



Operational Standards

Defective in service instructions



Issue 1

MAYOR OF LONDON

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I General section

I.1 What this book is for

This book describes the action to be taken when an individual train becomes defective in service.

This book must be used when a train operator has completed defect handling and the train defect has not been cleared.

I.2 Who needs this book

You will need this book if you are carrying out the role of:

- a train operator
- a controller.

I.3 References to other publications

The following publications contain additional information relating to this book:

- Rule Book 4, *Moving a stalled train and authorised detrainments*
- Rule Book 6, *General train operations*
- Rule Book 7, *Train incidents and safety equipment*
- Rule Book 8, *Managing the platform train interface*
- Rule Book *Line Supplements*.

1.4 General requirements of this book

The defects and actions listed in Part A Train systems and equipment and Part B Customer environment must be used along with the details in sections 1 to 3 of this book.

Train operators have a responsibility to report all train defects and record them in the train defect log book. Depending on the type of defect, it may be appropriate to tell the controller.

Train operators must carry out defect handling checks and appropriate isolations in accordance with their training.

Train operators must ask for guidance if they are unsure about how to handle a particular defect.

When a train with a reported defect is out-stabled, the controller must arrange for it to go to a maintenance depot as a priority, for the defect to be repaired.

Service managers will agree the appropriate action with engineers, if a defect affects:

- a fleet, or
- a specific area of a line.

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1.5 Symbols used in Part A and Part B of this book

The following symbols are used in the defect tables:

Symbol	Meaning
	The defective train must be driven at a reduced, safe speed.
	The situation might be caused by track conditions, such as dew, or the defect could have the potential to cause track damage.
	In some circumstances, it might be possible for the train technician to repair the defect.
	Where a defect to be assessed shows this symbol, the assessment must be carried out by a train technician.
	The defective automatic train must be driven in protected manual.

1.6 Stock Indicators

Indicator	Stock applies to	Indicator	Stock applies to
 A60	A60 stock	 92	92 Central stock
 67	67 stock	 92	92 W & C stock
 C69	C69 stock	 95	95 stock
 72	72 stock	 96	96 stock
 73	73 stock	 09	09 stock
 D78	D78 stock		67 and 09 stock

2 Action categories



The defects listed in the tables in Part A and Part B of this book, are grouped with similar or related defects. The tables show the appropriate action for each defect.

2.1 Remain

All concerned



This action applies where the safe operation of the train is not affected. The train can safely remain in customer service for the remainder of the traffic day.

Train operator's actions

Train operator

You must keep your train in customer service unless the controller tells you otherwise.

Controller's actions

Controller

You must manage the service and arrange for a changeover train if required due to service delays.

2.2 Defect to be assessed



This action applies to customer environment and cab defects, which do not affect the safe operation or performance of the train. Generally the train operator will be the most appropriate person to assess the defect. However, in some cases the controller may decide to arrange for somebody else to attend the train and carry out the assessment.

All concerned

Controller's actions

You must decide the appropriate person and location for the train to be assessed.

Controller



If the train technician symbol  is shown for a 'defect to be assessed' item, the assessment must be carried out by a train technician.

All concerned

You must consider:

Controller

- the train operator for technical and general issues with the train
- a train technician if the defect can be repaired on the line, or if the defect requires a technical assessment
- a duty manager, for comfort issues which could be overcome by relieving the train operator, or for customer environment issues
- a station supervisor for customer environment issues, if a duty manager is not available.

If the assessment is not being carried out by the train operator, you must tell the assessor where to meet the train.



Train operator

Train operator's actions

You must:

- keep your train in customer service until the defect is assessed
- carry out the controller's instructions.

Assessor

Assessor's actions

You must assess the situation and tell the controller the details.

Controller (Train operator awareness)

Controller's actions

When the assessment has been carried out, you must instruct the train operator accordingly.

2.3 In service to depot



This action applies when the defect does not have an immediate effect on safety, but where either or both of the following could apply:

- the defect could seriously affect journey time or station dwell times
- the train could have the potential to stall if kept in service for a prolonged period.

The train can safely remain in customer service until the last station before an appropriate depot or siding. The train must then go directly to the depot or siding.

All concerned

Train operator's action

You must:

- tell the controller if the situation changes
- detrain customers at the station the controller tells you.

You must then drive the train to the depot or siding the controller tells you.

Train operator

Controller

Controller's actions

You must

- arrange for the station supervisor at the relevant station, to be advised
- arrange for the defective train to be stabled in a maintenance depot, where possible
- arrange for the duty depot manager to be advised
- monitor the train en-route to the depot or siding
- arrange for a changeover train, if required.

2.4 Withdraw



This action applies when the train is not safe to remain in customer service because either or both of the following apply:

- the train has safety equipment which is defective
- the train is likely to stall.

This action also applies to defects which have been assessed as being likely to cause harm.



A train with a defect allocated a withdraw action must be withdrawn from customer service at the first available station. The train must not be kept in customer service.

Train operator's actions

You must:

Train operator

- tell the controller and follow their instructions
- tell the customers the train will be taken out of service
- detrain the customers at the first available station.

Controller's actions

You must:

Controller

- arrange for the station supervisor at the relevant station to be advised
- arrange for the defective train to be stabled in a maintenance depot, where possible
- arrange for the duty depot manager to be advised
- monitor the train en-route to the depot or siding
- arrange for a changeover train if required.

3 Controller's actions when dealing with defective trains

All concerned



If the defect causes inconvenience or delay to the overall service you might decide to take the train out of customer service early.

Whenever possible a defective train should be sent directly to a maintenance depot, to avoid arranging an additional train move.

3.1 Types of defect

Controller

When a train defect is reported, you must decide whether:

- it is an item to be repaired or replaced, for example a broken seal or used fire extinguisher, or
- it is a defect which will have an entry in Part A or Part B of this book.

3.2 Potential to stall

Where a defect has a potential to cause a train to stall, you must:

Controller

- arrange for the customers to be detrained at the next available station
- monitor the train en-route to the depot or siding.

3.3 Additional requirements

You must consider:

Controller

Train operator
(awareness)

- if a train technician should attend the defective train, or speak directly to the train operator
- if it will be necessary for the train to travel at reduced speed
- the appropriate driving mode for automatic trains.

3.4 Service delays caused by defective trains



Trains which have been allocated or assessed to have a 'remain' action do not affect the safe operation of the train, but may increase journey time.

Controller

You must consider:

- taking the defective train out of customer service if the overall train service is being adversely affected, or
- keeping a defective first or last train with a remain action in customer service, despite journey times being increased.

3.5 Running a train empty whilst a defect or condition is being rectified

All concerned



It might be possible for some repairs or cleaning to be carried out while the train runs empty. Once repaired the train could then be returned to customer service.

3.6 Assessing the effect of other conditions

When a train operator reports a defect on the train you must consider seasonal and other conditions, for example:

Controller
Train operator
(awareness)

- if the train is running in a tunnel or open section
- if the train can be kept in service by relieving an uncomfortable train operator
- if enough time has been allowed for the cab heating or cooling to be effective
- if a noisy defect will affect the clarity of public address announcements.

You must also remember that train performance can be affected by rail head conditions such as dew, or snow on the rails, and reacting to an individual train will not improve the general situation.

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Part A - Train systems and equipment

No.	Defect title	Stocks affected	Action	Notes/References
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Air supply

The following defects will result in a stalled train:

- main line burst or loss of main line air on one or more units
- main line air low, preventing movement
- main line pressure switches tripped in both safety circuits
- train line burst.

1	50% of compressors not running.	A6067C697273 D7892929596 09	Withdraw In service to depot
2	One or more compressors continuously running.	A6067C697273 D7892929596	In service to depot

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3 Compressor overheating and cannot be isolated.

A60	67	C69	72	73
D78	92	92	95	96

Withdraw



09

In service to depot

4 Main line air overcharging.

A60		C69	72	73
D78	92	92	95	96

In service to depot

5 Main line air indication defective, showing low, but no effect on normal operation of train.

A60		C69	72	73
D78	92	92	95	96

Remain

6 Main line pressure switch tripped in one safety circuit.

73	D78	92	92	95
96	09			

In service to depot

Part A - Train systems and equipment

No.	Defect title	Stocks affected	Action	Notes/References
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7	Train line air pressure incorrect or slow to charge.	A60 67 C69 72	Withdraw	
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Air suspension

8	Air suspension deflated.	95 09	Remain	
		92 92	Withdraw	
9	Air suspension deflated one end of a car only.	95	Withdraw	

Automatic Train Protection (ATP)

I 0	Unable to set or move in ATP.	92 96	Withdraw	RS 
I 1	Repeated unexpected ATP intervention.	92 96	Withdraw	 Protected manual if practical.

Part A - Train systems and equipment

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No.	Defect title	Stocks affected	Action	Notes/References
Automatic Train Operation (ATO)				
For 67 stock only, the vigilance button not working will result in a stalled train.				
12	ATO fails to start or defective start buttons, full ATP available.	92 96	In service to depot	
13	Train consistently overrunning platforms in ATO, full ATP available.	92 96 09	Remain	
		67	Withdraw	
14	Train consistantly overrunning signals in ATO.	92 96	Withdraw	

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15 Underrun in ATO.  Remain

Platform Edge Doors (PEDs)

16 PED interlock not obtained in cab, for three consecutive stations, but PEDs operating correctly.  In service to depot

17 PEDs not operating in response to signal to train equipment, at three consecutive stations.  In service to depot

Part A - Train systems and equipment

No.	Defect title	Stocks affected	Action	Notes/References
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Brakes



The instructions for dealing with brake irregularities, tripcock test failure and locked wheels are in Rule Book 7.

General brakes defects

18	Dragging brakes.	<table><tr><td>A60</td><td></td><td>C69</td><td>72</td><td>73</td></tr><tr><td>D78</td><td>92</td><td>92</td><td>95</td><td>96</td></tr></table>	A60		C69	72	73	D78	92	92	95	96	Withdraw	Remote brake release to be used for 73, D78, 92 (Central), 92 (W&C), 95, 96, stocks.
A60		C69	72	73										
D78	92	92	95	96										
19	Faulty run back protection system or light.	<table><tr><td>A60</td><td></td><td>C69</td><td>72</td><td>73</td></tr><tr><td>D78</td><td>92</td><td>92</td><td>95</td><td>96</td></tr></table>	A60		C69	72	73	D78	92	92	95	96	Withdraw	
A60		C69	72	73										
D78	92	92	95	96										
20	Reported wheel slip slide protection fault, braking not affected, one car only.	<table><tr><td>95</td><td>96</td></tr></table>	95	96	Remain									
95	96													

21

Reported wheel slip slide protection fault, braking not affected, more than one car.

95 96

In service to depot

22

Reported wheel slip slide protection fault, braking affected.

95 96

Withdraw

23

Traction brake controller passed end stop, causing emergency brake application, whilst in motoring position.

92 92 95 96

In service to depot

24

Unusual noise during braking.

A60 C69 72 73
D78 92 92 95 96

Defect to be assessed



Part A - Train systems and equipment

No.	Defect title	Stocks affected	Action	Notes/References
Electrically Controlled Emergency Brakes (ECEB), applies to 73, D78, 92 (Central), 92 (W&C), 95, 96 and 09 stocks only				
The following defects will result in a stalled train: • traction brake controller cannot be reset • two safety circuits lost • main line air lost/low main line air • defective deadman failing to release brakes.				
25	One main line pressure switch operated, no loss of mainline air.	92 92 95	In service to depot	
		96	Withdraw	Must be driven in RM.
26	Loss of local brake supply.	73 D78 95 09	In service to depot	09 stock must be driven in PM.
		92 92 96	Withdraw	Central must be driven in PM.