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**BRITISH TRANSPORT COMMISSION
(BRITISH RAILWAYS)**

**DIESEL, ELECTRIC AND
STEAM LOCOMOTIVES
ASSISTANCE
(DOUBLE HEADING)
AND
ASSISTANCE IN REAR**

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BRITISH TRANSPORT COMMISSION
(BRITISH RAILWAYS)
DIESEL, ELECTRIC AND STEAM
LOCOMOTIVES ASSISTANCE
(DOUBLE HEADING)
and
ASSISTANCE IN REAR

DEFINITIONS OF METHODS OF WORKING

For the guidance of staff in distinguishing between the two methods of coupling locomotives, the expressions "Multiple working" and "Tandem working" are defined as under:—

Multiple working—locomotives coupled for **full** through control by one driver.

Tandem working—locomotives coupled with only through control of the brake, and separately manned.

These definitions to apply equally to train or light locomotive working, where two or more locomotives are coupled together.

Only in the case of diesel locomotives having like controls must the jumper connections be coupled to allow the locomotives to run in **multiple**. To assist identification of diesel locomotives having like controls large symbols are painted over the buffers at both ends and small symbols are painted on all Jumper plugs and sockets. Locomotives having like symbols have like controls.

The symbols are:—

Type of locomotive	Coupling Symbol
Diesel Electric Locomotives	
All diesel electric with electro-pneumatic control.	Blue Star
All diesel electric with electro-magnetic control.	Red Circle
Except prototypes:—	
Type 3 diesel electric 1600 h.p. (L.M.S. Railway) 1000— 10001.	Red Diamond
Type 3 diesel electric 1600 h.p. (Southern Railway) 10201— 10202.	Red/White Rectangle
Diesel Hydraulic Locomotives	
Type 2 D6300—D6305 and Type 4 D600—D604.	Orange Square
Type 2 D6306—D6357 and Type 4 D803 onwards.	White Diamond
Type 3 Beyer Peacock (Hymek). D7,000 onwards.	Yellow Triangle
Symbols as above will not be shown on locomotives which will not couple in multiple.	

COUPLING OF LOCOMOTIVES TO ASSIST AT THE HEAD OF THE TRAIN

COUPLING BETWEEN DIESEL LOCOMOTIVES WITH LIKE CONTROLS—MULTIPLE WORKING

Diesel Locomotives with like controls may be coupled together for multiple working, provided that the following conditions apply:—

1. THE MAXIMUM SPEED OF THE COUPLED LOCOMOTIVES MUST NOT EXCEED THAT SPECIFIED FOR THE LOCOMOTIVE WITH THE LOWEST MAXIMUM SPEED.
2. The vacuum must be created on the leading locomotive only and the exhausters on the other coupled locomotive(s) must be isolated.
3. Air compressors on each locomotive must be left running.
4. Braked/unbraked switch must be in the appropriate position on each locomotive.
5. **Brakes must be applied by means of the vacuum brake handle (Automatic air brake handle on Southern Region)** in order that the brakes will be operated on each locomotive from the leading driving cab
6. The Automatic Warning System must be in the operative position in the **manned** driving cab only.

7. Train Stop Trip Cocks (if fitted) must be isolated on other than the leading locomotive.
8. Gangways will only be coupled when it is absolutely necessary; preferably at a Motive Power Depot.
9. In addition, the following connections must be made:—

(a) Diesel Electric Locomotives with Electro-magnetic Control Systems

- (i) Screw shackle.
- (ii) Vacuum pipes.
- (iii) Electric jumper cable (one side of locomotive only).
- (iv) One pair of main air reservoir equalising pipes (one side of locomotive only).
- (v) Steam heating pipes (when required).

(b) Diesel Electric Locomotives with Electro-pneumatic Control Systems

- (i) Screw shackle.
- (ii) Vacuum pipes.
- (iii) Electric jumper cable (one side of locomotive only).
- (iv) One pair of main air reservoir equalising pipes (one side of locomotive only).
- (v) One pair of Control air pipes (one side of locomotive only).
- (vi) Automatic air train pipes on Southern Region locomotives fitted with automatic air brake.
- (vii) Steam heating pipes (when required).

(c) Diesel Hydraulic Locomotives

(i) Screw shackle.

(ii) Vacuum pipes.

(iii) **Both** electric jumper cables (one each side of locomotive).

(iv) One pair of main air reservoir equalising pipes (one side of locomotive only).

(v) One pair of control air pipes (one side of locomotive only).

(vi) Steam heating pipes (when required).

10. When locomotives with like controls are coupled together for multiple working, **all controls** in the cabs, except those in the leading cab of the leading locomotive, must be isolated and **control keys REMOVED**.

11. Drivers are reminded that the foregoing instructions must be read in conjunction with the Driving instructions applicable to the type of locomotive of which they are in charge.

COUPLING OF LOCOMOTIVES TO ASSIST AT THE HEAD OF THE TRAIN

COUPLING BETWEEN DIESEL LOCOMOTIVES WITH LIKE OR UNLIKE CONTROLS OR

COUPLING BETWEEN DIESEL LOCOMOTIVE(S) AND ELECTRIC LOCOMOTIVE(S)—TANDEM WORKING

Diesel locomotives with like or unlike controls may be coupled together in tandem, or coupled to an Electric locomotive, or an Electric locomotive coupled to another Electric locomotive to work a train, providing that the following conditions apply:—

1. THE MAXIMUM SPEED OF THE COUPLED LOCOMOTIVES MUST NOT EXCEED THAT SPECIFIED FOR THE LOCOMOTIVE WITH THE LOWEST MAXIMUM SPEED.
2. Screw shackle must be coupled.
3. Vacuum pipes must be coupled.
4. Heating connections must be coupled as required. Where electric locomotives are coupled together train heating can only be supplied from the locomotive attached to the train.
5. The vacuum must be created on the leading locomotive only and the exhausters on the other coupled locomotive(s) must be isolated.

6. Air compressors on each locomotive must be left running.
7. Braked/unbraked switch must be in the appropriate position on each locomotive.
8. **Brakes must be applied by means of the vacuum brake handle (Automatic air brake handle on Southern Region)** in order that the brakes will be operated on each locomotive from the leading driving cab. This does not absolve the driver of the trailing locomotive from operating the brake in an emergency.
9. The Automatic Warning System must be left in the operative position in each **manned** driving cab.

(NOTE: On Diesel locomotives fitted with Western Region A.W.S. together with the holdover device to suppress the action of the Accelerator Valve, the hold-over device must be kept depressed continually on the trailing locomotive(s) when running coupled in **tandem**).
10. Train Stop Trip cocks (if fitted) must be isolated on other than the leading locomotive.
11. Drivers are reminded that the foregoing instructions must be read in conjunction with the Driving Instructions applicable to the type of locomotive of which they are in charge.

COUPLING OF LOCOMOTIVES TO ASSIST AT THE HEAD OF THE TRAIN

COUPLING BETWEEN STEAM LOCOMOTIVE(S) AND DIESEL LOCOMOTIVE(S)—TANDEM WORKING

A steam locomotive(s) may be coupled to a Diesel locomotive(s) to work a train, provided that the following conditions apply:—

1. The diesel locomotive should be leading wherever practicable.
2. THE MAXIMUM SPEED OF THE COUPLED LOCOMOTIVES MUST NOT EXCEED THAT SPECIFIED FOR THE LOCOMOTIVE WITH THE LOWEST MAXIMUM SPEED. The driver of the diesel locomotive must advise the driver of the steam locomotive the MAXIMUM PERMISSIBLE SPEED of the diesel locomotive.
3. Screw shackle must be coupled.
4. Vacuum pipes must be coupled.
5. Steam heating pipes between the locomotives will only be coupled if train heating is not to be provided by trailing locomotive.
6. With the diesel locomotive in front, care should be exercised in the use of cylinder cocks on the steam

locomotive, to avoid steam and dirt being blown into vulnerable parts of the diesel locomotive.

7. Should it be necessary for the steam locomotive to be attached to the front of a diesel locomotive, the water pick-up gear on the steam locomotive must not be used. The use of the coal dust slaking pipe must be avoided as far as possible, but when this becomes necessary great care must be exercised to avoid coal dust and water obscuring the wind-screen of the diesel locomotive. When working on or adjacent to electrified lines with overhead line equipment, the use of fire irons or coal slaker is prohibited.
8. The vacuum must be created by the leading locomotive only and the **brakes must be applied by means of the vacuum brake handle (Automatic air brake handle on Southern Region)** in order that the brakes will be operated on each locomotive from the leading driving cab. This does not absolve the driver of the trailing locomotive from operating the brake in an emergency. The ejector on the trailing steam locomotive must not be used.

When the diesel locomotive is trailing, the vacuum exhauster(s) must be isolated.

In emergency, should a locomotive which is not vacuum fitted be coupled in front of a locomotive working a vacuum fitted train, the drivers of both

locomotives must exercise the greatest care. When starting, running and stopping the train, Rule 135 will apply, but the driver of the trailing locomotive will be responsible for the working of the vacuum brake and the driver of the leading locomotive responsible for applying the brake of that locomotive when necessary.

9. On the trailing locomotive(s), excepting in the circumstances mentioned in the previous paragraph, all power brake application handles in the **manned** driving cabs must be placed in the normal running position, with the ejector not in use, or vacuum exhauster(s) isolated.
10. Brake/unbraked switch must be in the appropriate position on each diesel locomotive.
11. Air compressors on diesel locomotive must be left running.
12. The Automatic Warning System must be left in the operative position in each **manned** driving cab.

(NOTE: On Diesel locomotives fitted with Western Region A.W.S. together with the holdover device to suppress the action of the Accelerator Valve, the hold-over device must be kept depressed continually on the trailing locomotive(s) when running coupled in **tandem**).

13. Train Stop Trip cocks (if fitted) must be isolated on other than the leading locomotive.
14. Drivers are reminded that the foregoing instructions must be read in conjunction with the Driving Instructions applicable to the type of locomotive of which they are in charge.

COUPLING OF LOCOMOTIVES TO ASSIST AT THE HEAD OF THE TRAIN

COUPLING BETWEEN STEAM LOCOMOTIVE(S) AND ELECTRIC LOCOMOTIVE(S)—TANDEM WORKING

A steam locomotive(s) may be coupled to an Electric locomotive(s) to work a train provided that the following conditions apply:—

1. The electric locomotive should be leading wherever practicable.
2. THE MAXIMUM SPEED OF THE COUPLED LOCOMOTIVES MUST NOT EXCEED THAT SPECIFIED FOR THE LOCOMOTIVE WITH THE LOWEST MAXIMUM SPEED. The driver of the electric locomotive must advise the driver of the steam locomotive the MAXIMUM PERMISSIBLE SPEED of the electric locomotive.
3. Screw shackle must be coupled.

4. Vacuum pipes must be coupled.
5. With the electric locomotive in front, care should be exercised in the use of cylinder cocks on the steam locomotive, to avoid steam entering into the traction motors and dirt being blown into the electric locomotive.
6. Should it be necessary for the steam locomotive to be attached to the front of the electric locomotive, the water pick-up gear on the steam locomotive must not be used. The use of the coal dust slaking pipe must be avoided as far as possible, but when this becomes necessary great care must be exercised to avoid coal dust and water obscuring the wind-screen of the electric locomotive. When working on or adjacent to electrified lines with overhead line equipment, the use of fire irons or coal slaker is prohibited.
7. The vacuum must be created by the leading locomotive only and the **brakes must be applied by means of the vacuum brake handle (Automatic air brake handle on Southern Region)** in order that the brakes will be operated on each locomotive from the leading driving cab. This does not absolve the driver of the trailing locomotive from operating the brake in an emergency. The ejector on the trailing steam locomotive must not be used.

When the electric locomotive is trailing the vacuum, exhaustor(s) must be isolated.

In emergency, should a locomotive which is not vacuum fitted be coupled in front of an electric locomotive working a vacuum fitted train, the drivers of both locomotives must exercise the greatest care. When starting, running and stopping the train, Rule 135 will apply, but the driver of the trailing locomotive will be responsible for the working of the vacuum brake and the driver of the leading locomotive responsible for applying the brake of that locomotive when necessary.

8. On the trailing locomotive(s), excepting in the circumstances mentioned in the previous paragraph, all power brake application handles in the **manned** driving cabs must be placed in the normal running position, with the ejector not in use, or vacuum exhauster(s) isolated.
9. Braked/unbraked switch must be in the appropriate position on each electric locomotive.
10. Air compressors on electric locomotive must be left running.
11. The Automatic Warning System must be left in the operative position in each **manned** driving cab.
12. Train Stop Trip cocks (if fitted) must be isolated on other than the leading locomotive.
13. Drivers are reminded that the foregoing instructions must be read in conjunction with the Driving Instructions applicable to the type of locomotive of which they are in charge.

ASSISTANCE IN THE REAR OF THE TRAIN BY STEAM, DIESEL OR ELECTRIC LOCOMOTIVES

Steam, diesel or electric locomotives may assist trains in the rear provided the following conditions apply:—

1. THE MAXIMUM SPEED OF THE TRAIN, WHILE BEING ASSISTED, MUST NOT EXCEED THAT SPECIFIED FOR THE LOCOMOTIVE WITH THE LOWEST MAXIMUM SPEED.
2. Couplings must be attached where stipulated in the Appendix to the Working Timetable, except that Diesel or Electric Shunting locomotives must not be coupled to the train, unless specially authorised.
3. When working coupled to a train between points stipulated in the Appendix to the Working Timetable the vacuum pipes must be coupled. In such circumstances, the ejector of a steam locomotive assisting in the rear must not be used; diesel or electric locomotives assisting in the rear must have their exhausters shut off.
4. Diesel or electric shunting locomotives may only be used for banking assistance where authorised.
5. When working on or adjacent to electrified lines with overhead line equipment, the use of fire irons or coal slaker is prohibited.
6. Drivers are reminded that the foregoing instructions must be read in conjunction with the Driving Instructions applicable to the type of locomotive of which they are in charge.