

YORKSHIRE

**400 H.P. DIESEL-ELECTRIC
SHUNTING LOCOMOTIVE**



INSTRUCTIONS TO DRIVERS



**400 H.P. DIESEL-ELECTRIC
SHUNTING LOCOMOTIVE**

**ROLLS-ROYCE C.6.SFL. ENGINES
B.T.H. ELECTRICAL EQUIPMENT**

**INSTRUCTIONS
TO DRIVERS**

YORKSHIRE ENGINE COMPANY LIMITED - SHEFFIELD - ENGLAND

1956

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BEFORE STARTING UP AT BEGINNING OF SHIFT

Check oil level in engine sumps and top up as necessary.

Check oil level in mechanical lubricator if fitted.

Check lubricant in coupling rods.

Check water level in radiators. Report if any filling is necessary.*

Check sand in sand boxes.

Check fuel oil in tanks is sufficient for shift.

Remove engine compartment doors and check for oil or water leaks.

**There is antifreeze in the system and dilution is undesirable.*

STARTING UP

Pilot switch in the “ off ” position.

Put battery switch in the START position

Open throttle partially and

Press starter switch button for one engine.

Release the starter button as soon as the engine fires. If the engine fails to fire within 10 seconds, release the button and try again.

Close throttle.

Repeat for second engine when required.

Note.—In cold temperatures press the excess fuel plunger before starting.

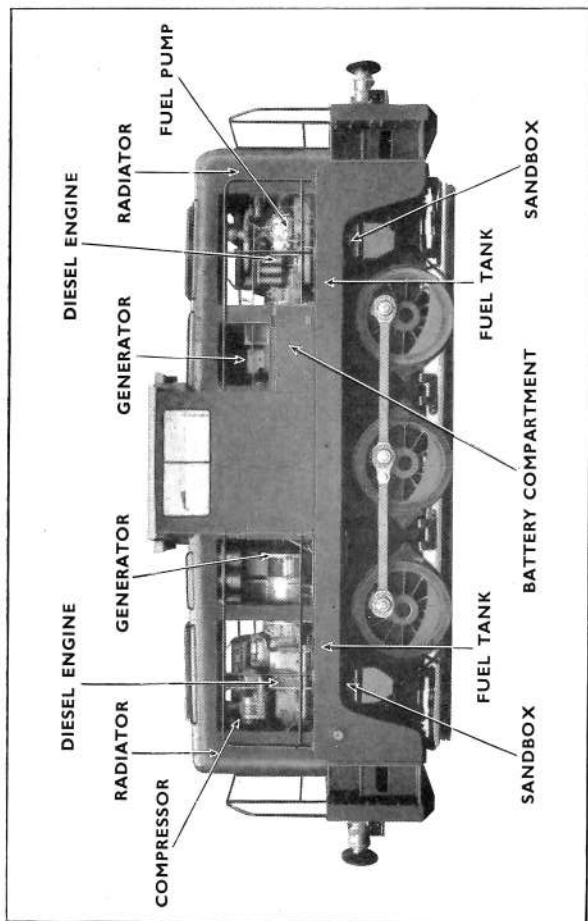
See that lub. oil pressure gauges show the pressure building up immediately (this pressure should be about 40 lb. per square inch, but must not be allowed to drop below 20 lb. per square inch). Put battery switch in RUN position to enable battery to be charged. **NEVER MOVE THIS SWITCH** when the starting button is depressed.

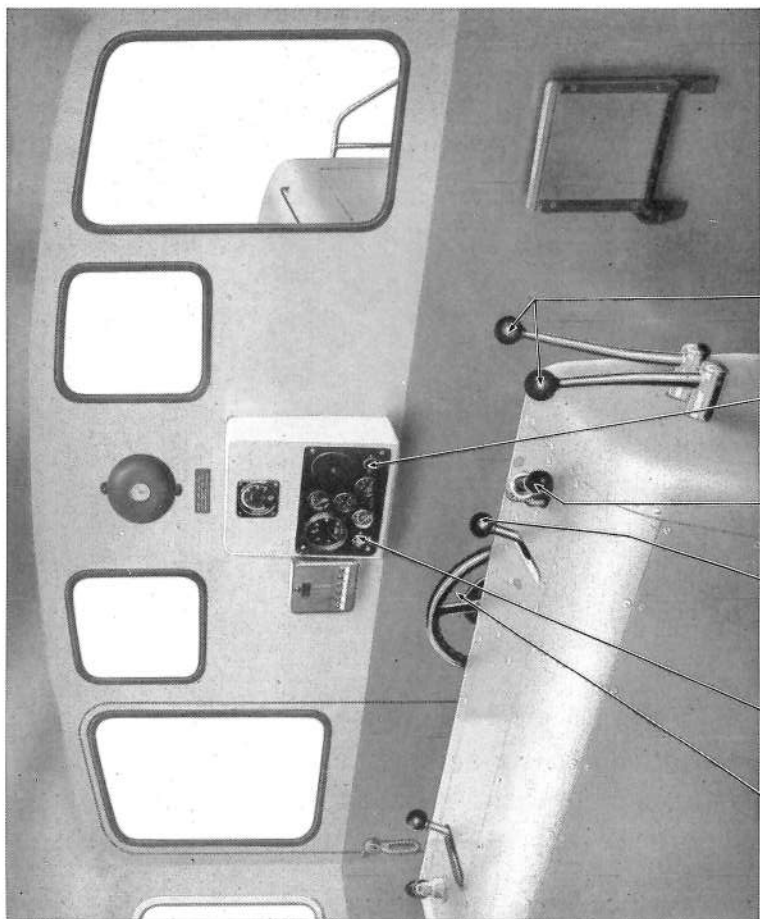
MOVING OFF

With the battery switch in the RUN position and the pilot switch on, the locomotive is ready to move off as soon as brake pressure is built up in the reservoir. There are two fingers on the Westinghouse duplex brake pressure gauge. The red finger indicates reservoir pressure which will build up to 90 lb. per square inch, but as only 50 lb. per square inch is required for the brake cylinder, it is quite safe to move off with a minimum pressure of 50 lb. per square inch. With the hand brake released and the brake valve released, the throttle can now be opened by pulling it back.

The reversing lever is interlocked with the throttle and cannot be thrown while the throttle is open. Forward position to move forward, rear-ward position to move backwards. *DO NOT THROW THIS LEVER WHEN THE LOCOMOTIVE IS MOVING.*

The throttle lever must be opened slowly for the first inch or so to allow the main contactors to close, after





THROTTLE

STOP

BRAKE

REVERSE

START

HANDBRAKE

which it may be opened rapidly to give the best acceleration or full engine speed for starting a heavy load on a gradient.

No harm will be done to any of the equipment by giving the locomotive full power as quickly as possible and the diesel engine cannot be overloaded. Sand should therefore be applied as liberally as necessary.

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RUNNING

The electrical generators and motors are self-ventilated and therefore there is a limit to the time the throttle can be held fully open below the speed from which the rating is continuous. At 1 or 2 m.p.h. the time limit is probably only about 5 minutes on a hot

summer day. At 4 to 5 m.p.h. it is probably about 15 minutes but at 8 m.p.h. there is no time limit. If these approximate time limits are exceeded the generators and motors may tend to get overheated.

The radiators are designed to be adequate to cool the engines under all normal conditions of service. A thermostat is incorporated in each system to give rapid warming up and to maintain the engines at the correct working temperature under all conditions. The thermostat should keep the cooling water at a temperature between 70° and 80°C. The water temperature should not be allowed to rise above 97°C. The filler cap is unsafe to be opened at temperatures in excess of 65°C.

The driver need only glance occasionally at the gauges provided. Any serious loss of brake air pressure, as would be indicated by the red finger, would probably mean the loss or breakage of the belts driving the compressor. The water temperature gauge should not exceed 97°C. as already explained, and, if high water

temperatures are recorded, the belts driving the radiator fan should be checked.

The battery ammeter should shew a charge of approximately 20—30 amps when an engine is first started and then drop down to a figure of 0—10 amps under normal running. If the charge reading remains high or if there is no indication of any charge, this should be reported to the Maintenance Staff.

The oil pressure should not drop below 20 lb. per square inch. A fuel pressure gauge is provided and will indicate a fault or choke in the fuel supply. The fuel pressure gauge should not drop below 5 lb. per sq. inch.

The “ engine only ” position is used for testing purposes, and is obtained by lifting the pilot switch which allows the engine to be run up without any risk of the locomotive moving.

To utilise fully the horsepower of the locomotive, the engine speed on full throttle “ engine only ” should be between 1950 and 2000 r.p.m.

As already stressed the reverser must not be thrown when the locomotive is moving. The throttle must not be opened when the brakes are applied or vice versa, except when starting on a gradient, but the brake should be held on only long enough to prevent the loco rolling back. *THE MAXIMUM SPEED IS 23 M.P.H. AND THIS MUST NOT BE EXCEEDED.*

SHUTTING DOWN

The engines should of course be stopped whenever the locomotive is not required to move within a few minutes as, in spite of the radiator by-pass arrangements, it is not a good thing to keep diesel engines idling for more time than is absolutely necessary.

When shutting down it is only necessary to press the stop buttons and hold until each engine stops. *DO NOT STOP ENGINES IMMEDIATELY AFTER HEAVY WORK*, allow the engines to cool down a little.

Apply the hand brake if the locomotive is being left for any length of time or if the locomotive has to be held on a gradient, as brake air pressure may leak off.

If the engines overheat due to coolant shortage allow cylinders to cool slowly before filling up.

YORKSHIRE ENGINE COMPANY LIMITED
MEADOW HALL WORKS - SHEFFIELD

