fuse is good by operate the three-position light switch in the short end hood. Lamp should turn then off. Check that the low-tension isolating switch is closed and sealed.
- Check that the log book entries of the stabling driver has been attended to and that the Loco meets minimum operating standards.
- Check throttle handle is in the neutral position, transition lever is in the out position, multiple unit is in the control position.
- Check automatic brake valve handle is in the running position and the independent brake valve is in application position on the brake pedestal from which the unit is to be controlled. The isolating cock on the brake pedestal is to open and the one on the other pedestal is closed.

###### b: In the engine room

- Check compressor oil level is between minimum and full, check the driving belts are not split, cracked or frayed.
- Check oil level in the engine sump is between minimum and full (note a dip stick is provided on both sides of the engine).
- Check water level indicator is in the full position and the filling handle is in the operation mode.
- Check hydraulic fan oil level is between the maximum and minimal black lines.
- Check hydraulic cooling fan emergency cock is in the normal position.
- Check transmission oil level is between minimum and full with the dip stick provided.
- Check engine air intake filter indicator red band ins not showing, one on each side of the engine.
- Ensure compressor governor and sanding magnet valve isolating cocks are open.

- Prime fuel system in the following manner: open vent valve at the rear of the sight glass. Operate manual hand priming pump until sight glass is full of fuel and free of bubbles. Close the vent valve at the rear of the sight glass.

c: Below the foot plate.

- Check that there is adequate fuel showing in the gauge glass. White dots indicate no fuel, white lines indicate fuel level.
- Check isolating cocks for sanders are in the open operating position, main reservoir, distribution valve and brake cylinders.
- Check all coupling cocks are closed and air hoses attached to the dummy couplers at each end of the units.
- Check auto-couplers are in working order, brake shoes are above minimum thickness, nothing falling off or nothing fouling the movement of the locomotive.

2: Observer

- Ensure hand brake is applied
- Check operation of all lighting circuits, including head and marker lights. Set up marker lights as required.
- Check fire extinguishers are charged, and seals are intact, kit equipment is complete, jumper coupling, detonators and red flags, are within date and in place.
- Check that the sand boxes full.
- Assist the driver as required.

Refer to the PTC Operations and Management of Diesel Hydraulic Locomotives manual pages 25-27

#### **Starting the engine Procedure**

- Switch on control circuit. The alarm bell will sound until the diesel engine starts and low lubricating oil switch closes. Note the starting circuit is inoperative until the control circuit switch is closed.
- Hold engine start isolating switch (yellow button).
- Press in and move starting switch to heat position for approximately 15 seconds and then move to the start position. (During cold weather the starter switch should be held in the heat position for approximately 2 minutes before turning to the start position). This will engage the starter motors and the engine will turn over.
- When the engine fires and runs, release the starter switch. Continue to hold in the isolating switch (yellow button) for a period of 15 seconds. This permits the lubricating oil pressure to build up and open the open low lubricating oil switch contact points before the protective circuit becomes operative. Failure to hold in the isolating switch (yellow button) for the required time period, will result in the diesel engine shutting down due to the lubricating oil pressure not having built up sufficiently to open the low lubricating oil switch contact points.
- If the engine fails to start after cranking for approximately 15 seconds, move starter switch to the heat position for a further 15 seconds before cranking again.
- Should the engine fail to start, prime fuel system and start the procedure again.
- Do not crank the engine for more than 15 seconds, as failure to start indicates a fault requiring attention.

Refer to the PTC Operations and Management of Diesel Hydraulic Locomotives manual pages 27-28

### Testing the brake equipment

- The independent brake valve is to be in the application position, automatic brake valve in the running position and the isolating cock open on the brake pedestal being tested.
- Check the main reservoir, brake pipe and equalising reservoir pressures. The brake valve and equalising reservoir pressure should be 500kpa and the main reservoir pressure 670 – 770kpa.
- Place the independent brake valve in the running position and when brake cylinder falls to zero, move the automatic brake valve to the service lap position. Note that the minimum reduction of 50kpa takes place in the equalising reservoir and brake pipe pressures. The brake cylinder pressure should rise to approximately 70kpa.
- Depress the independent brake valve handle and release the engine brakes.
- Move the automatic brake valve to the service application position and reduce the equalising reservoir and brake pipe pressure to 70kpa. Note that the brake cylinder pressure increases.
- With the brake valve handle in the lap position, check for one minute that the brake pipe equalising reservoir and brake cylinder pressure do not reduce or increase by more than 35kpa. Note if the pressure change exceeds 35kpa, the defect must be rectified before the locomotive goes into services.
- Place the automatic brake valve in the emergency application position. Note that a very heavy reduction occurs in the brake pipe and equalising reservoir pressures. The safety valve should lift on the distributing valve to maintain the brake cylinder pressure at 380kpa.
- Move the automatic brake valve handle to the running position and that the flow metre functions correctly.
- Move the independent brake valve to the full application position and note that brake cylinder pressure rises and remains steady at 325 kPa.
- Place the independent brake valve in the running position and note that the brake cylinder pressure releases.
- While the brake test is being conducted, the cutting in and out point of the governor is to be checked.

### Power and Sand Test

- Move transmission lever to the 'in' position.
- Reduce brake cylinder pressure to 70kpa. Note the diesel engine will not respond to the throttle if the brake cylinder pressure exceeds approximately 150 kPa.
- Move throttle handle to the forward position. Note the diesel engine responds to the throttle and press sanding button.
- Move throttle handle to the reverse position. Note the diesel engine responds to the throttle and press sanding button. Return the throttle handle to the neutral position.
- Move transmission lever to the 'out' position.
- Check battery charging ammeter is registering a charge.

- Check sand operation drain water from main reservoirs and check brake rigging, brake shoes and brake piston travel are within the prescribed limits.

### **Operation of Loco**

Refer to the PTC Operations and Management of Diesel Hydraulic Locomotives manual pages 30-32

### **Stopping the engine procedure**

Refer to the PTC Operations and Management of Diesel Hydraulic Locomotives manual page 32

### **Stabling the engine procedure**

Refer to the PTC Operations and Management of Diesel Hydraulic Locomotives manual pages 32-33

## **2: Related Documents**

PTC Operations and Management of Diesel Hydraulic Locomotives manual which there is a copy in the Locomotive cabin.

