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East Coast Professional Driving Policy

Issue 1 – 2013

SMS 19.5

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Glossary

Acronym	Name
AWS	Automatic Warning System
AUX	Auxiliaries (91/DVT)
DRA	Drivers Reminder Appliance
ECS	Empty Coaching Stock
EO	Engine Only (HST)
ESR	Emergency Speed Restriction
PL	Position Light
NRN	National Radio Network
OHL	Overhead Line
OTMR	On Train Monitoring Recorder
PSR	Permanent Speed Restriction
SPAD	Signal Passed at Danger
SAS SPAD	Starting Against Signal SPAD
SLW	Single Line Working
SOY SPAD	Starting On Yellow SPAD
SPT	Signal Post Telephone
TPWS	Train Protection Warning System
TSR	Temporary Speed Restriction
WSP	Wheel Slide Protection

Introduction

East Coast is committed to the reduction of signals passed at danger (cat 'A'SPAD) and other operational incidents involving trains worked by our Drivers.

It is recognised throughout the industry that the application of 'Professional Driving' techniques is a proven method for reducing incidents, and believe we have the ability to lead the industry, by taking forward the concept of 'Professional Driving'.

Many of the incidents that occur are avoidable by adopting a professional approach to train driving. This policy has been produced to provide you with the latest guidance and identifies 'industry good practice' on the correct and safe driving techniques both within East Coast and the rail industry.

This policy has been developed acknowledging good practice from our Drivers as well as that of other companies within the rail industry, to give maximum benefit in terms of safety, performance and passenger satisfaction. Correctly applied, it will assist you to achieve and maintain high levels of concentration and give you greater job satisfaction.

What is 'Professional' Train Driving?

Professional train driving is an established concept designed to improve Driver safety, provide consistent performance and is used throughout the rail industry.

In simple terms it means:

- thinking ahead
- using common sense
- not taking chances with safety.

It is the railway's own version of similar principles used in defensive or advanced car driving techniques taught to police officers and other professional drivers who need to consider potential risks in advance, rather than letting themselves become part of those risks.

Within East Coast we have developed this concept further to meet the specific nature of our operations and refer to it as the 'East Coast Professional Driving Policy'. Whilst the instructions prescribe techniques to avoid error, further guidance is provided in this manual on other techniques, which Drivers have found beneficial such as the mental operating modes, situational awareness, commentary driving and risk triggered commentary.

Whilst 'East Coast Professional Driving Policy' is about safe driving techniques, it is important to emphasise the concept is not about driving trains slowly or de-skilling Drivers. We operate a high speed service with trains making varied station stops, the core skills associated with your role are to drive trains safely, smoothly and punctually taking into account influencing factors such as weather and low rail adhesion conditions. Knowing the route and the braking characteristics for the type of train you are working and programmed times of the train is an integral part of the process.

East Coast Professional Train Driving?

Your thoughts drive your actions that create outcomes

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The Professional Driver

As East Coast Drivers we are responsible for train safety and operations, and are at the forefront for East Coast, ensuring that our behaviours are focused on excellence in Safety, Service Quality and Productivity.

Drivers undertake communications and remedial actions concerning Safety, Service Quality and Productivity, including with East Coast Control, Network Rail, Train Crew and Passengers as appropriate.

East Coast and our Drivers take a proactive approach toward solving day-to-day issues doing their personal best to ensure the highest safety standards and the avoidance of unnecessary cost. Drivers undertake work for which they are trained and assessed as competent.

Professional driving is a combination of personal mindset, behaviours and driving techniques that minimise the risk of errors.

It includes defensive driving and the control of risks caused by behaviour and other factors arising within and outside the work environment. Professional driving involves meeting and exceeding the minimum competence requirements and seeking opportunities to train for further improvement in safety performance.

Key Principles

The following five key principles summarise the attributes and techniques expected of all East Coast Drivers:

1. Having the right attitude and acting professionally at all times.
2. Preparing yourself by taking personal responsibility for managing lifestyle, fatigue and external problems.
3. Maintaining a professional working environment and controlling distractions.
4. Consistently applying safe working and professional driving techniques in all situations.
5. Remembering: 'If you can't do it safely – don't do it at all'.

Key Principle 1

Having the right attitude and acting professionally at all times

Understanding the issue/risk:

Ask yourself why is it that some Drivers are not involved in operational incidents such as a SPAD or station overrun? An underlying reason is their attitude and professionalism towards the job in terms of appearance, mindset and commitment to deliver high work standards in a consistent manner.

Key personal attributes of an East Coast Driver

Key 'personal attributes' expected of you are:

- the degree of awareness, anticipation and forward thinking
- attention to detail, willingness to work safely and follow rules diligently
- ability to assess risks, prioritise actions and solve problems logically
- clarity and completeness when communicating and seeking advice when necessary
- personal appearance, tidiness, timekeeping and punctuality
- level of confidence and personal organisation
- personal commitment to do well – and to continually learn and self-improve.
- ability to remain calm and focused under pressure
- ability to raise attention levels and switch attention to focus on priorities where necessary
- depth of unconscious competence and ability to multi-task.

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Key Principle 2

Prepare yourself by taking personal responsibility for managing lifestyle, fatigue and external problems

Understanding the issue/risk:

There are a whole range of issues that can impact on performance at work. For example, sleep, medication and home life. It is important to remember because of your role, you have a personal responsibility to come to work in a fit state, both physically and mentally. If you do not, the likelihood of error through fatigue or lack of focus greatly increases.

Typical factors which can lead to incidents:

- not being properly rested
- failing to advise your Driver Manager of personal issues/major life events, which may impact on your ability at work to concentrate
- not being aware that you are more likely to have an operational incident following a few days off or annual leave
- arriving at work late and rushing at the last minute
- not recognising the danger signs of drowsiness when driving trains and taking measures to raise alertness.

Techniques to reduce the likelihood of error:

- ensure you are well rested both physically and mentally. If you believe your fitness could be affected for whatever reason, speak to your Driver Manager
- allowing plenty of time to get to work, this will help avoid the stress of traffic or train delays and rushing at the last minute. This approach enables a calm and controlled start to work with adequate time to prepare and take note of any changes to your work schedule, operational restrictions and late notices etc
- if you are delayed on your journey to work, keep the Train Crew Controller informed
- if you do arrive late at work, never cut corners to make up time
- should anything outside work be seriously affecting your concentration levels such as bereavement/family illness/divorce or financial problems, contact your Driver Manager in confidence
- be aware of the risks when returning from leave. Ensure you are fully familiar with any changes or amendments which may affect your work.

Techniques to reduce drowsiness whilst driving

Examples of the signs of drowsiness are:

- yawning
- your thoughts keep wandering
- you suddenly realise you haven't been concentrating
- your eyes close for a moment or go out of focus
- you have trouble keeping your head up.

However there are temporary steps you can take that should increase your alertness

These include:

- reduce the level of cab heating
- have a drink of cold water, eat a sandwich or a piece of fruit
- if stationary, ensure the brake controller is applied in the 'hold' (step 2) position and walk around the driving cab
- if detained at a station, apply the brake controller into the 'hold' (step 2) position and walk around the platform, but you must secure the cab door and remain in the vicinity of the driving cab
- if you are likely to be feeling tired, drink a cup of strong coffee at least two hours prior to that time
- maintain alertness by using techniques such as risk triggered commentary driving
- if you often get drowsy at work, you may want to ask yourself why? The usual reason is simply that you're not getting enough good deep sleep
- if you feel that you may be affected by drowsiness or fatigue, which you are unable to deal with yourself, **advise your Train Crew Controller and Driver Manager.**

Key Principle 3

Maintaining a professional working environment and controlling distractions

Understanding the issue/risk:

Maintaining a professional working environment is a key part of being an East Coast Driver. If you are not in possession of the right information or fail to manage your work environment (the driving cab) correctly, the likelihood of error through distraction significantly increases. Over the years, ineffective cab discipline has been a contributory factor in a number of rail accidents.

Typical factors which can lead to incidents:

- not being in possession of relevant information about the working of a train
- failing to prepare the driving cab correctly
- not allowing sufficient time to set up the driving cab
- permitting unauthorised persons into the driving cab
- failing to take charge to reinforce driving cab protocol when authorised persons in the driving cab are causing a distraction
- allowing your attention to be distracted by faults, failures and other issues at critical times when approaching signals, stations or junctions.

Being in possession of all relevant information

Techniques to reduce the likelihood of error:

- always check the depot notice cases for information applicable to your work, including SPAD alerts information on multi-SPAD signals, weather and low adhesion warnings
- ensure you have signed for and read your operating notices and you are aware of the location of any temporary speed restrictions plus engineering work etc
- carry all your required publications and make sure your equipment is operational e.g. your lamp works, high visibility clothing is clean, always carry company issue sunglasses, even in the winter when the sun can be low in the sky.

Managing your cab environment

Prepare your cab:

Prior to starting the train, in addition to any train preparation instructions:

- always allow yourself sufficient time to set up your cab correctly, even if the train you are relieving arrives late
- **whilst train punctuality is important, do not become distracted by events.**

Ensure:

- the DRA is set
- bags or other relevant equipment / publications are stored/positioned in a suitable place in the cab where they do not obstruct controls or block any emergency exit

- the sun visor is suitably adjusted for the conditions
- that any doors are correctly secured
- your seat and armrests are adjusted to a comfortable height
- the cab heating/air conditioning is set to the desired level
- you are in possession of the correct stopping pattern for your train and it is displayed in a prominent position
- anything you may need is within easy reach
- you keep the cab tidy and use the litter bin (where provided).

Policy for cab discipline

- keep the cab clean and tidy
- newspapers should not be on display
- mobile phones must remain switched off at all times and kept out of reach
- the use of personal electronic equipment is not permitted at any time
- **exception;** When the train is at a stand and secured with the brake controller in a minimum application of (step 2) 'HOLD' and DRA applied, mobiles may be used in accordance with the rules
- only the Driver responsible for the train, authorised route learners, trainees under instruction and cab pass holders are permitted to ride in the driving cabs of East Coast services, unless otherwise permitted in the rules or local instructions
- take care with drinks, as fluids may inadvertently spill into electrical equipment and cause failures, or scald you.

When the train is in motion

- GSM-R may be used when running on clear signals in accordance with the rules
- never attempt to retrieve an item from your bag
- conversations must not take place with driving cab visitors unless it is necessary, this will ensure there are no unnecessary distractions.

Special care must be taken when approaching:

- stations where booked to call
- low adhesion sites when required to brake the train
- speed restrictions applicable to your train which necessitates braking
- caution and stop signals
- terminal stations and buffer stops.

Except in an emergency, avoid answering the GSM-R radio when:

- braking for a red aspect
- approaching a station or a speed restriction.

Key Principle 4

Consistently applying safe working and professional driving techniques in all situations

Introduction

Probably the most important part of safe driving and working techniques is being fully aware of the hazards and techniques that can be used to minimise the risk of error.

Key principle 4 details the core techniques for driving trains in normal and degraded situations. These are often referred to within the rail industry as 'professional driving techniques'. They are based on 'good practice' developed by Drivers who have achieved the highest standards of safety performance. As a result, this concept has significantly assisted rail companies including East Coast to improve safety performance.

Avoiding start against SPADS

Understanding the risk:

When starting a train, there is the potential for a Start Against Signal (SAS) SPAD. This type of SPAD presents a significant risk as not all signals are fitted with TPWS and the Driver often believes the SPADed signal was showing a proceed aspect and accelerates the train accordingly. Other types of 'Start Against' SPADs occur when a train starts against a yellow signal or starts from a station where the previous signal was displaying caution, and the next signal is beyond the platform end. These are referred to as 'Start on Yellow' (SOY) SPADs.

Typical errors leading to start against SPADS:

- not checking the signal, assuming it is displaying a proceed aspect
- not using the DRA as a safety reminder
- resetting the DRA without checking the signal
- looking at the wrong signal
- failure to control distraction
- failure to remember the aspect of the last signal.

Techniques to avoid start against SPADS:

- avoid being distracted taking over from another Driver
- ensure the DRA is set and don't let resetting the DRA become an automatic action
- if you are in doubt as to a signal aspect or whether the signal applies to you, check with the signaller
- never make assumptions at locations where the signal is usually clear.
- do not start to carry out station/dispatch duties until the starting signal is displaying a proceed aspect
- do not become distracted.

Techniques to avoid SOY SPADS:

- be extra vigilant when starting from platforms where the next signal is not in view after receiving a caution aspect or if a platform starting signal is displaying a caution aspect
- memorise the last signal aspect using risk triggered commentary and limit the amount of traction power taken
- on MKIV trains, set the auto speed limiter (ASL) to 30mph until you clearly see the next signal is displaying a proceed aspect.

Read across SPADS

Understanding the risk:

- where signals are positioned next to each other there is a risk of the wrong signal being observed and obeyed.

What are the risks:

- reacting to an adjacent signal clearing
- not identifying your own signal correctly
- an adjacent signal clearing with your expected route indication
- read across incidents do not just take place at complex locations. Any location that has signals adjacent to each other, especially if your signal is a right hand signal but there is a signal also to the left, has the potential for a read across incident.

How can you avoid reading the wrong signal:

- pre-planning your route from the previous signal and the route indication received
- thinking about where your next signal is located

- actively seeking to locate and identify your next signal
- not rushing or becoming distracted
- the use of Risk Triggered Commentary Driving
- question yourself, "am I looking at the correct signal"?
- starting from a station; ensure you identify the correct signal.

Read through SPADS

Understanding the risk:

Read through can occur when signals in the distance can be viewed at the same time or before your target signal.

Worst case scenarios are where the furthest signal can be clearly observed but your target signal is still out of sight due to obstructions etc.

Route knowledge will tell you where this risk is found, however, foliage clearance or structure removal can lead to new locations of read through situations occurring.

What are the risks:

- reacting to the wrong signal aspect
- signal in the distance appearing prior to your next signal
- signal in distance showing a proceed aspect
- signal in distance observed to change to a proceed aspect
- not identifying the actual location of your next signal
- the potential of having two trains in one section – rear end collision.

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How can you avoid reading the wrong signal:

- being aware of locations where this could occur
- pre-planning your route from previous signal and route indication
- thinking about where your next signal is located
- actively seeking to locate and identify your next signal especially during darkness or poor visibility
- being aware of the circumstances relating to this signal
- use of 'Risk Triggered Commentary Driving' (RTC)
- question yourself, "am i looking at the right signal"
- reporting any new locations following foliage clearance etc.

Driving under restrictive signal aspects

Understanding the risk:

Failure to react correctly to a caution aspect can result in a significant overrun past a red signal. Where fitted, TPWS has the potential to reduce the risk but this depends on the speed and braking capabilities of the train. The train could still reach a conflict point ahead of the signal (e.g. junction/crossover etc.).

Typical errors when running under restrictive aspects:

- assuming that a signal will step up to a less restrictive aspect
- not taking positive action to reduce the train speed
- subconsciously responding to AWS warnings
- lack of concentration.

Minimising error when running under restrictive signal aspects:

- take positive action according to the operating conditions
- this will involve planning ahead and may involve shutting off power, coasting or applying the brake
- always expect the next signal to be displaying a red aspect
- if you are unsure about the aspect you received at the previous signal or you become disorientated by fog, always apply the brakes and be prepared to stop at the next signal
- never 'chase' restrictive signal aspects. Hold back and allow the train in front to clear
- do not allow yourself to become distracted when receiving successive signals showing restrictive aspects or when repetitively acknowledging the AWS warning due to PSRs, TSRs or cautionary signals
- it is easy to become accustomed to cancelling without acknowledging the reasons why
- concentrate on the job in hand – stopping at the red signal.

Flashing yellow aspects:

- when being signalled using flashing yellow aspects always respond to the first sighting of flashing single yellow aspects the same as you would with steady double yellows. Apply the brake and bring the speed of your train under control
- be aware of the line speed and the speed your train is travelling on approach to the junction
- always act on AWS warnings by braking, checking your speed and the signal aspects
- you must not apply power if your train is running at or close to line speed
- the signal after the junction may be displaying a red aspect, so never assume the signal after the junction will be cleared
- control your train according to the signal aspects being displayed
- stay focussed and do not become distracted on approach to the junction
- constantly monitor your speed to ensure you comply with the speed at the junction
- look at the signals as you approach them because OLE masts on curves can make steady yellow aspects look like they are flashing.

In summary the approach to a junction using flashing yellow aspects presents the following risks:

- a SPAD at the signal immediately after the junction
- failing to reduce the train speed sufficiently when approaching the diverging junction
- interpreting the signal sequence incorrectly i.e. flashing yellows instead of steady yellows.

Stopping at red signals

Understanding the risk:

The primary risk is 'SPADing' the signal and fouling the conflict point and colliding with another train.

Errors that are typically made by Drivers:

- misjudging braking and approaching the signal too fast
- assuming the signal will clear on approach
- aiming to stop too close to a signal when there is no requirement to do so
- focusing attention on other issues rather than the 'red signal ahead'
- reading through or reading across to another signal
- treating the approach to red aspect signals within station platforms differently to other signals and misjudging braking or being caught out by low speed slides.

Techniques to avoid SPADs when approaching signals:

- reduce train speed gradually and continuously when approaching a red signal, planning to stop well before the signal
- be aware when you are approaching a signal you have not stopped at before or other signals where you are uncertain of their exact location
- beware that the signal may have restricted sighting – do not wait until you view the AWS magnet
- allow for the unexpected such as low adhesion
- if a signal clears from a red to a cautionary aspect as the train approaches it; remind yourself of the cautionary aspect using risk triggered commentary. Also limit acceleration and do not exceed 30 mph
- treat approaching a red signal in the platform the same way as approaching any other stop signal
- focus on the 'red ahead'.

The following speed/range must be used on the final approach to a signal at danger under normal rail head conditions:

- aim to be doing no more than 20mph at 200 metres from the signal and stop 20 metres from the signal.

Exception to the policy of stopping a train 20 metres from a signal:

If your train has to proceed closer to a red aspect because the signal cannot clear until the train is near to it or at platforms where the signal is closer than 20 metres from the stopping point, ensure your train is travelling at no more than 5mph approximately one engine/coach length from the signal, prior to bringing your train to a smooth stop at the defined stopping point.

When you have stopped at a red aspect, 'apply' the Driver Reminder Appliance (DRA), place the brake controller into (step 2) 'hold' and the master switch to engine only (EO)/Aux.

Semaphore signalling

Observing a semaphore stop signal clear and assuming the next signal is also clear:

A common cause of SPADs in semaphore signalling areas is when a Driver passes a distant signal at caution, then the home signal, or any subsequent stop signals controlled by the signal box are observed displaying a proceed aspect prior to the train coming to a stand, or nearly to a stand at the signal.

A number of Drivers have incorrectly assumed this means that subsequent signals controlled by the signal box, including the section signal, are displaying a proceed aspect.

This situation can be caused by:

- signaller error, in either clearing the signal too early or misjudging the position of the train on approaching the signal
- approach view of the stop signal is restricted due to curvature of the track or poor visibility, such as fog.

Only when the distant signal is in the clear position, can you be certain all associated stop signals controlled by the same signal box are also clear. If the distant signal is at caution be prepared to stop at each stop signal worked from the same signal box.

The relevance of the 'release speed' of a semaphore signal:

Whilst some Drivers perceive it to be the case, the speed at which a semaphore signal moves to a proceed position is not related to the aspect of the next signal.

Handsignals at level crossings:

Beware of the risk of handsignals conflicting with fixed signals when making movements over a level crossing during failure conditions and during single line working.

- Ensure any instructions or handsignals received are fully understood and correct
- A green handsignal displayed at a level crossing under local control provides authority to pass over that level crossing only. This handsignal does not apply to any fixed signals. (Unless special instructions contained in the Sectional Appendix exist)
- NEVER accept ambiguous or incorrect instructions or handsignals. Your train must remain at a stand until a clear understanding of what is to take place has been reached; if in any doubt confirm the requirements of the movement with the signaller.

Reducing risk at stations

Understanding the risk:

Since TPWS has been fitted and reduced the risk of SPADs by 90%, the highest proportion of the risk on the UK rail network is now associated with passengers at stations with slips, trips and falls.

From your perspective the key areas are personal injury to passengers due to:

- trains rolling in the platform after the doors have been released
- falling from trains when doors are released when a train is not fully berthed within a platform
- degraded working of the train if it has to return to the platform following a station overrun, for example an un-signalled move.

Factors leading to incidents/injuries in stations:

- misjudgement of braking, train handling or rail head conditions
- having an aggressive approach to braking and relying too much on heavy braking as opposed normal braking technique
- not being aware of the stations with a history of overruns
- not stopping at the correct stop marker to ensure safe dispatch of the train
- when the train is not fully platformed.

Techniques to avoid station overruns:

- avoid aggressive braking techniques
- have an 'ideal braking' area for each station rather than a fixed braking point – allow for the unexpected such as low adhesion
- always aim for a smooth controlled progressive stop to ensure a high level of customer comfort is maintained. Don't 'fan' the brake.

Your approach speed to a platform will be dependent upon:

- gradient (rising or falling or gradient change)
- the length of platform (long or short)
- position of stop markers/equipment on platform
- braking capabilities of the train
- the train timings.

The skill of driving is to stop smoothly, at the right point whilst maintaining the programmed train timings.

Minimising the likelihood of personal injuries to passengers

Stopping in the right place:

Whilst you should never aim to stop with a jolt, it is very important to ensure you stop at the optimum position for train dispatch (+/- 1 metre of stop marker).

If you do overrun a platform or stop short, you must give 2-2 (do not open doors) on the Driver/Guard communication buzzer. Contact the Guard and Signaller where necessary, **do not re-apply power if your train has come to a stand.**

If you have the authority to return to the platform from the Signaller in accordance with the rules, remember (irrespective of the distance overrun) you must change ends and drive back into the platform.

Approaching buffer stops

Understanding the risk:

Buffer stops provide very little give and even a low speed collision at less than 3 mph can cause serious injury to passengers and damage to equipment.

Factors leading to buffer stop collisions:

- not progressively reducing the train speed along the platform
- approaching the final stages of braking too fast to correct a potential error
- fanning the brake or releasing the brake at a critical point
- not allowing sufficient margin for misjudgement.

Techniques to avoid buffer stop collisions:

- aim for a maximum speed of 15 mph at the platform ramp when approaching terminal stations or bay platforms, unless a lower restriction applies
- control the speed reduction progressively along the platform length using the brake as required
- make sure you have shut off power
- ensure you are travelling at no more than 10 mph as you pass over TPWS equipment on the approach to buffer stops
- in a platform that has an uphill gradient, if you need to apply power to reach the platform end, use the lowest power setting available for the shortest time possible and take extra care. Make sure in the final few metres when braking, that you have shut off power completely
- always stop the train a minimum of 2 metres from the train in front when entering an occupied platform under permissive working or 2 metres from buffer stops, or at a defined stop marker
- although 2 metres is the minimum, beware that if you stop too far from the buffer stops, you may create additional risks for trains when you commence your return journey, as the rear most cab may be closer to, or even beyond the starting signal
- remember that there is always a risk of rail contamination in stations that could provide low adhesion conditions. Always be alert and prepared for a low speed slide when approaching buffer stops
- remember in sidings and depots, the risk of collisions is greater due to oil contamination – keep your speed below 5 mph when approaching buffer stops and stop 2 metres away from them
- if you are in doubt as to whether your train will stop, apply the emergency brake.

Minimising error during permissive working

Understanding the risk:

- risk of collision if the Driver fails to realise that the line ahead is occupied or is caught out by unexpected low adhesion conditions
- risk of the Driver taking a signal cleared for another train
- passengers injured during coupling/uncoupling (degraded working)
- risk when uncoupling and having a SPAD at the signal in rear.

Factors leading to incidents where permissive working is authorised:

- failure to appreciate the risks outlined above
- not following the rules and procedures.

Techniques to avoid incidents during permissive working:

- always be prepared for the line ahead to be occupied and beware that TPWS will not provide the same level of protection
- always ensure you can stop within the distance you can see the line is clear
- thunderbird/rescue loco operations:
    - stop at least 2 metres short of the train you are to couple up to
    - beware of low speed slides
    - when you are to couple to another train, do not do so until instructed
    - before coupling, ensure all doors are closed and the train is secure. Remember to stop 2 feet away from the other train checking both couplings are in line
    - when uncoupling, do not set back any further than 2 feet from the front portion (SPAD RISK)
    - remember permissive working is a rare operation involving East Coast Drivers.

Reducing the risk of pantograph damage

Understanding the risk:

There are numerous operational risks to pantographs becoming damaged i.e. overhead structural damage, carbon wear due to heavy frosts, entering unwired routes, etc. It is essential that Drivers follow the correct procedures as failure to do so may cause delays, cancellations and degraded working.

Factors leading to pantograph damage:

- low levels of situational awareness and failing to appreciate that some routes, platforms or sidings are not wired
- not knowing the 'hot spot' locations where incidents have happened and why.

Techniques to avoid damage to pantographs:

- know the routes, platforms and sidings which are unwired
- know the hotspots where Drivers have been caught out and the reason why.

Avoiding wrong routing

Understanding the risk

The key risks include:

- a train entering a platform which is too short to hold the full length of the train or the platform may be unwired
- a train entering a route which the Driver is not competent to operate over and degraded operations are required to get the train back to right line.

Examples of factors leading to wrong routing:

- lack of detailed route knowledge when encountering infrequently made movements
- over reliance on past experience – not checking the route and assuming the correct signal has been cleared.

Typical issues that can influence this type of error include:

- restricted sighting of the junction signal
- trains on adjacent lines obscuring your view of the junction signal
- being aware that the junction is a hotspot for wrong routing.

Techniques to avoid wrong routing:

- make yourself aware of the locations where there is a history of wrong routing of trains and the reason why
- don't be misled by a green signal at a junction and start to relax, check the route or a junction indicator has been cleared and the indicator is the correct one for your route
- if you are not sure whether the route is correct – check with the signaller first – stop and ask!
- know what route you are expecting before you see it.

Minimising error during degraded operations

What is degraded operations?

There are many reasons for degraded operation such as track circuit failures, signal failures, examining the line for track defects and bridge strikes. This will often result in trains being authorised to pass a signal at danger or implementation of temporary block working etc.

Understanding the risk:

The key risk associated with this type of working is that when a train is being authorised to pass a signal at danger, the protection afforded by the interlocking of the signalling equipment is no longer provided.

In summary, the safe working of the train is solely in the hands of you and the signaller. If arrangements are not fully understood or set up correctly, this can result in a:

- SPAD
- points run through
- derailment/collision or other operating incident.

Examples of errors:

- failing to reach a clear understanding of what is required with signallers/hand signallers
- during temporary block working, failing to appreciate the limits of authority and making assumptions where the last signal is located.
- driving too fast when required to proceed at caution.

Techniques to reduce the risk of error:

- always check and double check what is required and the reasons why
- remember when proceeding at caution you 'must' be in a position to stop short of any obstruction regardless of the conditions
- check both facing and trailing points and don't make assumptions that the signaller has set these correctly.

WE CAN ALL MAKE MISTAKES;

- don't assume when a 'proceed on sight' (PoSA) signal is cleared that the line ahead cannot be occupied
- remember – Just because someone has many years experience or appears to be confident it doesn't mean that they are right. If it doesn't feel right from your perspective, it probably isn't. Stop and ask
- tick off the signal numbers on the temporary block working ticket as you pass them.

Avoiding shunting incidents

Understanding the risk:

Shunting is a vital component of train driving within East Coast, but introduces a number of risks which may result in SPADs, collisions, derailments and may result in personal injury. Often these can be overlooked by Drivers who perceive shunting as a low risk activity.

Factors leading to shunting SPADs/collisions and derailments:

- failure to reach a clear understanding due to poor safety critical communications
- failing to check that a signal is displaying a proceed aspect
- failure to locate a signal or reading the wrong signal
- assuming fixed signals apply to your train when other movements are taking place
- when not sure of a route, taking a chance that the signal applies to your train
- stopping too close to a shunting signal, making it difficult to read
- not checking points are set correctly
- when stabling trains, leaving vehicles foul of other lines and not reporting it
- taking a chance that a train is clear in an adjacent siding
- not knowing the signals/locations where it is easy to make an error.

Techniques to avoid shunting SPADs, collisions and derailments:

General Principles:

- ensuring that you and others involved apply the same professional standards in shunting in depots/yards as you do on the mainline
- ensure all persons involved in a shunting movement fully understand what is required and that a clear understanding is reached before any movement commences
- if no shunter or responsible person is provided at the location, take the lead in communications
- know which points and/or signals are applicable to the movement including the direction and limit of the shunt movement especially where shunting signals / depot protection are involved
- if you lose sight of any hand signals or lose communications with the shunter – stop the movement
- make sure there is no risk of miscommunication. Use the phonetic alphabet and maintain the correct safety critical communications protocol for all communications relating to shunting
- if it is a complex movement, split it up into smaller movements, which can be easily remembered and communicated to relevant parties
- if you are not sure of the movement – don't take a chance – ask.

Avoiding shunting SPADs:

- use the DRA (if fitted)
- always check and double check the signal
- if you are not sure whether the signal applies to you – never take a chance
- treat a shunting signal in exactly the same manner as a main aspect signal by stopping your train at least 20 metres from the signal
- at locations where this is not possible, approach the signal with extreme caution ensuring you stop the train with the signal still in view
- when stopping behind a signal and stabling a train or changing ends, where practicable, allow at least 20 metres. This technique enables the Driver of the next movement to have a clear view of the signal
- know your multi-SPADed signals.

Avoiding collisions, derailments and damage to points:

When other movements are taking place or more than one train is in a siding ready to depart, make sure any instructions, hand signals or fixed signals are for you – never take a chance.

- make sure all points for the movement have been correctly set
- maintain a good lookout for trains/vehicles left foul. Do not take a chance with clearance
- when stabling trains make sure the train is left in clear of the fouling point for the line concerned, do not stable the train over points or a de-railer
- if a train cannot be left in clear, ensure the person in charge of the depot is informed.

Avoiding ECS SPADs

Understanding the risk:

Empty Coaching Stock (ECS) workings is a low percentage of the overall train working but can present a high risk regarding SPADs.

Factors leading to ECS SPADs:

- feeling more relaxed and under less pressure when working ECS, this is often due to the simple fact that there are no passengers or staff onboard and therefore pressure is reduced
- becoming inattentive as movements often take place at the start or end of a shift when your mind is focused on other issues.

Misjudging speed and braking due to:

- running at higher speeds
- being stopped at signals that you are not expecting to stop at or have never previously stopped at
- anticipating that a signal will clear
- taking a wrong route due to being signalled differently to normal main line movements.

Techniques to avoid ECS SPADs

- stay focused, be aware of the risks and apply the same professional approach to driving as when working passenger trains
- be prepared to be stopped at signals you have never stopped at before
- beware that you may be routed to a different line than normally used for passenger train movements
- appreciate you may be in a queue of trains awaiting acceptance to a depot or sidings
- never anticipate or assume signals will clear.

Handsignals at signals

You must only proceed after you have received verbal instructions from the handsignaller to pass the signal at danger and he has exhibited a yellow handsignal after removing the detonator from the line.

If you are in any doubt about the handsignallers instructions or the movement to be made, you should personally contact the controlling signaller before proceeding.

Seasonal driving and risks

Driving during low adhesion

Understanding the risk: What causes low rail head adhesion conditions?

The rail surface and the wheel treads become coated with a range of contaminants, particularly crushed leaves, which, when combined with moisture particularly in the form of dew or condensation on the rail, reduces the adhesion level.

How much can it affect the braking of a train?

Under certain conditions severe rail contamination can be experienced often due to leaves but sometimes other pollution of the rail head. This can result in the braking capability of the train being reduced by as much as 75%.

When is a Driver likely to experience low adhesion conditions?

- it is particular problem during the autumn leaf fall season
- at sites of known low rail adhesion
- locations where high levels of line side vegetation are provided – cuttings can present a particular problem
- during light drizzle and immediately following stormy conditions resulting in a high amount of leaf fall over a short period of time
- over routes which are lightly used and particularly for the first train over a route, after a heavy storm
- areas in shade not exposed to sunlight.

Low adhesion conditions can also occur outside of the leaf fall season and at any time of the year if the weather conditions are poor. For example: during freezing conditions, or when it is damp or during light rain or drizzle, particularly following a long dry spell.

Other factors which influence wheel slide:

- defective rail mounted flange lubricators
- grease spilled at points and crossovers, spilled diesel fuel and lubricating oil from locomotives etc.
- airborne pollutants, particles, chemicals near industrial sites and large built up areas
- leaking hydraulic fluid from on-track machines (OTMs).

Factors leading to low adhesion incidents:

- not being aware of the locations where low adhesion exists and instructions/ notices of changing conditions
- not taking into account the signs indicating low levels of rail adhesion
- failure to carry out frequent running brake tests
- aggressive driving
- incorrect braking technique for low adhesion conditions.

Techniques to avoid low adhesion incidents

Being prepared:

Beware of contaminated or 'black' rails, damp conditions and known areas of low adhesion in previous years. These are the known poor rail adhesion sites that are published in the Sectional Appendix and Weekly or Periodical Operating Notices.

Make sure you have read any late notices regarding adhesion. A Rail Head Treatment Train (RHTT) may not have run and you will need to take this into consideration when braking.

When driving, look for the signs of low adhesion such as:

- changes in weather/rail head conditions
- the driving wheels spinning when the train is accelerating
- when conducting running brake tests or when braking the train for speed restrictions, stations or signals, the speedo fluctuating/wheel slide or WSP activity.

Applying power in low adhesion conditions:

- when accelerating, use a lower power setting to start away. If wheel spin occurs, your actions will depend on the location and type of traction train you are driving
- use the sanders (if fitted) under acceleration.

Braking trains in low adhesion

- carry out frequent tests of the brake when running, this will give you the feel of the rail conditions and enable you to adjust your braking technique accordingly
- East Coast trains may be in short formation. Beware that this type of train may have a much higher occurrence rate in terms of low adhesion incidents

- use the brakes in accordance with the braking instructions. The braking techniques may be different dependent on the type of train and formation you are driving. However, in general terms Drivers should brake earlier taking into account that under some circumstances braking distances will need to be significantly extended
- if the train is having difficulty in stopping, let the WSP do its job and immediately ensure that sanding equipment is activated accordingly, where fitted
- be careful on the final approach to signals or stations, be prepared for low speed slides and do not run the risk of overrunning or failing to stop at a red signal even if it means increasing the running times
- if you are the first train of the day over the route, or the route is lightly used – be especially careful
- if you are the first train following the Rail Head Treatment Train, or have just passed one on an opposite running line when jetting, be prepared to find low adhesion conditions caused by residual spray from the water jets
- if there is any doubt that the train will stop safely at the intended point or there is a risk of the train over speeding on a speed restriction, apply the emergency brake.

Reporting 'Exceptionally Poor Rail Adhesion'

'Exceptionally poor rail adhesion' is defined as when a Driver is applying 'low adhesion driving techniques' and still experiences significant difficulty in stopping the train. If you encounter 'exceptionally poor rail adhesion' you must report this to the signaller as follows:

- **non-listed low adhesion sites**
  When you experience conditions likely to cause difficulties in stopping at a site not listed as a low adhesion site in the Sectional Appendix, you must report this as 'low rail adhesion'.
- **site listed as low rail head conditions**
  When you experience conditions likely to cause more than the anticipated difficulties in stopping at a listed site, this must be reported as 'Exceptionally Poor Rail Adhesion'. Adopt a significant reduction in train speed when approaching these areas.
- **controlled test stops**
  If the signaller asks you to carry out a 'Controlled Test Stop' you must brake the train using the technique that would normally be applied for the prevailing weather and rail conditions. Do not brake as if you were expecting exceptional rail head conditions, as this would defeat the object of the 'Controlled Test Stop'. You must then advise the signaller of the result and if the rail head conditions should still be considered as 'exceptionally poor'.

DO NOT CARRY OUT A CONTROLLED TEST STOP ON APPROACH TO RED SIGNALS

Act on any information you receive about railhead conditions from the Signaller. You may hear general radio calls regarding railhead conditions. These may be repeated a number of times. Do not contact the Signaller for clarification, unless in an emergency, as this may overload the Signaller at a time when he/she already has many other things to do.

Severe weather – snow and fog

Understanding the risk:

- signals can be obscured by snow
- reduced braking or loss of braking as the brake gear becomes frozen or a film of water builds up on the surface of the disc causing the brake pads to aquaplane
- driving in snow can significantly reduce visibility, particularly at night. Visibility of familiar "landmarks" will be impaired possibly leading to you becoming disorientated
- the normal sounds of the train running can be muffled
- icicles building up on bridges/tunnels causing damage to trains
- excessive arcing of the overheads
- warning horns and other equipment becoming blocked by snow
- like snow, fog can significantly reduce visibility and cause you to become disorientated.

Factors leading to incidents in snow/fog:

- not conducting additional running brake tests required by the rules
- taking a chance the aspect of a signal is showing proceed.

Techniques to avoid incidents during severe weather:

- carry out all additional running brake tests as required by the rules and East Coast braking instructions for the type of traction you are driving
- never take a chance on a signal aspect that is obscured by snow
- if you become disorientated by snow or fog, slow down and get your bearings
- periodically check that the train warning horn is working correctly – do this at a location which will not cause a nuisance to the public
- report any significant build up of icicles or arcing of train power supplies
- East Coast's policy 'driving in snow conditions' can be found in the East Coast Appendix to the Rulebook section 28.

Sunlight

Understanding the risk:

The sighting of signals can be significantly impeded by bright sunlight. This can be experienced on all routes at certain times of the day and time of year. This can result in the signal aspect being very difficult to see or in extreme circumstances a phantom (ghost) aspect displayed. Driving into direct sunlight can also cause significant glare.

Typical errors:

- misreading the signal aspect
- assuming a signal aspect is showing a clear aspect.

Reducing the risk of misreading a signal due to sunlight:

- stop your train and contact the signaller for clarification
- correctly adjust the sun visor when driving into bright sunlight
- use only East Coast authorised sunglasses.

Eco driving and environmental issues

At East Coast our aim is to significantly reduce energy, fuel consumption and CO^2 emissions. We are depending on your assistance and professionalism to accomplish this objective.

Key principles:

1. Use of the power controller
   Start the train using a low power setting, (notch 2 or 3) taking gradients into account and allow the train to reach 3 to 5 mph before moving the power controller to a higher setting.
2. Run on time – not early.
3. Know your route and gradients; always use gradients to the best advantage, using them to coast as far as possible. Use landmarks, where possible as markers to coast.
4. Stabling trains; shutdown engines where diagrammed.
5. Remember your priorities, in the following order:
   1st: Safety
   2nd: Punctuality
   3rd: Energy Efficiency
6. Use of warning horn
   Only use the warning horn in accordance with the rules for the safe operation of trains. Avoid unnecessary or over use which results in noise pollution.

Communications

Understanding the risk:

Poor communication has been a contributory factor in 90% of all railway incidents/ accidents.

Typical factors associated with communications:

- failure to reach a clear understanding
- not using safety critical communication protocol
- communicating non-essential information at critical times resulting in distraction
- not setting/changing radios correctly at the start of a journey or when changing from NRN to GSM-R radio areas
- not de-registering GSM-R after a journey.

Minimising the risk of miscommunication:

- to prevent misunderstandings, always use the phonetic alphabet. This is especially important when stating signal numbers or train headcodes
- where possible, use the Rule Book pre-defined phrases
- repeat any message you have been given so that the caller can be sure you have fully understood it
- ensure the signaller repeats back any messages you give
- do not move unless you are 100% sure of the instructions you have received. If you are in any doubt whatsoever, do not move

- ensure your radio is set up correctly at all times. Remember to change over from NRN to GSM-R where required
- remember that most messages to Signallers, Control Centres and Engineering Depots are recorded.

In an Emergency:

If you feel you have insufficient distance to stop safely (e.g. it is likely that you will pass a signal at danger without authority, or overshoot a platform), you must use an emergency brake application, rather than a full service application. This guarantees achieving the maximum available braking for the train.

If a collision is unavoidable:

After the emergency brake has been applied, the following actions, provided there is sufficient time available, should be taken:

- press the emergency button on the cab radio. Remember that the 'E' button on NRN or the 'Red' button on GSM-R must be depressed for at least a second
- exit the driving cab into the passenger compartment if in a DVT or through the equipment bay into the rear cab on a class 91.Through the engine compartment into the luggage area of an HST.

KEY PRINCIPLE 5

Remember: 'If you can't do it safely – don't do it at all'

You are working in an environment where the safety of our employees and customers is foremost. You must never engage in improper conduct or other behaviour that is likely to endanger your safety or the safety of others.

The rules, operating instructions and associated instructions are there for a reason and must be complied with at all times. East Coast requirements do call for train punctuality and reliability, but this must be balanced against safety.

Always put safety first.

REMEMBER

- if you see a potential hazard, report it immediately before somebody else has an incident!
- if something you are doing 'feels' wrong, it probably is. Immediately stop and ask the signaller before continuing.

Human factors

What are Human Factors?

A simple way to view human factors is to think about three aspects: the job, the individual, the organisation and how they impact on people's health and safety-related behaviour.

The individual

People bring to their job personal attitudes, skills, habits and personalities, which can be strengths or weaknesses depending on the task. Some characteristics, such as personality are more firmly fixed. Others, such as skills and attitudes, may be changed or enhanced. The rail industry attempts to address this risk with, for example, the use of psychometric assessment on initial selection, particularly the ability of a candidate to concentrate and work alone. Other issues include, medical fitness, vision and hearing. As most people will be conscious of, 'Driver attitude' is often a key factor in a number of operational incidents and work performance.

The job

This refers to 'the job' which should be designed to take into account the limitations of human performance, the design of the workplace and working environment. Examples of this within the rail industry include the readability of signals in accordance with the driving cab sightlines, design of driving cab controls, shift pattern and roster design etc.

The organisation

Organisational factors have the greatest influence. In summary this consists of:

- policy and commitment of the company to safety
- safety culture of management and supervisors
- responsibilities for safety being clearly defined
- the provision and adequacy of briefing and training
- safety performance monitoring and audit.

Examples of errors and violations

What is the difference between an error and a violation?

An error

This is an action or decision which is not intended, but involves a deviation from the required accepted standard and which leads to an undesirable outcome. It may just involve a near miss or can result in an incident/accident such as a SPAD or station overrun.

Examples are:

- misjudging braking on the final approach to a signal or station
- misreading a signal
- misjudging braking and slightly overrunning the stopping point at platform marker boards
- taking a wrong route at a junction.

A violation

This is a deliberate deviation from a rule or procedure.

Examples are:

- use of a mobile phone in an unsecured driving cab or whilst the train is moving
- failing to brake the train correctly when passing restrictive signals assuming that the signal will change to a proceed aspect based on previous experience
- assuming that a signal imperfectly displayed is showing a proceed aspect
- permitting unauthorised persons in the cab
- coming to work under the influence of alcohol or drugs
- using electronic gaming or music equipment in the driving cab
- driving a train/locomotive from the wrong cab
- after overrunning a station, not reporting the incident/setting back without authority
- driving a train intentionally over the permitted maximum speed
- violations may result in disciplinary measures as well as support through the competence management process. In serious cases of violations, a Driver may be removed from driving duties and under safety legislation may be fined or subject to imprisonment.

Techniques to reduce the likelihood of error

Managing distraction and refocusing

Remember as a professional your task is to ensure the safety of the train and passengers. You need to prioritise your attention and actions. On a journey you will encounter many potential distractions at stations or on the move. Distractions may consist of passengers, staff, other trains/Drivers, encountering speed restrictions in relation to signals etc.

Good practice example – refocusing after distraction

If you become distracted and need to bring your attention back to the core task, or if you have been running on mental autopilot for a period, and want to come back into a state of conscious control, there are some simple strategies, which can be used to 'refocus' thoughts on the task in hand. Here are sets of simple questions you can ask yourself:

- what colour was the last signal?
- where precisely am I on the route?
- where is the next signal?
- when should I be reducing speed?
- am I travelling at an appropriate speed regarding speed restrictions and external conditions?

If you find yourself distracted by a thought or an event:

- tell yourself to focus on driving
- to help 'clear your head', talk aloud, commentate on what you are seeing, thinking and anticipating as this can help you re-focus
- tell yourself to 'park the thought' until the end of the journey
- decide to tell someone later on – having a plan is important
- stay focused when dealing with on-train faults and failures such as tripping circuit breakers and engine shut downs/loss of power. Deal with them when stopped under the protection of fixed signals after you have informed the Signaller.

The guidance above does not comprise an exhaustive list.

Situational awareness

Situational awareness is a key human factor in the train driving task and comprises of:

- perception [noticing] of the elements/hazards in the driving environment
- the comprehension of their meaning taking into account rules, traction, route knowledge, professional driving techniques
- the projection of their status in the near future (anticipating future events).

In simpler terms, situational awareness is knowing what is going on around you and minimising the risk of error. Having a high level of situational awareness can turn a good Driver into an excellent Driver. Anticipating what is about to happen and making decisions requires considerable effort. It is not enough to use your expectations about what might happen; you need to look harder, question what you are seeing, consider all reasons for what is happening and combine your observations to decide what actions are required.

How to remain alert to your surroundings?

- by continually scanning your cab and the environment ahead for hazards – 'switching attention'
- by filtering the important and unimportant information – 'information filtration'
- by allocating your attention to all the important and relevant information – 'attention distribution'
- by not becoming transfixed on a particular object or task – 'task fixation'.

Switching attention

Switching attention between the route ahead and checking in cab indications is a continuous task, as a professional Driver you shouldn't stay focused on one area too long. You need to maintain an overall view of everything going on around your train.

Information filtration

Your brain can only process so much information at once. You need to learn to disregard the irrelevant and pay attention to the relevant.

Attention distribution

Attention distribution is the skill you use to allocate your attention to all the relevant information your brain receives. Driving requires that you handle these tasks effectively as well as simultaneously, so it is important that you use attention distribution to keep from focusing too much or too little on any one task.

Task fixation

Task fixation is focusing your attention entirely or far too heavily on a single task. For Drivers, this could mean concentrating so much on dealing with a train fault that you miss your braking point for the next station, resulting in a station overrun or failure to call. The primary cause of task fixation is lack of familiarity with the task you are trying to perform.

Higher levels of situational awareness

Whilst 'situational awareness' is a technique that must be applied at all times when driving trains, examples of locations where a higher level of situational awareness is required are:

- approaching a major terminal and complex signalling layouts under cautionary signals where other trains are running on parallel lines
- encountering changes in speed restrictions when running under cautionary signals.

Mental operating modes

One of the key skills of a Driver is being able to switch your levels of alertness and competency according to operating conditions being experienced. A good way of remembering this is through the three levels of 'mental operating modes' green, yellow and red. Running under green signals is a good example of 'green mode' as noting the sound of the AWS bell is automatic and your attention levels are often very relaxed. Switching into yellow mode is required when there is a need to focus on a specific task such as stopping at a signal or station. Red mode is when you really have to think about a task and there is a greater chance of error such as during degraded working. This is when you must be at your highest levels of alertness/ competence and you need to use self checking skills to reduce the risk of error.

Mode	What it is (how you are)	When to use
Green	• relaxed & scanning • sitting back • wide-eyed vision • time to think • using all senses	• when clear that everything is being controlled/is under control • no need for focused action • when 'cruising'
Yellow	• focused; alert; concentrating • 'blinkered' vision & senses • erring on the side of safety • shutting out external 'noise'	• when necessary to act & concentrate on a specific task • when focused action needed to retain/gain control
Red	As yellow mode, plus; • clear about purpose/priorities • communicate with & involve others where possible • stop to think/consider often	• serious out-of-course or unusual situations • emergency response • whenever unsure of next steps at a critical time

Risk triggered commentary

What is it?

Risk Triggered Commentary (RTC) is a technique that may be used to help you stay focused when you are carrying out a movement or a task that carries a high level of risk. It uses the process of verbal commentary and repeating back the risk and action to take, and is aimed at ensuring that essential information remains in your working memory.

Why use it?

Use it as an aid to help you increase awareness of risk, improve concentration levels and manage potential distractions, when multi-tasking. A number of Drivers have found it to be a very useful aid to driving.

How do I use it?

This technique requires you to continuously repeat to yourself essential information and the action you have to take so that this remains in your working memory. To help achieve this you would normally have to re-call the information, as very little information is retained in the short term memory beyond a time of between 8 to 18 seconds. An example of when and how to use RTC is when receiving a caution or preliminary caution aspect:

- call out the aspect – i.e. "Two yellows or Single Yellow – Target Red at XYZ Location"
- repeat this every 8 to 18 seconds until the red aspect comes into view or aspects are stepped-up
- call out the red aspect as soon as it comes into view
- if it steps up, start the process again
- RED AHEAD, keep RED AHEAD as a priority in your short term memory.

The more you practice the technique the more natural it will feel and it will become easier to apply. Applying RTC is strongly recommended where you need to remember key information relating to the safe control of your train and when you need to remember to make a specific action.

When should it be used?

Examples are:

- when multi-tasking to ensure key pieces of information can be remembered and acted on accordingly
- when starting a train to prevent a Start Against Signal (SAS) or Start on Yellow (SOY) SPAD
- during degraded operations such as temporary block working
- on approach to cautionary/red signals
- station stops that fall between a cautionary aspect and a signal at danger
- when you feel your concentration levels are reducing, for example at the end of a long shift.

What if I am not comfortable speaking out aloud?

In using the process it is important that you use a technique that is effective for you. It is preferable that you speak out what you have to remember. If you are not comfortable with this, say it under your breath or run the message through your mind – whichever you are most comfortable with.

Limitations of RTC

Continuous commentary may not always be achievable, as other important tasks will need to be carried out, e.g.: respond to information from safety systems/radio messages etc. There is a risk of over-use so keep it focused!

RTC is not mandatory, it is another tool to help the Driver focus when in and around risk areas.

Commentary driving

What is the difference?

Commentary driving is providing continuous running commentary on all your actions associated with driving a train in terms of what you are seeing, what you are doing and the reasons why.

When is it used?

It is generally used during the failure of certain equipment such as the TPWS or AWS and during training and assessment. The real benefits from a training and assessment point of view is it permits the instructors/assessor to gain a real understanding of what you are actually seeing (your levels of situational awareness) and why you are applying a certain technique. It really helps to demonstrate to an instructor/assessor your level of competence providing excellent supporting evidence in terms of your skills and route knowledge. It often saves a lot of supporting questions.

Commentary driving is not about calling out the aspect of all green signals but in focusing on the situations where a number of issues have to be considered; for example approaching a station, where there is a change in line speed, a steep falling gradient on approach etc.

If you want to learn more information about commentary driving or risk triggered commentary, speak to your Driver Manager who will be able to demonstrate the techniques.

Route conducting

When route conducting, it is important that you prepare yourself by obtaining all the necessary route information relating to the train.

If you are unfamiliar with the traction type or train consist, the Driver who is passed for that traction type must continue to drive.

Ensure you have the following information when carrying out the duties of a conductor Driver:

- the braking performance of the train
- the train performance in conditions of low adhesion
- operation of power controller
- weight and formation of the train
- cab sighting restrictions
- location of emergency equipment
- operation of emergency brake.

When conveying information during the journey, allow yourself plenty of time, encouraging the Driver to repeat each message given to establish that a clear understanding has been reached. Avoid using ambiguous statements. Give specific, clear and precise instructions using relevant landmarks that both of you understand.

Remember that as conductor Driver you are responsible for the safe working of the train. If the Driver being conducted is not responding soon enough to instructions, you must take the appropriate action to maintain the safety of the train.