

Module AC

existing section / clause number	existing text	Responsibility indicator	Rule Book module	Handbook	Procedure	Company Instruction	Training & Assessment	Legislation	Remove / delete	Performance +/-	Manpower +/-	Remarks
1	Definitions											
	These terms have the following meanings wherever they are used in this module							✓				
	Along-track conductors A conductor attached to the overhead line supporting structures, which includes return conductors and autotransformer feeders. These are live at up to 25,000 volts (25 kV) and must be considered as dangerous at all times.					✓						
	Automatic dropping device (ADD) The ADD (where provided) will automatically lower the pantograph to minimise damage to the overhead line equipment if the pantograph: • carbons are displaced • head becomes damaged or detached • height limit is exceeded.					✓						
	Automatic power control (APC) track inductor A pair of magnets that are fixed to the track on the approach to and beyond a neutral section and operate the automatic power control system on a train.					✓						
	Automatic power control (APC) The means by which the electric power circuits on a traction unit are: • automatically switched off on the approach to a neutral section, and • automatically switched on beyond a neutral section.					✓						
	Bond An electrical connection to or in the running rail traction return circuit, or in a signalling track circuit.					✓						
	Cant rail The point on a vehicle or traction unit at which the profile between the bodyside and roof changes, as shown by a painted line.					✓						
	Earthed When referring to OLE that is normally live, earthed means connected to the traction return running rail either directly or to a structure that is already connected to that rail.					✓						
	Electric train An electrically powered train which has a pantograph on the traction unit through which electric current is collected from the OLE.					✓						
	Electrical Control Operator (ECO) The person who controls the power supply to the electric traction system and who is responsible for all switching operations.					✓						

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	Electrification fixed equipment All the lineside equipment that is provided for supplying electricity to electric trains. This includes: <ul style="list-style-type: none"> • overhead line equipment and its structures and foundations • the trackside switching stations • transformers • bonding arrangements. 					✓						
	Emergency isolation An isolation that has been carried out by the ECO when it is essential to switch off the electrical supply immediately, to remove danger to personnel from live OLE. An emergency isolation is carried out by the ECO switching off the electrical supply to all lines: <ul style="list-style-type: none"> • between neutral sections (these are typically 15 miles apart), or • between a neutral section and the end of an electrified line. 	✓	✓									AC 1 - HB16 1 Now called an emergency switch off
	Headspan A form of construction where the overhead line equipment is supported by wires crossing the lines below suspended from masts on each side of the track. See diagram AC.1					✓						
	Isolated Electrical equipment is isolated when it is disconnected and separated from all sources of electricity supply in a secure way. This does not apply to return conductors which are part of the return current system and cannot be isolated.					✓						
	Isolation Isolation is the action of causing electrical sections or sub-sections of the OLE to be isolated.					✓						
Info box	Isolation refers to the arrangements for interrupting traction electricity to a particular part of the railway. They include the details of the section or sub-section or group of sections or sub-sections being isolated, together with the dates and times, and as shown in the Weekly Operating Notice.					✓						
Info box	It includes the entire process of switching off, securing, testing and earthing and issue of the Overhead Line Permit.					✓						
	Local isolation An isolation performed locally by a person who has local control over train movements and that is permitted in local isolation instructions.					✓						

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	Neutral section A short section of the OLE between two insulators introduced into the OLE and designed to make sure that two sections that must not be connected electrically are kept separated, even during the passage of the pantographs of electric trains. See diagram AC.2					✓						
	Nominated Person A person who is certificated as competent to: <ul style="list-style-type: none"> • carry out isolations and earthing • issue and cancel Overhead Line Permits 					✓						
	Overhead line equipment (OLE) Wires and associated equipment, suspended over or adjacent to the railway line for supplying electricity to electric trains. See diagram AC.1.					✓						
	Overhead line permit A permit (known as Form C) that is signed and issued by the Nominated Person and given to a controller of site safety (COSS) or designated person (DP), who is to work on or near the OLE. This states exactly what equipment is isolated and earthed and upon which, or near to which, it is safe for the specified work to begin but only as far as the electrical equipment is concerned.	✓	✓									AC 1 - HB16 1
	PANCHEX A monitoring device that measures the uplift of pantographs, highlighting defects that may damage the OLE.					✓						
	Pantograph A device mounted on insulators and fixed to the roof of an electric traction unit. The pantograph head contains carbon strips. When the pantograph is raised and pressed against the underside of the contact wire, electricity is collected from the OLE.					✓						
	Section A length of OLE between switching stations or a switching station and a terminal end.					✓						
	Sub-section Part of a section that can be isolated from all other lengths of OLE by operating overhead line switches.					✓						
	Switched off Electrical equipment that is disconnected and separated from all sources of supply.					✓						

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	Diagram AC.1 Typical headspan construction		✓	✓										AC diagram AC.1 - HB16 diagram HB16.1
	Diagram AC.2 Arrangement of signs and APC magnets for a typical neutral section		✓											AC diagram AC.2
4	Your safety when on or near the line in an AC electrified area													
	Note: The instructions in this module do not provide any personal protection from train movements.							✓						
4.1	Precautions that must be taken													
	Except for the mast/structures, you must treat all parts shown in diagram AC.1 as being live at all times and dangerous to life unless one of the following applies: <ul style="list-style-type: none"> • An Overhead Line Permit has been issued to the COSS or DP. • The OLE has been isolated and earthed and an assurance has been received as shown in local isolation instructions. • The OLE has been made safe in an emergency and an assurance has been received from the ECO as shown in section 6 of this module. 	All concerned		✓	✓									AC 3.1 - HB16 3.1
4.2	Carrying out work above or within 2.75 metres of live OLE (See diagram AC.3)													
	You must not carry out any work above live OLE or within 2.75 metres (approximately 9 feet) in any other direction from live OLE, unless a written method statement has been provided which has been approved by the owner of the equipment.	All concerned			✓									HB16 4.1
	Except in specially defined conditions, you must not use a crane, plant or similar equipment on or near to the OLE unless: <ul style="list-style-type: none"> • the OLE has been isolated and earthed as shown in Network Rail instructions, and • the COSS is issued with an overhead line permit. 	All concerned			✓									HB16 4.1
	If you are using equipment with parts that can be extended, you must make sure that these are only used as shown in the method statement.	All concerned			✓									HB16 4.1
	Wherever possible, you must carry out work so that it will not interfere with the OLE.	All concerned				✓								
	You must take great care not to damage the OLE. If you do cause any damage, you must tell the ECO immediately.	All concerned				✓								
	Diagram AC.3 Carrying out work near to the OLE							✓						
4.3	Objects on or near the live OLE													
	You must treat broken or displaced wires and anything attached to or near to the OLE as live and dangerous to life.	All concerned	✓	✓										AC 3.2 - HB16 3.2

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	You must not remove or approach anything attached to, or near to, the live OLE.	All concerned	✓	✓								AC 3.2 - HB16 3.2
	You must not try to remove or approach an object hanging from, in contact with or close to, the OLE unless you have been specially trained and authorised to do so.	All concerned	✓	✓								AC 3.2 - HB16 3.2
	If you see anything in the OLE that could cause damage if it comes into contact with the pantographs on your train, you must immediately lower the pantographs.	driver	✓									AC 3.2
	You must stop your train as soon as possible and report the incident to the signaller as shown in section 12 of this module.	driver	✓									AC 3.2
	You must, as well as carrying out the instructions shown in section 5 of this module, immediately make sure the following is reported to the ECO: <ul style="list-style-type: none"> • objects that have been thrown onto, are hanging from, or are otherwise touching the OLE • damage to the OLE • OLE that is smoking, excessively flashing or fusing • broken or displaced along-track conductors • broken or displaced wires connected to the OLE • damaged or loose APC track inductors. 	All concerned	✓	✓								AC 3.3 - HB16 3.3
	If the defect will also affect the safe operation of trains, you must first report the defect to the signaller.	All concerned	✓	✓								AC 3.3 - HB16 3.3
4.4	Along-track conductors											
	Along-track conductors carried on insulators must be treated as live and dangerous to life unless they have been earthed as shown in Network Rail instructions and a person who is trained in those instructions has been issued with an Overhead Line Permit.	All concerned						✓				
	The isolation and earthing of adjacent OLE does not necessarily make the along-track conductors safe.	All concerned					✓					
4.5	Continuity of running rails											
	You may treat the traction return current passing through running rails as not being dangerous to life.	All concerned					✓					
	However, if the rails are broken, a dangerous voltage may be present.	All concerned					✓					
	If the defect will affect the safe operation of trains, you must immediately report the defect to the signaller.	All concerned					✓					
	You must report to the ECO any defect that will interrupt the continuity of the running rail, such as a broken or parted rail.	All concerned	✓	✓								AC 3.3 - HB16 3.3

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	However, if you are trained and authorised to do so, you may, on certain types of traction unit, use aluminium ladders that are specially designed, constructed and approved for work and for which local instructions have been issued to: • clean windscreens, or • replace windscreen wiper blades.	All concerned				✓						
	You must take extreme care when carrying or using ladders to avoid coming close to, or in contact with, OLE.	All concerned				✓						
	You must not use a ladder that is longer than necessary.	All concerned				✓						
	You must carry ladders horizontally and, if necessary, get other people to help you.	All concerned				✓						
4.10	Cleaning the outside of vehicles and loading or unloading rail vehicles											
	You must only carry out the following activities at authorised locations and for which local instructions have been issued: • Cleaning the outside of carriages by hand. • Cleaning vehicle ends, traction cab windows and destination indicators. • Loading or unloading open rail wagons by hand. • Loading or unloading single-deck car-carrying vehicles.	All concerned	✓									AC 4.2
	Hose pipes must not be used for cleaning purposes. Each brush or other appliance used for cleaning must have an electrification warning sign.	All concerned	✓									AC 4.2
4.11	Preventing interference or damage											
	You must take great care to prevent interference with any part of the electrification fixed equipment.	All concerned			✓							
	You must not fix any attachment to the electrification fixed equipment unless you have authority from the relevant Network Rail engineer.	All concerned			✓							
	You must get authority from the relevant Network Rail engineer before you carry out excavation or other work that is likely to affect the electrification fixed equipment, particularly: • structures • cables • other supports or covers.	All concerned			✓							
5	Communicating with the ECO											
5.1	Directly or by another person											
	You can contact the ECO directly by radio or by telephone, or you can ask another person, such as the signaller, to contact the ECO on your behalf.	All concerned	✓	✓								AC 5.1 - HB16 5.1

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		Responsibility indicator	Rule Book module	Handbook	Procedure	Company Instruction	Training & Assessment	Legislation	Remove / delete	Performance +/-	Manpower +/-		
	If another person asks you to contact the ECO, you must make sure that you get the necessary information from that person before speaking to the ECO. You must also get any other information that the ECO asks for.	All concerned	✓	✓									AC 5.1 - HB16 5.1
5.2	Identifying the location from where you are speaking												
	If you see an unusual occurrence or incident involving the OLE, you must immediately report it. When reporting it, you must check you are speaking to the correct person. You must then state: <ul style="list-style-type: none"> • your name, job title and employer • the line or lines concerned • the location (for example, the nearest bridge, station, signal or other structure) • the number on the nearest OLE structure or identifying plate (this will tell the ECO exactly where you are) • the telephone number or radio call number (whichever you are using) so that the ECO can contact you if necessary. 	All concerned	✓	✓									AC 5.2 - HB16 5.2
5.3	Formal message numbering system												
	The ECO may use a unique numbering system to handle formal messages. If you are given a message identification number, you must give it each time you speak to the ECO.	All concerned	✓	✓									AC 5.2 - HB16 5.2
6	Switching off the electricity in an emergency												
6.1	Immediate actions												
	a) Types of incident												
	You must immediately contact the ECO (or arrange for this to be done) if you become aware of: <ul style="list-style-type: none"> • a derailment • a lineside fire • a fire on a vehicle or train • a person in contact with or in danger of coming into contact with the OLE • damage to the OLE • an incident or other emergency requiring, or likely to require, the electricity supply to be switched off. 	All concerned	✓	✓									AC 6.1.1 - HB16 6.1
	If you receive a message from another person about an emergency, you must pass on all this information to the ECO.	All concerned	✓	✓									AC 6.1 .1 - HB16 6.1
	b) Reporting the emergency												
	When you contact the ECO, you must first say, 'This is an emergency call'.	All concerned	✓	✓									AC 6.1.2 - HB16 6.1

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	As well as the instructions shown in section 5.2 of this module, you must tell the ECO: • the reason why you have asked for the electricity to be switched off • whether any person is in danger from live OLE • whether the emergency services are waiting to give assistance.	All concerned	✓	✓								AC 6.1.2 - HB16 6.1
	If you are not at the site, you must relay information from the ECO to the site and from the site to the ECO.	All concerned	✓	✓								AC 6.1.2 - HB16 6.1
c) Instructions for train crew												
	If you see an obstruction on a line other than that which your train is travelling, you must immediately make sure the other line is protected by carrying out the instructions shown in section 20 of module TW1 Preparation and movement of trains: General.	Driver, guard	✓									AC 6.1.3
	You must do this before asking for the electricity to be switched off.	Driver, guard	✓									AC 6.1.3
d) Instructions for signallers												
	If you become aware of an emergency, you must carry out the appropriate train signalling regulations.	Signaller	✓									AC 6.1.4
	You must do this before asking for the electricity to be switched off.	Signaller	✓									AC 6.1.4
6.2 Further actions												
a) What the ECO will do												
	On receiving your message, the ECO will decide whether to carry out an emergency isolation or take other actions.	All concerned				✓						
	If the ECO decides to carry out an emergency isolation, this may be done without first arranging a blockage to electric trains.	All concerned				✓						
	The ECO will decide whether to appoint you as the person in charge of the emergency isolation (PICEI).	All concerned	✓	✓								AC 6.2 - HB16 6.2
	The ECO may appoint another person to be the PICEI, in which case you will be told this has happened.	All concerned				✓						
	The ECO will appoint the most appropriate person to be the PICEI.	All concerned				✓						
	The ECO will explain the extent of the emergency isolation to: • Operations Control • the signal box supervisor or signaller.	PICEI			✓	✓						
	If you are not sure who the PICEI is, you must find out from the ECO.	PICEI						✓				

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	You must identify yourself to the appropriate personnel on site.	PICEI	✓	✓								AC 6.3 - HB16 6.3
Info box	Whoever the ECO decides to appoint, other than when a Nominated Person is present, will be referred to as the person in charge of the emergency isolation (PICEI).	PICEI				✓						
b) Staying in contact with the ECO												
	The ECO will tell you the extent of the emergency isolation.	All concerned	✓	✓								AC 6.3 - HB16 6.3
	You must stay in contact with the ECO or, if you have reported the incident through another person, stay in contact with that person until you have been assured that: <ul style="list-style-type: none"> the electricity has been switched off and the OLE has been made safe to be approached but not touched, or for rescue purposes, section 7.1 of this module has been carried out, or other arrangements have been made including who will be regarded as the PICEI. 	All concerned	✓	✓								AC 6.2 - HB16 6.2
	If you are a person passing on this information on behalf of someone else, you must stay in contact with the ECO until an assurance has been given that these arrangements have been put in place.	All concerned	✓	✓								AC 6.2 - HB16 6.2
6.3 Managing the emergency isolation												
a) If emergency services are called to site												
	If the emergency services are called to site, you must tell the incident officer of each emergency service about the presence of the OLE and which parts have been switched off.	PICEI	✓	✓								AC 6.3 - HB16 6.3
b) Shortening the emergency isolation												
	If the ECO can shorten an emergency isolation, this will be done and the ECO will tell you. You must tell everyone at the site about the new limits.	PICEI	✓	✓								AC 6.3 - HB16 6.3
	In these circumstances the electrical sections that are to stay isolated and earthed will be blocked to electric trains before electricity is restored to the other sections.	PICEI				✓						
c) If the power is to be restored to unaffected areas												

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	The ECO will tell you if the power is to be restored to unaffected areas. This will only be done when all the following have been carried out: <ul style="list-style-type: none"> • The emergency isolation has been put into effect. • All immediate actions to deal with the circumstances on the site of the emergency have been put into effect. • The ECO has arranged for the Nominated Person and other suitable personnel to attend (but only if the emergency is going to last a long time) so that the OLE in the affected area can be isolated and earthed and an overhead line permit issued. 	PICEI					✓					
d) If passengers are to be detained												
	If passengers are to be detained, you must make sure that all passengers are kept clear of the OLE.	PICEI	✓	✓								AC 6.3 - HB16 6.3
e) Handing over responsibilities to another person (not the Nominated Person)												
	If you hand over the responsibility of the emergency isolation to someone else, you must tell the ECO immediately. You must give the name, job title and employer of the person taking over from you.	PICEI	✓	✓								AC 6.3 - HB16 6.3
	If you take over the responsibility of the emergency isolation, you must immediately confirm the arrangements with the ECO.	PICEI	✓	✓								AC 6.3 - HB16 6.3
f) Handing over responsibilities to the Nominated Person												
	If the emergency isolation will go on for a long time or it will be necessary to issue an overhead line permit, the Nominated Person will contact you when arriving on site.	PICEI	✓	✓								AC 6.3 - HB16 6.3
	You and the Nominated Person must both contact the ECO to transfer the responsibility of the emergency isolation from you to the nominated person.	PICEI	✓	✓								AC 6.3 - HB16 6.3
6.4 When the emergency isolation is no longer needed												
	As soon as the emergency is over and the affected section can be re-energised, you must: <ul style="list-style-type: none"> • immediately tell the ECO that the emergency is over (or arrange for this to be done) • wait for further instructions. 	PICEI	✓	✓								AC 6.3 - HB16 6.3
	When the ECO receives this information and, as long as the affected section has not been isolated and earthed in order to issue an overhead line permit, the ECO will ask you to confirm that all personnel and materials are clear of the OLE.	PICEI					✓					

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	You must keep the overhead line permit with you and stay on duty and in control of the site of work until: <ul style="list-style-type: none"> work is completed and you and those you are responsible for are clear of the line, or you are relieved by another COSS or DP, in which case you must hand the overhead line permit to that person and both sign it. 	COSS,DP	✓	✓								AC 9.2 - HB16 9.2
	You must tell the new COSS or DP about the conditions shown in section 9.1 of this module.	COSS,DP	✓	✓								AC 9.2 - HB16 9.2
	If you are the new COSS or DP, you must tell the Nominated Person (either directly or through the ECO) that you have taken over the duties of the COSS or DP.	COSS,DP	✓	✓								AC 9.2 - HB16 9.2
	You must immediately tell the Nominated Person if your overhead line permit is lost or misplaced. The Nominated Person will arrange to issue you with another overhead line permit endorsed with the word 'Duplicate'.	COSS,DP	✓	✓								AC 9.2 - HB16 9.2
9.3	Changes of personnel within the work group											
	If other personnel for whom you are responsible come on duty, you must make sure that each person coming onto the site of work after the overhead line permit has been issued fully understands the conditions shown below before being allowed to start work: <ul style="list-style-type: none"> The working limits on the overhead line permit. Where live equipment is adjacent to, or crosses over, earthed equipment, which equipment is live and which is earthed. Whether trains are continuing to run on the lines concerned and, if so, the arrangements that have been made for the protection of staff. 	COSS,DP	✓	✓								AC 9.3 - HB16 9.3
9.4	When the work is completed or suspended											
	When the work is completed or suspended, you must make sure all personnel and materials are removed from anywhere near the OLE.	COSS,DP	✓	✓								AC 9.4 - HB16 9.4
	You must then: <ul style="list-style-type: none"> instruct each person for whom you are responsible to treat the OLE as live and dangerous to life complete the overhead line permit showing whether to the best of your knowledge, the OLE is fit for the passage of electric trains hand the overhead line permit to the Nominated Person who will countersign it. 	COSS,DP	✓	✓								AC 9.4 - HB16 9.4

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	If the driver considers that a train can coast through the affected area you must get an assurance from the driver that: <ul style="list-style-type: none"> any obstruction is not more than 150 mm (approximately 6 inches) below the contact wire not more than two consecutive droppers have come off. the object or defect is more than three OLE structures away from a tunnel or overbridge no other defect is obvious. 	Signaller	✓									AC 14.2.2
	You must get a clear description from the driver of the exact location name or description that can be used to enable a driver, who is to coast under the defective OLE, to recognise it.	Signaller	✓									AC 14.2.2
	You must then deal with following trains, that are to pass over the affected line, as shown in section 16.4 of this module.	Signaller	✓									AC 14.2.2
c) If after the examination trains cannot pass												
	If after the examination it is found that trains cannot pass through the affected area, you must arrange for the OLE to be examined by the infrastructure maintainer's personnel.	Signaller	✓									AC 14.2.3
d) If no object or defect is found												
	If after the examination it is reported there is no apparent damage to the OLE, you may allow normal working to resume on all lines. However, if the examination was carried out from a train on an adjacent line, the driver of the next electric train on the affected line must be told to proceed at caution and not exceed 20 mph.	Signaller	✓									AC 14.2.4
	However, if the examination was as a result of an ADD operation or reported damage to the OLE, you must: <ul style="list-style-type: none"> stop each train on the affected line instruct the driver to proceed at caution and not to exceed 20 mph. 	Signaller	✓									AC 14.2.4
	You must continue to do this until the OLE has been examined by infrastructure maintainer's personnel, as shown in section 14.4 of this module.	Signaller	✓									AC 14.2.4
14.3 Responsible person arriving on site												
	When you arrive on site, you must establish whether the object or defect to the OLE is such that trains, including trains with pantographs lowered, can run or continue to run safely through the affected area	Responsible person	✓	✓								AC 14.3 - HB16 10

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	<p>Following an examination of the OLE, you may allow all trains, including electric trains with pantographs lowered, to pass under objects or defect to the OLE as long as:</p> <ul style="list-style-type: none"> • you are aware of the exact location • any obstruction is not lower than 150 mm (approximately 6 inches) below the contact wire • not more than two consecutive droppers have come off • the object or defect is more than three OLE structures away from a tunnel or overbridge • no other defect is obvious. 	Signaller	✓									AC 15.4
	<p>You must identify a signal that can be maintained at danger, which is a sufficient distance from the affected area that will allow a train to attain 20 mph before arriving at the affected area.</p>	Signaller	✓									AC 15.4 Following RSSB research, speed increased to 80 mph shown in new AC 15.5.
	<p>Trains already beyond this signal must be dealt with individually. The driver of any electric train must be asked if they can attain enough speed to coast with pantographs lowered through the affected area.</p>	Signaller	✓									AC 15.4
	<p>You must stop all trains at this signal and explain to the driver:</p> <ul style="list-style-type: none"> • there is a problem with the OLE • the location name and description of the affected area • if it applies, that the affected area will be identified by a yellow handsignal waved slowly from side to side. 	Signaller	✓									AC 15.4
	<p>You must then instruct the driver:</p> <ul style="list-style-type: none"> • to lower pantographs if fitted, in enough time to make sure that the train coasts through the affected area at not more than 20 mph with the pantographs lowered • that the pantographs, if fitted, must not be raised until the driver is sure all pantographs on the train are clear of the affected area • to obey all signals. 	Signaller	✓									AC 15.4 Following RSSB research, speed increased to 80 mph.
	<p>When the driver has confirmed that all instructions have been understood, you may clear the signal.</p>	Signaller	✓									AC 15.4
	<p>You must make sure that the route is clear through the affected area so that the driver will not encounter any signal at danger.</p>	Signaller	✓									AC 15.4

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	If lowering the pantograph cures the fault, you must: <ul style="list-style-type: none"> isolate the defective equipment, or if this is not possible and the train has more than one traction unit, isolate the pantograph on the defective unit and raise the pantograph on the other unit. 	Driver	✓									AC 16
17.2	If the pantograph will not lower											
	If you cannot lower the pantograph and there is still a fault, you must tell the ECO or arrange for this to be done so that the electricity can be switched off on the appropriate section of OLE.	Driver	✓									AC 16
18	Traction unit stopped in a neutral section or driven off the contact wire											
18.1	Traction unit stopped in neutral section											
	If your traction unit stops with the pantograph in a neutral section and it cannot proceed, you must immediately arrange with the signaller for assistance to be provided and the ECO to be told.	Driver				✓						
	When the driver tells you that the train has stopped with the pantograph in a neutral section, you must tell Operations Control and the ECO.	Signaller				✓						
18.2	Traction unit driven off the contact wire											
	If a traction unit has been driven off the contact wire with the pantograph raised, you must make sure the incident is reported to the ECO.	Driver	✓									AC 17
	You must not move the traction unit back under the OLE until a competent person has examined the pantograph and, if necessary, it has been secured in a safe position.	Driver	✓									AC 17
19	Pantograph monitoring system											
19.1	When an alarm is received											
	If an uplift exceedance alarm is received at a remote reporting location, the responsible person there will tell the train operator to which the train belongs: <ul style="list-style-type: none"> that an exceedance alarm has been received the location of the site concerned which locomotive or multiple-unit is involved. 	Driver			✓							

Module AC

existing section / clause number	existing text	Responsibility indicator	Rule Book module	Handbook	Procedure	Company Instruction	Training & Assessment	Legislation	Remove / delete	Performance +/-	Manpower +/-	Remarks
	When the train operator's control has been told all of the above, they will: <ul style="list-style-type: none"> • identify the train being worked by the locomotive or multiple-unit concerned • identify the most convenient location for the pantograph to be checked • arrange for a competent person to check the pantograph • arrange for you to be told what has happened and what arrangements have been made for the pantograph to be checked. 	Driver			✓							
19.2	Driver's actions											
	You may proceed normally to the location where the train is to be examined as long as: <ul style="list-style-type: none"> • there are no unusual noises • the OLE is behaving correctly • the ADD does not operate • there is no loss of line light. 	Driver			✓							
	If any of these do occur, you must: <ul style="list-style-type: none"> • operate the pantograph down button • immediately stop the train • carry out the instructions in section 12 of this module (whichever is appropriate). 	Driver			✓							
20	Defective automatic power control (APC) track inductor											
20.1	Signaller's actions											
	If you have seen, or are told about, a loose, defective or broken APC track inductor, you must immediately report it to the ECO, who will make arrangements for it to be repaired or replaced. If the defective APC track inductor is on the approach side to a neutral section, you must stop and tell the driver of each affected train to shut off power when passing through the neutral section.	Signaller	✓									AC 18.1
20.2	Driver's actions											
	When you have been told about a defective APC track inductor, you must make sure you shut off power immediately before entering the neutral section	Driver	✓									AC 18.2
21	Precautions to be taken when working on steam locomotives											
21.1	Climbing above floor level of the driving cab											
	Except as shown below, you must never climb on engines or tenders above the floor level of the driving cab.	person working on steam locomotives			✓							
	You may only do this: <ul style="list-style-type: none"> • on an unwired line if there is no OLE above or adjacent to the locomotive, or • on a wired line if the OLE has been isolated and earthed and an Overhead Line Permit has been issued. 	person working on steam locomotives			✓							

Module AC

existing section / clause number	existing text	Responsibility indicator	Rule Book module	Handbook	Procedure	Company Instruction	Training & Assessment	Legislation	Remove / delete	Performance +/-	Manpower +/-	Remarks
21.2	Using fire-irons or the slaker pipe											
	Except as shown below, you must never use any form of fire-iron or the slaker pipe when on or adjacent to electrified lines.	person working on steam locomotives			✓							
	You may only use the slaker pipe in the firebox in an emergency. However, you must take care to direct the jet away from the OLE.	person working on steam locomotives			✓							
21.3	Driving in electrified areas											
	Before entering an electrified area, you must make sure: • the coal is not stacked higher than the driving cab top • fire-irons are safely stored and do not extend above the top level of the cab.	Driver			✓							
	To avoid damaging the electrical equipment, if possible you must avoid stopping with the chimney below insulators or overhead structures.	Driver			✓							
	Additional instructions will be published in the Special Notice about each journey a steam locomotive is to make.	Driver			✓							
	Example of Form AS							✓				