

Consultation comments and responses

Document Title: On-Track Plant, Trolleys and Associated Equipment.

Document number: RIS-1530-PLT

Consultation closing date: 22 June 2023

1. Responders to consultation

No	Name	Company
1	Martin Prosser	Independent
2	Ian Pollard	Bridgeway Consulting
3	Sam Barrett	Allan J Hargreaves Plant Engineers
4	Carl Jones	G.O.S. Tool & Engineering Services
5	Alastair Roberts	Fitzgerald Plant
6	Richard Stainton	Network Rail
7	Neil Hewitt	Volker Rail
8	Confidential	Confidential
9	Jordan Skey	Network Rail
10	Mick James	Plasser Theurer UK
11	Daniel Smail	SNC Lavalin PAB
12	Dr. Philip Sharples	Rail-Ability Ltd
13	Alastair Clarke	Aegis Certification
14	Graham Pirson	RPA Director

2. Summary of comments

Code	Description	Total
	Consulted	363
	Total comments returned	502
DC	Document changes	235
NC	Not changed	267

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
1	Throughout		The year that a standard is applicable to is utilised throughout the document, if this is reviewed and changed at a later date then the information is then out of date	Remove any reference to a BS year or version	9	NC			Dated BS EN references are now used in all RSSB standards. When the referenced standards are revised this can be covered by point releases (minor updates) to the RIS. Point releases have been used for other plant standards – GMRT2400 is now issue 6.2.
2	All	All	NR does not have access to the unpublished prEN 15955-1:2022 as such references have not been checked against that standard.		9	DC	14	G 4.1.2 Note	Note added to G4.1.2: The CEN enquiry versions of prEN 15955-1:2022 and prEN 15955-2:2022 are available from BSI. It is anticipated that the FprEN 15955 will be coming out for formal vote to publish later this year. The references in RIS-1530-PLT issue 7 can then be updated as part of the 12-month review.
3	ALL	ALL	The Rationale is presented for each section rather than each clause. This leads to two distinct issues: a) it is not readily apparent which requirement clause(s) the Rationale is seeking to address b) according to our understanding of the document there are a significant number of requirement clauses which have no applicable rationale provided as the rationale information given does not address the clause requirement	a) Provide a Rationale against each clause requirement b) Delete all clause requirements for which no cogent rationale can be provided.	14	NC			The clauses are grouped in the same topic areas that were used in previous issues of RIS-1530-PLT. To aid the reader these topic areas have retained the subsection numbering used in RIS-1530-PLT issue 6. The RSSB document format is to provide rationale for the topic area followed by any relevant guidance. When BS EN 15595 is published next year there will be the opportunity to rationalise the document so RIS-1530-PLT can become the GB application of the 15746 and 15955 series. The strong GB input to CEN TC 256 WG5 means that these documents have been strongly influenced by RIS-1530-PLT.
4	ALL	ALL	The Guidance clauses provided are frequently confused and either: i) provide information which we consider mandatory and which should be presented as a Requirement clause. ii) repeat information which has already been presented in a Requirement clause and are therefore superfluous iii) do not provide guidance	Thoroughly review the entire document so that the Guidance clauses only provide guidance. This can be achieved by i) Making clauses which provide mandatory information Requirements ii) deleting wording which merely repeats a requirement without adding any meaningful additional guidance information; iii) deleting all Guidance clauses which do not provide meaningful additional guidance information.	14	NC			When BS EN 15595 is published next year there will be the opportunity to rationalise the document so RIS-1530-PLT can become the GB application of the 15746 and 15955 series. The strong GB input to CEN TC 256 WG5 means that these documents have been strongly influenced by RIS-1530-PLT. The guidance can then be reviewed and retained where it is necessary to complement the requirements in the BS ENs. This approach was used for the OTMs so GMRT2400 and RIS-1702-PLT are the GB application of the BS EN 14033 series.
5	Multiple	Multiple	The wording of all guidance has been updated to say “It is best practice to...”. In many cases it is not just best practice, it is essential to comply with the clause. Stating that it is best practice heavily implies that it is not absolutely necessary. This will cause variation in interpretation of the standard, both by manufacturers and PABs, with potentially large variation in design, safety and cost. Examples include: G5.16.5.11, G5.16.5.12 and G 5.16.5.13 relating to earth bonding. Bonding between articulated joints is essential to comply with the clause, it is not just “good practice”. Further specific examples are given throughout this comment document, but it is	Review all guidance notes that begin with “it is good practice to”. Where the text that follows is essential to comply with the clause, update the wording to “To comply with the clause, it is necessary to...”	3	NC			‘Good practice’ is the terminology used in RSSB published document and is specifically described in the definitions section of RIS-1530-PLT. Good practice is defined as <i>A process or method that has been shown to work well; succeeds in achieving its objective(s); is widely accepted; and therefore can be recommended as an approach.</i>

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			noted here as a generic comment, as we believe a full review is required.						
6	Multiple	Multiple	<p>The wording of all guidance has been updated to say “It is best practice to...”. In many cases the “best practice” has design and cost implications. It is not clear what the status is of this best practice. Without this clarification, different machines will be being built to different target safety levels, and the purpose of standards is to avoid this. Examples include G5.4.11 relating to speed limiters, G5.11.31 relating to first aid kits and G 6.2.4.13 relating to 9c high wheel load warning. These clearly have different costs associated with them, but the principal is the same.</p> <p>When machines are being CE marked there is a legislative requirement to provide a machine that is “State of the Art”. Given that RSSB are the industry recognised experts, saying “it is best practice” heavily implies that you are defining State of the Art, however this is not explicitly stated and has not been made clear. The fact that the Designated Standard, which should set out the State of the Art, is now over ten years old, makes it more difficult to determine whether or not the Best Practice is equivalent to State of the Art (if we had an up to date Designated Standard then that document would clearly define State of the Art. If 1530 gives what RSSB thinks is “best practice”, but doesn’t mandate it then:</p> <ul style="list-style-type: none"> - Those manufacturers who do not implement the best practice put themselves legislatively at-risk <p>Those manufacturers who do implement the best practice will be more expensive (potentially significantly so) and will not be able to function commercially</p>	<p>Review all guidance notes that begin with “it is good practice to”. Where the requirement is necessary for the machine to achieve an acceptable level of safety, make the requirement a mandatory clause. Where it is necessary in certain situations and not others, state which situations it is necessary in, and make it into a mandatory clause. Where it is not necessary to achieve an acceptable level of safety, remove it.</p> <p>If RSSB must keep “it is best practice to”, then provide clear and unambiguous guidance on how this relates to the legislative requirement for machines to be State of the Art when complying with the Machinery Regulations. Provide guidance on how this may differ for machines that are being CE/UKCA marked (e.g. new build machines) and machines that are not being CE/UKCA marked (e.g. 7 year upgraded machines that do not trigger the requirement to re-CE/UKCA mark the machine). However: We strongly believe that the term “it is best practice to” should not be used. The industry knowledge on the requirement to provide State of the Art, and how this is achieved, is variable, therefore even with guidance, it is likely to be interpreted differently by different parties.</p>	3	DC	12	G 2.2.2	<p>The UKCA marking concerns the placing of the machine on the market and is declaration by the manufacturer that the machine complies with the ‘The Supply of Machinery (safety) Regulations 2008’ (as amended).</p> <p>The Department for Business and Trade has not updated the designated list of standards against ‘The Supply of Machinery (safety) Regulations 2008’ (as amended). This means it still references BS EN 15746-2:2010 +A1:2011 as providing a presumption of conformity.</p> <p>BS EN 15746-2 was republished in 2020 to set out the latest industry requirements. The Department for Business and Trade has not set out any timescale when they will update the designated list of standards (and this also applies to other industry sectors).</p> <p>Additional guidance has been added for the infrastructure managers to request BS EN 15746-2:2020 is used when the manufacturer declares compliance with ‘The Supply of Machinery (safety) Regulations 2008’.</p> <p>New clause G.2.2.2 added: “<i>When a declaration of compliance to The Supply of Machinery (Safety) Regulations 2008 is made, it is good practice to request compliance against BS EN 15746-2:2020.</i>”</p> <p>As set out in RIS-1710-PLT issue 2.1, clause 3.5.1 all OTP shall be subject to the engineering conformance process every seven years for compliance with the latest applicable requirements. RIS-1710-PLT clause G 3.5.4 states the whole railborne plant will need to be reassessed against the changes necessary to bring into compliance with the full requirements of the current version of RIS-1530-PLT at that time.</p> <p>We are aware that Network Rail have previously granted deviations on a machine-by-machine basis when the owner/upgrader can justify why it is not appropriate for that machine to be brought into line with the latest version of RIS-1530-PLT. This is a contractual issue and outside the scope of RIS-1530-PLT.</p>
7	Various	Various	<p>The term “good practice” is used regularly. This term will be taken as optional by many and mandatory by others.</p>	<p>Add in good practice requirements as a clause if appropriate.</p>	5	NC			<p>‘Good practice’ is the terminology used in RSSB published documents and is specifically described in the definitions section of RIS-1530-PLT.</p> <p>Good practice is defined as:</p> <p><i>A process or method that has been shown to work well; succeeds in achieving its objective(s); is widely accepted; and therefore can be recommended as an approach.</i></p>

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8	Various	Various	In various places the phrase it is good practice to is used. Does this mean it has to be done or not	How is a PAB expected to enforce this if it is not done	13	NC			'Good practice' is the terminology used in RSSB published documents and is specifically described in the definitions section of RIS-1530-PLT. Good practice sets out a means to achieve an objective, is widely accepted; and can be recommended as an approach. Alternative solutions are permitted if they achieve the same objective.
9	Various	Various	There are generally far to many clauses which are guidance it is very difficult for a PAB to enforce an item listed as guidance and not covered in a mandatory clause. How is this going to be policed		13	NC			Guidance is provided to assist the designer of the machine to comply with the stated requirements and can be considered as a recommended approach. Alternative solutions are permitted if they achieve the same objective. In most cases, the guidance has been carried over from RIS-1530-PLT issue 6.
10	N/A	N/A	No reference within RIS-1530-PLT to BS.EN.ISO 12100:2010 Safety of machinery - General principles for design - Risk assessment and risk reduction	BS.EN.ISO 12100:2010 provides a structure for conducting risk assessment. Recognition and incorporation / referencing of it would eliminate the need for some of the more (subjective) requirements and guidance included within the Standard	14	DC	18	G 5.1.5	G 5.1.6 (now G 5.1.5) amended to specifically reference BS EN 12100. <i>An example of good practice would be a risk assessment in accordance with BS EN 12100 of the overall machine design....</i>
11	1		Document Title Including Trolleys in scope is irrational as: a) it completely ignores the operational reality of the GERT8000 series. OTP including propelled wheeled attachments are Possession ONLY, whereas a Trolley can become operational on track under a simple line blockage, (even additional protection is optional, subject to company instructions). b) the Classification is erroneous, as evident in the stated Part 4 text, <i>"Machines in scope of this document"</i> – But trolleys are NOT Machines, <i>"they are propelled along the track solely by manual effort"</i> . The intended use, design and size is different and not detailed enough in 1530 – track jacks, cutting bits and tooling, clamping devices, handling of sleepers, the handling of portable equipment, cable detection etc are all missing from RIS-1530-PLT and relate to Portable and Transportable Plant used for Infrastructure work	Remove Trolleys as they are not OTP, they should be categorised / captured in the same standard as Iron Men/ Small Tools and Manually propelled equipment – OTP has a driver / operator, an engine, is far more complex and so therefore a totally different type of machinery. Trolleys are also portable and transportable and should be treated as such in their own standard (previously RIS-1701), their design and use is totally different and should not have been incorporated into RIS-1530-PLT. The intended use, design and size is different and not detailed enough in 1530 – track jacks, cutting bits and tooling, clamping devices, handling of sleepers, the handling of portable equipment, cable detection etc are all missing from RIS-1530-PLT and relate to Portable and Transportable Plant used for Infrastructure work.	8	NC			Trolleys were specifically transferred to RIS-1530-PLT issue 6 when it was published in December 2015. RIS-1701-PLT has subsequently been renamed 'Non-Railborne Plant used for infrastructure work'. With the exception of On-Track Machines (covered by GMRT2400 and RIS-1702-PLT) RIS-1530-PLT sets out the engineering requirements for all rail mounted plant including trolleys.
12	3	Issue record	List changes is generic to type of change not comprehensive	Provide a list Comprehensive list of amendments from previous issues	14	NC			The disposition table in the Business Case for Change shows the relationship between topic areas in Issue 6 and Issue 7. To aid the reader most topic areas have retained the subsection numbering used in RIS-1530-PLT issue 6. Generally, the requirements and guidance have been carried over from issue 6. It is just the order of the clauses within the topic area that has changed.

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13	3	NA	Changes have not been blacklined. I understand this would be difficult because the content format has been revised, but a clause-by-clause disposition table would be very helpful when providing assessment evidence to PAB compared to previously accepted machines.	The disposition table provided in Appendix B of Business Case for Change should be: a) Enhanced to be reference each subclause of issue 6 and where it has gone b) Produced as a document in its own right Referenced in introduction to RIS1530 issue 7 (so that everyone aware of its existence)	10	NC			The clauses are grouped in the same topic areas that were used in previous issues of RIS-1530-PLT. To aid the reader these topic areas have retained the subsection numbering used in RIS-1530-PLT issue 6. In most cases the requirements and guidance have been carried over from issue 6. It is just the order of the clauses within the topic area that has changed. When BS EN 15595 is published next year there will be the opportunity rationalise the document so RIS-1530-PLT can become the GB application of the 15746 and 15955 series. The guidance can then be reviewed and retained where it is necessary to complement the requirements in the BS ENs.
14	10	1.1.1	First sentence. Why specifically mention NR and who are the other IMs, and why specify IM when clause 1.1.3 makes clear there are other users	This document is the industry agreed standard on the technical requirements for on track plant (OTP), trolleys and associated equipment to be used on British railway infrastructure.	10	NC			Network Rail is the key client of this standard and its use is mandated through the Network Rail Plant Manual
15	11	1.5.1	This allows insufficient time for rigorous review of the Standard and also for comments to be read and assimilated into a revised document	Extend the consultation period	14	DC	11	1.5.1	The consultation period was extended and document approval by PLT SC has been rescheduled. In most cases the requirements and guidance have been carried over from issue 6. It is just the order of the clauses within the topic area that has changed.
16	12	G.2.2.1	Issue 6 referred to Supply of Machinery Regulations as 'Machinery Directive' because they transpose European Machinery Directive into UK law, this has been changed in Issue 7 to 'Machinery Regulations'. But this could cause confusion with the forth coming European Machinery Regulations (due to be signed July 2023) for which are not yet transposed into UK law.	Revert back to 'Machinery Directive' in G.2.2.1 and throughout document.	10	DC	12	G 2.2.2	The UK legislation is enacted through the Supply of Machinery (Safety) Regulations and the European Machinery Directive is not applicable to GB, so it is not appropriate to refer to the 'Machinery Directive' . Additional guidance added to make it clear that the term Machinery Regulations in this document is not to be confused with the 'Regulation (EU) of the European Parliament and of the Council on Machinery' that will apply in the EU from 2027. Note added: The term 'the Machinery Regulations' as used in this document is not to be confused with the 'Regulation (EU) of the European Parliament and of the Council on Machinery; that will apply in the EU from 2027.
17	12	2.3	Definitions have been hidden at back of document where nobody can find them at page 241. Plant Standards Committee requested that Plant RISs have a section 2.3 for definitions which has been carried out for all published Plant RIS.	Revert definitions back to 2.3	10	NC			This is the agreed layout for all RSSB standards
18	13	G3.1.4	Product acceptance is within guidance but seems to state it is mandatory	For clarity we suggest it within actual clause and mandatory or clear it is a target goal of NR.	4	NC			Part 3 references RIS-1710-PLT 'Engineering Certification of Railborne Plant and the Assessment of Non-Railborne Plant' which provides more detail on product acceptance. The infrastructure managers have different product acceptance processes, so it is not possible to mandate a particular process.
19	13	G3.1.4	Product Acceptance, is specific to Network Rail and not all infrastructures	Change to: Infrastructure Manager's approval/acceptance	14	DC	13	G 3.1.4	Text amended: <i>... engineering conformance and infrastructure managers' approval or acceptance.</i>
20	14	4.1	Repeating comment from my issue 6 returned questionnaire.	Remove Trolleys from scope and create a separate RIS.	2	NC			It was an industry decision to consolidate all the engineering requirements for rail mounted plant including trolleys. The requirements for trolleys were

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			Including Trolleys in scope is irrational as: a) it completely ignores the operational reality of the GERT8000 series. OTP including propelled wheeled attachments are Possession ONLY, whereas a Trolley can become operational on track under a simple line blockage, (even additional protection is optional, subject to company instructions). b) the Classification is erroneous, as evident in the stated Part 4 text, “Machines in scope of this document” – But trolleys are NOT Machines, “they are propelled along the track solely by manual effort”.						specifically moved from RIS-1701-PLT to RIS-1530-PLT issue 6 in December 2015. RIS-1701-PLT has subsequently been renamed ‘Non-Railborne Plant used for infrastructure work’. There are trolleys that incorporate powered machinery that are propelled along the track solely by manual effort.
21	14	G 4.1.1	Should Trolleys be classed as Railborne plant (especially as Trolleys can be used outside a possession)	Remove trolleys from this document	14	NC			It was an industry decision to consolidate all the engineering requirements for rail mounted plant including trolleys. The requirements for trolleys were specifically moved from RIS-1701-PLT to RIS-1530-PLT issue 6 in December 2015. RIS-1701-PLT has subsequently been renamed ‘Non-Railborne Plant used for infrastructure work’.
22	14	4.3	Demountable machines are clearly stated to be limited to inside possession but there is no such unequivocal statement for RRV – is this deliberate? (indeed G4.3.4 even gives a tease that there could be RRV used outside possession!)	Reproduce G4.2.1 in 4.3 if that is what is intended.	10	NC			This point is already covered in the definitions.
23	15	4.3.4 Fig 2	... braking direct on the rail wheel)	Change to: primary braking direct on rail wheels, secondary/additional braking from road wheels to rail wheels	14	DC	15	Figure 2	Figure title changed: <i>Type 9B high ride machines (traction indirect from road wheels to rail wheels, braking direct on rail wheels, additional braking from road wheels to rail wheels)</i>
24	15	All	The use of term “advantage” is highly subjective and should not be used. It also appears to imply a hierarchy of preference	Amend guidance to make it objective and free from any “hierarchy” (whether implicit or implied)	14	DC	15	G 4.3.5 G 4.3.6 G 4.3.7	Guidance changed as suggested: <i>G 4.3.5 Type 9A machines have traction and braking directly on the rail wheels. This makes them consistent with normal rail machines and avoids potential interface problems between the rubber tyre and the steel wheel or rail.</i> <i>G 4.3.6 Type 9B machines are a recognised conversion of a standard road machine. Care needs to be taken in the design so that the load of the road wheel onto the rail wheel is maintained as the rubber tyre wears.</i> <i>G 4.3.7 Type 9C machines use the rubber tyres to provide traction and braking directly onto the rail. Care needs to be taken in the design so that the load is shared correctly between the machine’s road and rail wheels to provide adequate guidance from the rail wheels, and traction and braking from the road wheels. The design needs to consider how the machine traverses level crossing and high check rails so that the load on the rail wheels is not reduced.</i>

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25	15	G4.3.6	It is opinion not fact that “Type 9B machines are recognised as a convenient and cost-effective conversion from a standard road machine.”? Comparison of recent machine costs shows type 9B are under 4% less expensive than type 9C.	Amend guidance to make it objective and remove any reference to commercial aspects of machine selection.	14	DC	15	G 4.3.6	<i>G 4.3.6 Type 9B machines are a recognised conversion of a standard road machine. Care needs to be taken in the design so that the load of the road wheel onto the rail wheel is maintained as the rubber tyre wears.</i>
26	15	G.4.3.8	Clause misses an important requirement and should be reworded and made a requirement clause.	There is the potential for machines to be designed to be capable of operating in two or more categories. In which case they shall meet the requirements of both categories.	10	NC			This point is already covered by clause 4.3.2.
27	17	4.4	For industry Competence, Training and Fitness for Plant Operations purposes – there needs to be an additional ‘Type’ or separate section for ultra-light manually connected ‘trailers’ with 2 wheels, and commonly designed to prevent a run-away. Such trailers are circa 100kgs tare weight, 900kgs SWL and are commonly manually connected to self-propelled MEWPs.	Create additional ‘Type’ or separate section for ultra-light manually connected Trailers.	2	NC			The engineering requirements for trailers, including the 2-wheel variants used with MEWPs, are set out in Part 7 of this document. The operational use, competence of personnel using the equipment are outside the scope of RIS-1530-PLT.
28	17	Figure 5:	Type OC road-rail trailers also require parking brake and service brake. Absence of this statement when it is included for type OA is inconsistent and likely to cause confusion	Change to: Type OC road-rail trailers (parking brake and service brake)	14	DC	16	Figure 5	Figure title changed: <i>Type OC road-rail trailers (parking brake and service brake)</i>
29	17	G 4.4.1 Figure 6	This is a poor representation of a two wheeled trailer. This diagram is really of a four wheeled ballast brush in which the second set of wheels are hidden behind the adjustable ploughs. You will notice the lack of draw bar.	Insert a diagram of a two wheeled trailer. (GD)	7	NC			Illustration carried over from issue 6. RSSB does not have any other drawings of two wheeled trailers.
30	17	G4.4.4	Refers to OB trailers, but they are not described in 4.4	Delete G 4.4.4	10	DC	16	N/A	Clause deleted
31	17	G 4.4.4	Type OB Machines not defined	Include a definition and if these are not to be used on UK infrastructure state this after the definition	14	DC	16	N/A	Type OB trailers are no longer permitted on the GB mainline railway. Clause deleted
32	18	4.5	Should Trolleys be classed as Railborne plant (especially as Trolleys can be used outside a possession)	Remove trolleys from this document	14	NC			It was an industry decision to consolidate all the engineering requirements for rail mounted plant including trolleys. The requirements for trolleys were specifically moved from RIS-1701-PLT to RIS-1530-PLT issue 6 in December 2015.
33	18	G4.5.1	Refers to ‘railborne plant’ but they are not defined in this document. Admittedly they are defined in RIS1710, but would be useful to reproduce in RIS1530 also.	Include definition of ‘railborne plant’ in 2.3	10	DC	240	Definitions	Railborne plant added to definitions.
34	18	G4.5.1 b)	The definition given would include trolleys such as rail grinders with rail wheels on both tracks. RIS-1530-PLT issue 6 included the same definition/requirement, however Network Rail routinely derogated against it as	Ensure Network Rail’s strategy for this type of equipment is consistent with RIS-1530-PLT issue 7. We have no opinion on what the strategy should be, but if it is not consistent with 1530 then it will require derogations.	3	NC			This guidance is consistent with the text in clause 4.5.1 of RIS-1530-PLT issue 6, published in Dec 2015, when the requirements for trolleys (including powered machines that are manually propelled on the tracks) were added to the document.

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			part of PA, so that only load carrying trolleys required 1530 compliance and an ECC, and non-load carrying trolleys were granted PA without 1530 compliance. To date, no such equipment has been issued with an ECC, even though the requirement has existed since 2015.	Derogations do not have a consistent set of requirements, meaning the market is not necessarily equal for all OEMs. Also, we should not be relying on derogations immediately after a new standard comes out, particularly where the issue existed in the previous version of the standard.					Network Rail contractually mandates compliance with RIS-1530-PLT in their Plant Manual. Granting deviations is a contractual issue and outside the scope of RIS-1530-PLT
35	18	4.6.2 a	The gradient stated reflects NRMI constrains and so does not accord with clause 1.1.1 “...to be used on infrastructure managed by Network Rail and other infrastructure managers (IMs)”	Either specify the standard is intended to provide conformance to NR requirements or amend the infrastructure parameters stated to make them more inclusive (universal)	14	NC			The gradient of 1 in 25 is the historically accepted gradient for OTP and is consistent with the gradients specified in BS EN 15746-1:2020 and prEN 15955-1:2022. An infrastructure manager can always request compliance with a steeper gradient as a condition for access to their managed infrastructure. RIS-1530-PLT is an industry standard that is contractually mandated by Network Rail via their Plant Manual.
36	19	5	There are many occasions where the ‘rationale’ states it is consistent with ENs. That is not a rationale for the requirement, it is useful, but is secondary to the reason why the requirement exists.	Change format of rationale statement to These requirements are for xxxxxxxx (where xxxxxxxx is the reason for the requirement) and are consistent with BS EN 15746-1:2020 and prEN 15955-2:2022.	10	DC		various	Rationale statements changed as suggested
37	19	5.1.1, 5.1.2, G5.1.6, G5.1.7	Suggest replacing all the clauses and guidance referenced left with a clause mandating risk assessment and reduction in compliance with EN 12100. This would: <ul style="list-style-type: none">- Be consistent with EN 15746 etc which are mandated in 5.1.4- Ensure manufacturers are using Designated Standards for risk assessment Remove the confusion of having to use EN 12100 (as mandated by 15746) and then also having to try and use 50126 in parallel.	As per comment on left	3	DC	18	G 5.1.6	G 5.1.6 amended to specifically reference BS EN 12100: <i>An example of good practice would be a risk assessment in accordance with BS EN 12100 of the overall machine design....</i>
38	19	5.1.2	ALARP? SFARP? Risk accepted under transfer to the next party under CSM-RA?		9	DC	18	G 5.1.6	G 5.1.6 amended to specifically reference BS EN 12100: <i>An example of good practice would be a risk assessment in accordance with BS EN 12100 of the overall machine design....</i>
39	19	5.1.	the Risk assessment section refers to various things to be carried out	just replace all this with the risk assessment shall comply with EN1200 as it has to comply with this to meet the machinery regulations.	13	DC	18	G 5.1.6	G 5.1.6 amended to specifically reference BS EN 12100: <i>An example of good practice would be a risk assessment in accordance with BS EN 12100 of the overall machine design....</i>
40	19	5.1.3	This is a circular reference 10 10.1.3.1 r. Clause 10.1.3.1 r has identical wording, referring back to this clause	Remove clause and reword 10.1.3.1 r	5	DC	18	N/A	5.1.3 deleted and reference removed from 10.1.3.1 r.
41	19	5.1.4	Could we have guidance with what takes priority if there are conflicts between 1530 and the ENs.		4	NC			The legal declaration of compliance would be against the designated (and now superseded) standards. It is not known when the Department for Trade will update the list of designated standards to reference the latest published ENs.

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									The requirements in RIS-1530-PLT reflect the latest industry requirements that have gone into BS EN 15746 and prEN 15955.
42	19	5.1.4	Should reference to 1530 be in the list	Clarification	14	NC			The legal declaration of compliance with the Machinery Regulations to support the UKCA marking is done against designated standards. This list is published by the Department of Trade. RIS-1530-PLT is an industry standard that is contractually mandated by Network Rail via their Plant Manual.
43	19	5.1.4	When a new version becomes Designated it will no longer be possible to comply with both RIS-1530-PLT issue 7, and the Supply of Machinery (Safety) regulations. NR will be flooded with derogation requests.	Mandate compliance with the version currently Designated, and use guidance to point to the Designated Standards list.	3	DC	18	5.1.3	The updating of the designated standards can be dealt with by publication of a point release (issue 7.1). It is not known when the Department for Trade will update the list of designated standards. BS EN 280:2013+A1:2011 added to this list.
44	19	G5.1.8	Incorrectly stated in the Business case for change	G5.1.8 is the new clause not G5.1.9 as in the business case	8	DC	18	G 5.1.7	BCfC has been corrected to reflect most recent numbering.
45	19	G5.1.9	“appropriately” is not defined. It would be impossible for PABs to apply this consistently between them.	Define “appropriately”	3	DC	18	G 5.1.8	Guidance amended (deleted ‘and completed appropriately’).
46	19	G5.1.9	it states it is good practice for the PAB to check that the hazard analysis has been undertaken	Is this mandatory as it is listed as guidance and good practice but is not specific to do it. I would consider this is needed not just good practice	3	NC			The requirement is on the designer of the machine to carry out the risk assessment. Engineering conformance and certification of compliance with the engineering requirements set out in RIS-1530-PLT is undertaken by the PAB in accordance with RIS-1710-PLT.
47	19	G5.1.10	If per 5.1.4 the declaration of compliance is used as the basis for conformity, are we happy for this to go unchecked?		9	NC			The legal declaration of compliance with the machinery regulations is the responsibility of the manufacturer/supplier of the machine and supports the application of the UKCA marking. Engineering conformance and certification of compliance with the engineering requirements set out in RIS-1530-PLT is undertaken by the PAB in accordance with RIS-1710-PLT. The suitability of a machine to carry out a particular function is covered by the relevant IM product acceptance process.
48	19	G5.1.11	Would be beneficial for understanding of readers to be more specific about legal status of EN15746-2	BS EN 15746-2:2010+A1:2011 has been superseded by BS EN 15746:2020 but this document will not be cited in the Official Journal of European Union as harmonised standard for the Machinery Directives. Therefore the 2011 version is still the legal standard for harmonisation to Machinery Directive.	10	DC	18	G 5.1.10	Guidance expanded to also cover BS EN 280:2013+A1:2011 that has been superseded by BS EN 280-1:2022 and BS EN 280-2:2022 that have also not been designated. It is the Department for Trade who designates the standards against the GB Machinery Regulations. The OJEC notice is no longer relevant in GB.
49	19	G5.1.11	Do we want to recommend that 2020 version of EN15746-2 is followed in addition to 2011 version	Suggest this is a decision for IMs ?	10	DC	19	G 5.1.12	Extra guidance added: <i>It is good practice for the manufacturer to design the machines to comply with the latest version of the published standards.</i>
50	19	G5.1.12	Are we able to reference an unpublished standard?		9	NC			Yes, in guidance. When BS EN 15595 is published next year there will be the opportunity to use a point release (issue 7.1) to update the references to BS EN 15955:2024.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
51	20	5.2.1	Clause 5.2.1 is too large so the associated rationale and guidance is too remote from the requirement.	Either: a) Put rationale and guidance below each requirement clause Or if this is not possible due to the RSSB style Stasi then: b) Split 5.2.1 into: 5.2.1 OTP travelling gauge dimensions 5.2.2 OTP travelling gauge declaration and diagrams 5.2.3 OTP travelling gauge security of moveable components	10	DC	21 22	G 5.2.1.21 G 5.2.1.23 G 5.2.1.24	Added cross-references to specific clauses relating to the guidance.
52	20	5.2.1.2	Plant gauge is a “creation” of RIS-1530-PLT and demonstrable reference for planning purposes. Why is it necessary seeing as how London Underground (LU) do not use in their assessment of machines. Furthermore many planners do not understand any companies have had to request PABs to include a reference to W6a so that planners understand the machine’s clearances.	Abandon the concept of Plant gauge and revert to W6a.	14	NC			The Plant Gauge in RIS-1530-PLT issue 6 was developed jointly with Network Rail and LUL to provide a combined profile to maximise access to their networks. This Plant Gauge has been carried over into issue 7. A machine built to comply with the Plant gauge will comply with W6a.
53	20	5.2.1.2 and 5.2.1.4	A very high proportion of machines do not comply with Plant Gauge. “Plant Gauge” is not defined in any Network Rail or LUL standards. NR and LUL planners use W6a or LG1, LG2, LG3. The current clause allows the machine to be any size, as long as the exceedance from Plant gauge is stated. Neither Network Rail or LUL infrastructure is defined in terms of plant gauge and plant gauge exceedance. Without any reference to W6a or LG1, LG2, LG3, planners will find it very difficult to plan for use of the machine. Even if the machine is Plant Gauge, it still has to go through a separate LU gauging assessment, so the use of Plant Gauge doesn’t add value to LU. Also note that clause 5.18.3.1 refers to W6a gauge.	Mandate compliance with either W6a, LG1, LG2 or LG3. Mandate that the ECC, instruction manual and data panel state the gauge as either W6a, LG1, LG2, LG3 or a multiple of these if applicable (e.g. LG2 and W6a). If Plant Gauge is really necessary then... Mandate compliance with either Plant Gauge or W6a gauge. Mandate that the ECC, data panel and instruction manual state whether the machine is Plant Gauge or W6a Gauge or both.	3	NC			The Plant Gauge was introduced in RIS-1530-PLT issue 6 as a combination of the W6a and LSVG (for Network Rail) and LG2 (for TfL) to provide the best profile for use on both networks. It is defined in Figure 7 and described in G.5.2.1.17. The reference to W6a in 5.18.3.1 is relevant because it covers travelling and working under live overhead lines which is only applicable to NR managed infrastructure.
54	20	5.2.1.2	Machines shall either: a) Not exceed the Plant gauge shown in Figure 7; or b) Comply with 5.2.1.4.	suggest we remove plant gauge and state W6a or LG1, LG2 or LG3 or multiple gauges if needed. It seems odd to state Plant gauge then list exceedances from it	13	NC			The Plant Gauge was introduced in RIS-1530-PLT issue 6 as a combination of the W6a and LSVG (for Network Rail) and LG2 (for TfL) to provide the best profile for use on both networks. It is defined in Figure 7 and described in G.5.2.1.17.
55	20	5.2.1.3	What does this clause require? What is the “static envelope”. I believe this is trying to say that the declared size of the machine must take into account overthrows at centre and ends of machines on curves. Is that a correct assumption?	If the Plant gauge dimensions or assumptions (see G 5.2.1.17) are exceeded, the overthrow in the centre and at the ends shall be calculated on minimum radius curve and include in the stated machine envelope.	10	DC	19	5.2.1.4	Clause amended as suggested.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
56	20	5.2.1.4	Should come before 5.2.1.3 to indicate what 5.2.1.3 requires	Reverse order of 5.2.1.3 and 5.2.1.4	10	DC	19	5.2.1.3 5.2.1.4	Clause order changed as suggested.
57	20 22/23 38 38 39 39 44 44 49 54 86 88 97 99 109 110 115 116 116 117 136	5.2.1.7 G5.2.1.23 5.7.1.5 5.7.1.6 G5.7.1.21 G5.7.1.22 5.7.6.5 G5.7.6.15 5.8.6.2 5.9.3.13 G 5.19.2.9 5.20.2.6 5.23.1 f) 5.26.1 6.2.4.2 G6.2.4.8 7.3.1.1 a) G7.3.1.4 7.3.2.1 7.3.4.1 9.6.1.3	<p>“Failsafe” is a redundant term when the EN ISO 13849 Performance Level system is being used.</p> <p>Also, “failsafe” is used in different ways throughout the standard, which is confusing. For example, in the brakes section “failsafe” means there are no single point failures, but in other parts of the standard “failsafe” is used to describe check valves, or bulbs that illuminate to show the safe state (bulb failure is then a safe failure). In these systems, there is a single point failure (check valve fails open or bulb system fails on), but the “normal” or “common” failure mode is a safe one. This is a different use of failsafe compared to the brakes section.</p> <p>Different uses of “failsafe” throughout the standard lead to different interpretations of requirements for system design. The EN ISO 13849 system is unambiguous and Designated to the Supply of Machinery (Safety) Regulations (and does not use the term “failsafe”).</p>	<p>Make reference to the minimum required Performance Level in table 3 instead of using term “failsafe”.</p> <p>For brakes, use the term “spring applied”.</p> <p>Remove all instances of “failsafe”.</p>	3	NC			<p>The term failsafe has been carried over unchanged from the requirements in issue 6 and the term has been used in the plant ENs.</p> <p>When BS EN 15595 is published next year there will be the opportunity rationalise the document so RIS-1530-PLT can become the GB application of the 15746 and 15955 series.</p> <p>The guidance can then be reviewed and retained where it is necessary to complement the requirements in the BS ENs.</p> <p>This approach was used for the OTMs so GMRT2400 and RIS-1702-PLT are the GB application of the BS EN 14033 series.</p>
58	20	5.2.1.7 b)	A lot of equipment is locked in place by pilot operated check valves (as allowed by point c)). What indication is expected to show that a pilot operated check valve is in its closed position?	Update the clause to make allowance for the use of pilot operated check valves.	3	NC			The requirement is that there is an indication that it is locked. How this visual indication is given is left to the designer see G5.2.1.23.
59	20	5.2.1.9	The clause relates specifically and only to the instruction manual. Should it not be in the instruction manual section?	Move to section 10	3	NC			This clause sets out the requirement that the information needs to be recorded in the handbook.
60	20	5.2.1.9	This is a duplication of 10.1.3.2 b) iv	Remove clause.	5	DC	19	N/A	5.2.1.9 deleted and reference removed from 10.1.3.2 b iv.
61	20	5.2.1.10	How can machines that exceed Plant Gauge (most machines) be used in isolated conductor rail areas?	Make it possible for machines that don’t comply with Plant Gauge to be used in isolated conductor rail areas.	3	NC			This clause sets out the necessary clearances that need to be achieved to permit a machine to be used in isolated conductor rail areas.
62	21	5.2.1.11 and Figure 9	The Lower Sector Area was made significantly more onerous in RIS-1530-PLT issue 6, but it still does not achieve compliance with LU lower sector. Additionally, machines built prior to RIS-1530-PLT issue 6 are unlikely to comply, and modification of the lower sector	<p>Mandate either:</p> <ul style="list-style-type: none"> - Compliance with the RIS-1530-PLT issue 5 Lower Sector gauge, with a limitation on the ECC, instruction handbook and data 	3	NC			<p>The Plant Gauge in RIS-1530-PLT issue 6 was developed jointly with Network Rail and LUL to provide a combined profile to maximise access to their networks.</p> <p>This Plant Gauge has been carried over into issue 7.</p>

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			is generally not advisable as it involves removing material from the rail gear.	panel that the machine must not be used on LU OR Compliance with S1156 attachment 5, diagram F1					
63	21	5.2.1.13	This is a duplication of 10.1.1.3 j.	Remove clause and reword 10.1.1.3 j	5	NC			This clause sets out the requirement that the information needs to be recorded in the handbook and on the ECC.
64	21	5.2.1.14	This is a duplication of 10.1.1.3 k.	Remove clause and reword 10.1.1.3 k	5	NC			This clause sets out the requirement that the information needs to be recorded in the handbook and on the ECC.
65	21	G 5.2.1.16	i) Routes specify W6a/LG2 plant gauge for planning ii) machines are specify for use on NRMI and/or LU when they are built so the gauge requirements are know at the design stage so how does plant gauge maximise the routes over which the vehicle can be used in travelling mode on the GB mainline railway and the sub-surface lines of London Underground)?	i) Abandon the concept of Plant gauge ii) Plant gauge is unnecessary and should be abandoned	14	NC			The Plant Gauge in RIS-1530-PLT issue 6 was developed jointly with Network Rail and LUL to provide a combined profile to maximise access to their networks. This Plant Gauge has been carried over into issue 7.
66	22	G 5.2.1.17	The dimensions cited are not representative of the equipment within the scope of the Standard. Indeed we are unaware of any in scope vehicle to which they are applicable.	This supports the argument to abandon plant gauge but if it is retained the dimensions around which it is based should be representative of the equipment it addresses.	14	NC			Whilst not relevant for the short wheel-base converted road excavators, these dimensions are applicable to the larger demountable machines that are within the scope of this document. This information is carried over from issue 6.
67	22	G5.2.1.18	If the machine is built to W6a gauge as set out in GERT8073, it can usually be declared as compliant with W6a and is then usable on the majority of the GB mainline railway. However, since the Plant gauge is a static gauge, it assumes conventional rail vehicle suspension. Any suspension movements greater than those of a typical rail vehicle will therefore need to be taken into account; see GERT8073. The check for compatibility of the size of the machine to the infrastructure will always need to be made, irrespective of the size of the machine; see RIS-8270-RST.	This clause should not be in guidance it should be mandated as if it is not done the machine could move out of gauge inadvertently when travelling	13	NC			The clause provides guidance on assessing the suspension characteristics when determining the size of the machine.
68	22	G5.2.1.19	If its ok for the for older machines what do we do with new designs. In previous clause is the 'usually' only around suspension movement?	Make clearer i.e. W6a is still ok for approval as a clause. If suspension have been considered.	4	NC			The requirement is for new machines to comply with the Plant gauge shown in Figure 7. This is smaller than W6a and takes into account the more restricted lower sector requirements on Network Rail and LUL managed lines.
69	22	G5.2.1.20	It is good practice to ensure that controls for components that are able to move out of gauge are capable of being disabled when in travelling mode	'good practice' removed The document states later around deliberate actions such as Clause 6.2.2.3. Suggest guidance is made to be consistent with 'two positive, separate and deliberate' given the clause is referring to gauge exceedance it doesn't seem consistent.	11	NC			Disabling the controls is consistent 6.2.2.3. There would need to be an action to reinstate the controls and a positive action to move the control.

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70	22	G 5.2.1.21	We see this as requirement and not good practice	Change to: "So far as is reasonably practicable vehicles should be provided with devices that prevent movement, in the event of accidental operation ... "	14	NC			The requirements are stated in clauses 5.2.1.6 and 5.2.1.7. Clause G5.2.1.21 provides guidance on how these requirements can be achieved.
71	22	G5.2.1.21	It is good practice to provide devices that prevent movement, in the event of accidental operation of the controls of moveable parts, when the machine is in travelling mode. These devices may consist of automatic interlocks with travel controls, isolation of the controls, or physical restraint of the component strong enough to withstand the operating mechanism and any other likely force, such as gravity or centrifugal force. In the case of hydraulic excavators, it is good practice to isolate or inhibit the relevant controls once the operator has placed the machine into the configuration for travelling mode, to prevent inadvertent movement out of gauge.	again this clause should not be guidance as it is essential for safe operation. How does a PAB enforce a clause that is only guidance and not mandatory	13	NC			The requirements are stated in clauses 5.2.1.6 and 5.2.1.7. Clause G5.2.1.21 provides guidance on how these requirements can be achieved.
72	23	G 5.2.1.24	How was lower sector plant gauge determined? As stated in G 5.2.1.17 Plant gauge is a combination of the W6a gauge for use on Network Rail, the LG2 gauge for use on London Underground. However there is no fixed dimension for lower sector gauge on London Underground and it is expressed as a vector diagram against the various lines and sections of the various lines. As a result lower sector plant gauge is unworkable as a reference.	Abandon the concept of Plant gauge	14	NC			The Plant Gauge in RIS-1530-PLT issue 6 was developed jointly with Network Rail and LUL to provide a combined profile to maximise access to their networks. This Plant Gauge has been carried over into issue 7.
73	23	G5.2.1.25	Taking account of wheel wear is essential to gauging	Mandate within a clause taking account of both maximum and minimum wheel size when gauging	3	NC			The guidance is an explanation of the 114mm clearance and a reminder that the designer needs to consider machine movements and maintenance tolerances.
74	23	G 5.2.1.25	it is good practice to take account of factors such as wheel wear and suspension movements.	This is essential not guidance as a machine can go out of gauge as the wheels wear.	3	NC			The guidance is an explanation of the 114mm clearance and a reminder that the designer needs to consider machine movements and maintenance tolerances.
75	23	G 5.2.1.25	Taking account of factors such as wheel wear and suspension movements should be a requirement not good practice	Amend standard to make show this as a Requirement and not Guidance	14	NC			The guidance is an explanation of the 114mm clearance and a reminder that the designer needs to consider machine movements and maintenance tolerances.
76	25	Figure 9	No limit is shown for the extent of incursion of rubber tyres on type 9C vehicles into the hatched area. Is there such a limit?	Either determine the limit and show it in figure 9 or state in 5.2.1.13 that there is no limit.	14	NC			There is no maximum permitted incursion. That is why in 5.2.1.13 the ECC and Instruction handbook needs to state how much the rubber wheels penetrate into the space permitted for infrastructure equipment and structures. When planning the work activities, the site survey should identify any infrastructure equipment and structures and determine whether the

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									intended machines can be used taking into account the declared rubber wheel incursions.
77	25	5.2.2.1	Proposed wording for ECC could give inference that the line the OTP is on is open to traffic. The wording in 5.2.2.4 is better phrased.	Amend 5.2.2.1 and the certificate shall be endorsed 'If any lines are open to traffic, this machine shall be used only if a safe system of work has been adopted to take account of the gauge exceedance'.	10	DC	24	5.2.2.1 c)	Agreed and changed.
78	25	5.2.2.2	Greatest radii or centreline measurement	Worst case scenario	14	DC	24	5.2.2.2	The wording in 5.2.2.2 has been changed to: <i>The tail swing of an item of plant shall be measured as the lateral distance from the running edge of the rail on which the machine is standing ...</i>
79	25	5.2.2.2 and 5.2.2.3 and 9.1.2.1	The three clauses give two different measurement methods for tailswing. 5.2.2.2 gives tailswing measured from rail running edge, and 5.2.2.3 gives it as measured from gauge profile. The term "radius" and measuring from either rail running edge or gauge limit is a misleading use of measurement, as the line that the counterweight follows is not circular with a radius from rail running edge, it is circular with a radius from slew centre (usually track centre line) Clause 9.1.2.1 mandates stating tailswing in terms of lateral gauge exceedance	Ensure consistency of tailswing measurement between 5.2.2.2, 5.2.2.3 and 9.1.2.1. Suggest "tailswing gauge exceedance", with tailswing being measured as a lateral distance from gauge profile	3	DC	24	5.2.2.2	5.2.2.2 describes the lateral swept envelope of the tail relative to the rail and allows planners to work out the necessary clearances when planning activities. The wording in 5.2.2.2 has been changed to: <i>The tail swing of an item of plant shall be measured as the lateral distance from the running edge of the rail on which the machine is standing ...</i>
80	25	5.2.2.3	There is a requirement to show the machine as "zero tail swing" on the data panel but the exceedance determined at 5.2.2.2 is not required to be shown	Make the approach to data panel information consistent by either stating the exceedance at 5.2.2.2 or removing the reference required by 5.2.2.3	14	DC	24	5.2.2.2	The wording in 5.2.2.2 has been changed to clarify how to measure the tail swing value and for it to be stated on the ECC and in the instruction handbook.
81	25	5.2.2.4	This is a duplication of 10.1.5.3	Remove clause	5	NC			This clause sets out the requirement that the information needs to be recorded in the handbook and on the ECC.
82	25	5.2.2.4	1530 is not referenced in plant safety plans. The wording relating to this is therefore superfluous.	Remove wording	5	NC			The clause is about the provision of information to go on the ECC and in the Use of Plant Safety Plan that is supplied by the manufacturer of the machine; see G10.1.5.7.
83	25	5.2.2.4	Uses the term "Use of Plant Safety Plan". Elsewhere "instruction handbook" is used.	Ensure consistency of terms.	3	NC			The Use of Plant Safety Plan is a separate document; see 10.1.5.
84	25	5.2.2.4	i) Use of Plant Safety Plan (UPSP) is a document specific to LU and no other Infrastructure Manager (IM) uses this document. ii) The cross reference to 10.1.5.3 is circular with the 10.1.5.3 repeating 5.2.2.4 verbatim (save for the cross reference)	i) Remove this LU specific reference as LU do not mandate or make reference to RIS-1530-PLT. ii) If the clause is not removed correct the cross reference so that 10.1.5.3 informs 5.2.2.4 rather than repeating it.	3	NC			Clause 5.2.2.4 sets out the requirement. Section 10.1.5 collates the information into the document. Whilst the UPSP originated on LUL, the information it contains is useful for planning work on any infrastructure.

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85	26	5.2.2.5	This is not consistent with COP0032. There are means of working ALO other than MLDs. Whether or not a machine has an MLD does not define whether or not it can work ALO. ALO working is a function of the worksite just as much as it is a function of the machine.	Remove all references to Any Line Open working in RIS-1530-PLT. Mandate that the type of MLD, the MLD pre-set positions (if applicable), the machine gauge, and the work equipment gauge exceedance are stated on the ECC, data panel and instruction handbook. From this, planners can establish a SSoW. It is not possible for 1530 to say when machines can and can't be used ALO, as it is a function of both the worksite and the machine, not just the machine.	3	NC			This clause is about the provision of MLD to control the lateral movement of the machine; it is a signpost to the requirements in section 5.8. How a machine is used will depend on the SSoW.
86	26	5.2.2.5	document refers to ALO	remove reference to ALO and just state it is fitted with a movement limiting device then it is up to the planning for operation to decide if they can work ALO or not	13	NC			This clause is about the provision of MLD to control the lateral movement of the machine; it is a signpost to the requirements in section 5.8. How a machine is used will depend on the SSoW.
87	26	5.2.2.6 and G 5.2.2.9	The clause says it doesn't apply to MEWPs, but then the guidance says it doesn't apply to other machines (e.g. piling rigs).	Move the text from the guidance note into the clause.	3	DC	25	5.2.2.6	Text in G 5.2.2.9 moved as suggested.
88	26	5.3.1 c	This is inconsistent with the 60m set out in BS EN 15746-1:2020, it should be aligned with the BS EN or justification given for the deviation.		9	DC	25	5.3.1 c)	Dimension corrected to 60m.
89	26	5.3.1.	All track conditions other than c (50m curve radius) appear to be NRMI specific and not reflective of other infrastructures	Either specify the standard is intended to provide conformance to NR requirements or amend the infrastructure parameters stated to make them more inclusive (universal)	14	DC	25	5.3.1 c)	Dimensions amended to align with BS EN 15746-1:2020 and prEN 15955-1 (Except for twist): b) 200mm cant (Annex F of 14033-2, referred from 15955-1 clause 5.1); also in Table A1 of 15955-1. c) 60 m curve as shown in 15746-1 Table A.3 d) 1:25 gradient same as 40‰ in 14033-1.
90	26	5.3.2	i) The provision for OTP to be stable on all cants and gradients in working made and controlled by engineering means is not understood e.g. does this allow for a lower value (i.e. 150 mm cant) to be used? ii) the requirement for stability on all cants and gradients as set out in 5.3.1 does not reflect the operational conditions encountered and so restricts capability of machines unnecessarily i.e. where are 50m curves and 200mm occur the gradient is much less than 1:25 and vice versa	Clarify clause ii) Specify a test regime which reflects the worst case scenario(s) of track conditions which exist on NRMI (and other infrastructures) and allow machines to be built to and tested against these real conditions rather than the worst case of all values in combination simultaneously	14	NC			The criteria set out in 5.3.1 have been carried over from Issue 6. The explanation why these values have been selected is given in G 5.3.5, G 5.3.6. The criteria are design values. Where a machine is not capable of achieving these, then it is permissible to declare the actual capability as a limitation on the ECC and in the instruction handbook; see requirements in 5.6.1 and 5.6.2.
91	27	G 5.3.3	What is GB Infrastructure? G 5.2.1.16 states “... GB mainline railway and the sub-surface lines of London Underground”	Define GB Infrastructure and make the references to Infrastructures constant throughout the document (or by state exception)	14	DC	26	G 5.3.3	‘GB infrastructure’ changed to ‘GB mainline railway’ throughout for consistency.

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92	27	G 5.3.5	Is the statement “The actual track condition found on the GB mainline railway is potentially more onerous than those shown due to transient discrete faults.” accurate given that 5.3.1 lists the track conditions including item g track twist as set out in Appendix A?	Check veracity of statement and delete if it is found that inclusion of Appendix A actually provides the most onerous track conditions	14	NC			This statement has been carried over from Issue 6.
93	27	G 5.3.7	This clause states “The minimum radius curve shown is for design purposes; the actual capability is set out in 5.6.1.”, however this is a circular reference as section 5.6.1 does not provide any information on “actual capability”	Correct the cross reference and ensure that the Standard will provide clear and sufficient information on minimum curve radii	14	DC	25	G 5.3.1 c)	The minimum radius in 5.3.1 has been relaxed to 60m to align with EN 15746-1 Table A.3.
94	27	5.4.1	Duplication of 10.1.3.1 c)	Remove clause	5	NC			This clause sets out the requirement that the information needs to be recorded in the handbook and on the ECC.
95	27	5.4.2	The clause states that if speed is controlled by engineering means then a speedometer is not required (us of “or”). Clause 5.4.7 says that machines with driving positions must have a speedometer. A driving position is defined in the standard as “any position where a self propelled machine is controlled for movement along track”. Other than a trailer or trolley, I cannot think of any OTP that doesn’t have a driving position. Note clause 5.4.2 specifically does not apply to trailers or trolleys. Therefore the clause is redundant. This was an existing anomaly in RIS-1530-PLT issue 6 which caused confusion within the industry, with many people thinking that if the machine speed was limited by engineering means they didn’t need a speedometer. The issue is that they would be unable to control speed for reduced speeds such as check rail speeds or towing speeds.	Remove clause 5.4.2.	3	DC	26	5.4.2	Clause 5.4.2 is about controlling the maximum speed of a machine it is separate to the requirement for the speedometer (which is covered by 5.4.7). Clause 5.4.2 b) has been deleted to remove the confusion.
96	27	5.4.3	i) the standard introduces a new machine type which is not elsewhere identified or defined: Does this refer to machines which are entirely controlled by pedestrians, or occasionally pedestrian controlled (e.g. have a remote control option in working mode) or both ii) This document has numerous clauses which make reference to speed but these references are inconsistently presented as either “km/h (mph)” or “mph (km/h)”	i) Provide a description and definition so it is clear the applicability of this clause. ii) Ideally remove reference to km/h in accordance with comment against clause 5.4.8 a) if this is not done then standardise the presentation of speed information throughout the document as mph (k/h)	14	DC	27	G 5.4.16	This requirement has been in from issue 1 published in April 2006. G 5.4.16 new guidance added: <i>Pedestrian controlled powered machines include lightweight demountable machines that have a motor to assist manual propulsion, which are erroneously referred to as ‘motorised trolleys’; see also G 4.5.3.</i> Speeds changed to mph (km/h) <i>throughout</i> for consistency.
97	27	5.4.6	Clause 5.4.6 again implies a speedometer is not required by making reference to 5.4.2.	Remove reference to clause 5.4.2 in clause 5.4.6.	3	DC	26	5.4.7	Clause 5.4.6 deleted. Speedometer accuracy added to bullet list in 5.4.8 (now 5.4.7).

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98	27	5.4.6 5.4.7	5.4.6 states a speedometer is one method of achieving speed control. 5.4.7 states a speedometer is mandatory for machines with a driving position	Clarify in 5.4.6 that all machines with a driving position must have a speedometer, OR Remove 5.4.7	5	DC	26	5.4.7	Clause 5.4.6 deleted. Speedometer accuracy added to bullet list in 5.4.8 (now 5.4.7).
99	27	5.4.7	This statement clashes with 5.4.2 pt a,b & c	Amend as required	9	DC	26	5.4.7	Clause 5.4.2 is about controlling the maximum speed of a machine and is separate to the requirement to fit a speedometer to indicate the speed of the machine. Clause 5.4.2 b) deleted to remove the confusion.
100	27	5.4.7	Is it necessary to fit a speedometer if the machine speed is controlled by engineering means? And the necessity to operate in either direction is given in 5.4.8	Delete 5.4.7	10	NC			Clause 5.4.2 is about controlling the maximum speed of a machine and is separate to the requirement to fit a speedometer.
101	27	5.4.7	This requirement appears to not align with 5.4.2 and particularly 5.4.2. c and the information may appear to be contradictory according to how it is inferred.	Jointly review 5.4.2 & 5.4.7 with the view to eliminate any contradiction and/or scope for confusion. Ideally the content of the clauses will be combined as a single clause which clearly sets out the requirement: use of a hierarchy may be beneficial.	14	NC			Clause 5.4.2 is about controlling the maximum speed of a machine and is separate to the requirement to fit a speedometer to indicate the speed of the machine. Clause 5.4.2 b) deleted to remove the confusion.
102	28	5.4.8 a	There is a requirement to provide speed indication in both mph and km/h	Why is it necessary to provide speed indication for UK Rail machines in km/h when speeds are shown in mph	14	NC			As part of the ERTMS fitment to replace signals it was proposed to use distances in km and speeds in km/h.
103	28	G 5.4.11	No title in the RAIB reference, other reports exist that are under the same reference number	Include Title of RAIB report "Collision between road-rail vehicles at Cholmondeston"	9	NC			The full title of 'RAIB Report 08/2019' is given in the list of references.
104	28	G5.4.11	Guidance states it is good practice to fit a speed limiter.	If this is recommended. Add it to the appropriate clause.	5	NC			This guidance supports clause 5.4.2 which permits the maximum speed to be controlled by engineering means (speed limiter).
105	28	G5.4.12	Clause is repetition of G5.4.11	Remove clause	5	NC			G 5.4.12 is additional to G 5.4.11 and covers the isolation of this protection measure by the operator.
106	28	G5.4.12	Is this not a requirement and not guidance	Make a requirement	9	NC			The requirement is given in 5.4.2; this clause provides additional information setting out how it is to be implemented.
107	28	G5.4.12	We are unclear as to the practical implication of changing the wording from "need" to "good practice". This is especially true given the requirements of 5.4.2. We had several different interpretations from the team while reading it suggesting it was ambiguous.	Improve wording or provide example. Otherwise consider removing.	12	NC			'Good practice' is the terminology used in RSSB published document and is specifically described in the definitions section of RIS-1530-PLT. Good practice is defined as: <i>A process or method that has been shown to work well; succeeds in achieving its objective(s); is widely accepted; and therefore can be recommended as an approach.</i>
108	28	G 5.4.12	This should not be Guidance; it should be mandated that the limitation and indication of speed be automatically applied in rail mode so that it cannot be isolated by the operator	Amend document so that G 5.4.12 is presented as a requirement	14	NC			The requirement is given in 5.4.2. G 5.4.12 sets out a recommended means of achieving that requirement.
109	28	G 5.4.13	Is this not a requirement and not guidance	Make a requirement	9	NC			This is a clarification statement, not a requirement.

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110	28	G5.4.16	The requirement to state max speed achievable in each gear could lead to an excess of information presented to the driver on machines with a many selectable rations.	Remove clause. Speedometer is adequate for indicating machine speed to driver	5	NC			This guidance is about avoiding damaging the drive system by over-speeding in a particular gear. The speedometer alone will not mitigate this risk.
111	28	G 5.4.16	This is not considered good practice but is sometimes used as a means to comply with 5.4.2 a	Present this guidance as a possible means of compliance with 5.4.2. a ONLY. Presenting otherwise is not necessary for a competent operator and we consider it good practice to reduce the amount of operator information provided to both reduce “sensory overload” and maintain optimal visibility from the driving position.	14	NC			The requirement is given in 5.4.2. G 5.4.16 provides useful information to avoid potential damage to machine by over-speeding in a particular gear.
112	28	5.5.1	This is inconsistent with the 5t set out in BS EN 15746-1:2020 it should be aligned with the BS EN or justification given for the deviation.		9	DC	27	5.5.1.1	Masses changed to align with BS EN 15746-1. Axle load less than five tonnes (wheel load 2.5 tonnes).
113	28	5.5.1.1	Clause is duplicate of 10.1.2.2 Machines are not permitted to operate spring operated points within a possession.	Remove clause	5	NC			This clause sets out the requirement that the information needs to be recorded in the handbook and on the ECC.
114	28	5.5.1.1	If any axle load is less than four tonnes (wheel load of two tonnes), this shall be shown on the ECC and included in the instruction handbook, as set out in 10.1.2.2 d)	Splitting this requirement and adding guidance hasn’t made the clause clearer. Add context back in for reasoning – I.e. ‘The machine cannot be expected to activate train operated points’ as per RIS-1530-PLT Issue 6.	11	NC			This is the rationale why machines are not permitted to operate spring operated points within a possession
115	28	5.5.1.1	This requirement is presented in such a way as it is applicable to all OTP (and trolleys) it would not appear to apply (or at least be applied) to rail trailers where in tare condition the axle loads are typically circa one and a half tonnes	Clarify the intended applicability of this clause and either qualify it as being applicable to powered machines or highlight that it includes trailers (noting the variable axle loads when in tare and laden condition)	14	DC	27	5.5.1.1	If the axle load of any powered machine or trailer is less than five tonnes (wheel load of 2.5 tonnes) ...
116	29	G 5.5.1.2	Clause is duplicate of 10.1.2.2 Machines are not permitted to operate spring operated points within a possession.	Remove clause	5	NC			This is the rationale why machines are not permitted to operate spring operated points within a possession.
117	29	G5.5.1.2	This would be more appropriate above Table 1 this is also not consistent with BS EN 15746-1:2020		9	DC	27	G 5.5.1.2	Wheel load amended to align with revised 5.5.1.1.
118	29	G 5.5.1.3	The Standard makes frequent erroneous reference to a “Rated Capacity Indicator” whereas the requirement is actually for a Rated Capacity Limiter (RCL)	Provide a definition of both RCI and RCL and then use the term Rated Capacity Limiter throughout the Standard (other than in rare instances where Rated capacity Indication may be an acceptable means of compliance)	14	NC			RCI retained for consistency with previous issues. The point raised in the comment is addressed by the guidance in G 9.7.1.8.
119	29	5.5.2	There is a missing requirement to limit the maximum wheel load to comply with Table 1 (G 5.5.2.4 hints at it !!!)	Insert requirement for maximum wheel load	10	DC	27	5.5.1.2	New requirement added: <i>5.5.1.2 The maximum permitted load on rail wheels shall not exceed the values set out in Table 1.</i>
120	29	5.5.2.1	It would appear that this clause is intended to allow for “repeatable” testing and so accurate	The Standard should clearly specify the testing “variables” (or require them to be noted	14	DC	28-9	5.5.2.1	Reworded:

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			assessment of machines against the tolerances stated in the Standard. However, there are many other variables which have far greater impact on the repeatability of testing and repeatability of results especially where machine has a rotational superstructure, extendable equipment or both. When testing 360° excavators the orientation of the machine “arm” over the front or fixed end has a significant impact on results. The angles/heights of the arm itself has an even greater impact	against the First in Class machine. We suggest that for 360° excavators and MEWPs the “arm” is over the fixed end. For mono boom excavators the arm should be positioned so that the “dipper arm” is perpendicular and for machines with 2 piece booms the “luffer arm” should be horizontal and the dipper arm perpendicular. Where the length of the dipper arm prevents it from being placed in the vertical position then the angle at which it was positioned for the test should be recorded.					<i>The value of each wheel load shall be taken with all consumables full, with the machine in its fully laden condition, including the operator and the maximum number of passengers; for machines with rotating superstructures, extendable equipment, or both, these shall be in their stowed position for travelling mode.</i>
121	30	5.5.2.2	How can the test actually be undertaken on flat level track?	Reword to “Tests shall be undertaken in such a way as to accurately simulate the conditions of flat level track”	14	DC	29	5.5.2.2	Reworded <i>Tests shall be undertaken in such a way as to simulate operation on flat level track.</i>
122	30	5.5.3.1	This clause says not to exceed values in 5.5.4 and 5.5.5 but they do not give a maximum value – just a means to accurately calculate the actual value.	Amend wording to: Except for machines deliberately designed to bend rail, the maximum load exerted on the rails by any single rail wheel, or roller, in working mode shall not exceed those set out in columns 3 to 6 of Table 1, as calculated using method in 5.5.4 or 5.5.5.	10	DC	29	5.5.3.1	Clause amended as suggested.
123	30	5.5.3.3	The reference to light rail systems may be accurate but we question why consideration of light rail systems is only included in relation to wheel loads (the cants curves and gradients presented are do not so consider light rail systems)	Either make the Standard so that it addresses the requirements of light rail systems in their entirety or remove any specific reference(s) to light rail systems	14	NC			Light rail in the context of the endorsement is explained at the bottom in Table 1; it is rail that has the lower resistance to tensile failure value of 680 N/mm.
124	30	G.5.5.3.7	This is not guidance but a requirement because it amends 5.5.3.1	See proposed wording amendment for 5.5.3.1	10	DC	29	N/A	Guidance deleted.
125	31	G 5.5.3.9	The requirement for wheel loads on worst case track conditions as set out in 5.3 does not reflect the operational conditions encountered and so restricts capability of machines unnecessarily i.e. where are 50m curves and 200mm occur the gradient is much less than 1:25 and vice versa	Specify a test regime which reflects the worst case scenario(s) of track conditions which exist on NRMI (and other infrastructures) and allow machines to be built to and tested against these real conditions rather than the worst case of all values in combination simultaneously.	14	NC			If an alternative set of criteria can be identified and demonstrated to represent the worst- case scenarios for GB mainline track conditions, then these could be incorporated in a future revision of the document. The guidance in G 5.3.5 and G 5.3.6 explains why the existing track criteria were chosen, and point out that track undergoing renewal could exceed these target values. The criteria have been unchanged from issue 2 (Dec 2009)
126	31	5.5.4.1	Given this is basically a direct lift from 15746 why not just reference that standard here and remove the equations per 5.5.6.1		9	NC			The equation also applies to demountable machines and currently this is only available as prEN 15955-1:2022. When this is published there will be an opportunity to rationalise some of the requirements in RIS-1530-PLT.
127	32	5.5.5.1	Given this is basically a direct lift from 15746 why not just reference that standard here and remove the equations per 5.5.6.1		9	NC			The equation also applies to demountable machines and currently this is only available as prEN 15955-1:2022. When this is published there will be an opportunity to rationalise some of the requirements in RIS-1530-PLT.
128	32	5.5.6	While we understand the importance and use of the RA and RL values, we do not believe	Investigate the replacement of RA and RL numbers with an alternative approach that	12	NC			The RA and RL values are currently the means to demonstrate compatibility with the strength of underline bridges.

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			that this approach is appropriate for the majority of RRV equipment. This is based on an analysis of the way these numbers are calculated and they are clearly intended for rolling stock rather than single pieces of equipment. This leads to misleading or unreliable numbers even when calculated correctly.	better suits the reality of the situation. This would provide a better assessment of infrastructure risk from RRV equipment. We accept this will not be possible in this release but think that it would add value for manufactures, operators and Network Rail into the future.					With the roll out of ERTMS, Network Rail will need to decide if it is going to adopt 'line categorisation' as the interface criterion. This is used on continental railways and is determined in accordance with EN 15528 and referenced in BS EN 15746-1 and prEN 15955.
129	32	5.5.6.1	This requirement existed in RIS-1530-PLT issue 6, but was not applied by any PAB because GERT8006 specifically stated that it is not applicable to OTP. We are not aware of any ECCs that show an RA or RL figure for OTP, even though there are many machines with axle loads in excess of 12 tonnes. GERT8006 issue 3, which was issued in 2021 (6 years after RIS-1530-PLT issue 6) clause 4.2.1 again specifically states that it is not applicable to OTP. Therefore the latest 8006 still says that it does not apply to OTP.	Remove requirement to calculate RA and RL number for OTP.	3	DC	31	5.5.6.1	Reference to calculating RA values deleted. The latest version of S1051:2022 still requires the calculation of the RL value.
130	32	5.5.6.1	GERT8006 specifically excludes RRVs for use in possessions, these are POVs.		9	DC	31	5.5.6.1	Reference to calculating RA values deleted.
131	32	5.5.6.1	For machines in travelling mode with an axle load greater than 12 tonnes, the axle spacing shall be stated and a route availability (RA) and reduced railway light loading (RL) loading calculated for the intended use of the vehicle, as set out in GERT8006 and S1051	Derogations have been awarded for RRV, RA & RL values and previously considered not feasible for RRV's. Guidance for applicability is required or removal of the clause.	11	DC	31	5.5.6.1	Reference to calculating RA values deleted. The latest version of S1051:2022 still requires the calculation of the RL value.
132	32	5.5.6.1	Route Availability (RA) and reduced railway light loading (RL) ??? are LU specific requirements	Remove this LU specific reference as LU do not mandate or make reference to RIS-1530-PLT	14	DC	31	5.5.6.1	Reference to calculating RA values deleted. The latest version of S1051:2022 still requires the calculation of the RL value. RIS-1530-PLT is a railway industry standard that can be adopted by other infrastructure managers.
133	32	5.5.6.2	The RA and RL values shall be stated in the instruction handbook, as set out in 10.1.3.10, and shown on the ECC. Where on ECC is this shown it is not included in Appendix H	If reference to RA & RL is retained then clearly state how this is presented on an ECC and include it in the example presented as Appendix H	14	DC	31	5.5.6.2	The requirement for the RA value has been deleted so there is no longer a need to refer to ECC. , as shown on the ECC' deleted.
134	32	G 5.5.6.3	RA and RL are not mentioned in 15746-1		9	NC			EN 15746-1 references the European 'line categorisation' which is determined in accordance with EN 15528. The RA and RL values are the alternative GB means of covering this interface. With the roll out of ERTMS, Network Rail will need to decide if it is going to adopt 'line categorisation' as the interface criterion instead of the current RA values .
135	33	5.6.1.2	We should be prioritising engineering restrictions.	e) where possible enforced by engineering means.	9	NC			This clause is about temporary speed restrictions that arise from traversing localised track features. The use of engineering means is more appropriate when controlling the maximum speed of the machine see – 5.6.1.3.

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136	33	G 5.6.1.7	What is a load secured in the bucket? If this referring to materials (e.g. ballast) or the carrying of equipment (e.g. attachments in a bucket).	Clarify intent of clause	14	NC			The load secured in the bucket is about it not falling out when travelling: it could be materials or attachments in the bucket.
137	34	G 5.6.2.8	The guidance has been included but there is no indication of how this will be achieved nor whether it is reasonably practicable	Consider the practicality and reasonable practicality of addressing this guidance clause and either add text to address this or delete the clause.	14	NC			This guidance is to remind the designer when they are undertaking their hazard analysis of the risk of wheel unloading whilst digging.
138	35	G 5.6.3.8	The requirement for wheel loads on worst case track conditions as set out in 5.3 does not reflect the operational conditions encountered and so restricts capability of machines unnecessarily i.e. where are 50m curves and 200mm occur the gradient is much less than 1:25 and vice versa	Specify a test regime which reflects the worst case scenario(s) of track conditions which exist on NRMI (and other infrastructures) and allow machines to be built to and tested against these real conditions rather than the worst case of all values in combination simultaneously.	14	NC			If an alternative set of criteria can be identified and demonstrated to represent the worst-case scenarios for GB mainline track conditions, then these could be incorporated in a future revision of the document. The guidance in G 5.3.5 and G 5.3.6 explains why the existing track criteria were chosen and point out that track undergoing renewal could exceed these target values. The criteria have been unchanged from issue 2 (Dec 2009).
139	34	Section 5.6.3	15746-1:2020 clause 5.5.3.1 has an allowance for rigid bogie frames. Where the axle spacing is <1500mm and the bogie is rigid, it can be treated as a single axle instead of two independent axles. G 5.6.3.7 states that it is consistent with EN 15746-1:2020.	Add rigid bogie allowance to RIS-1530-PLT issue 7.	3	DC	35	G 5.6.3.14	New guidance added G 5.6.3.14: Where the machine is fitted with a freely rotating bogie with a wheelbase of less than or equal to 1800mm, it can be considered as single unit instead of two independent axles.
140	34	Section 5.6.3 and G5.6.3.9 d)	15746-1:2020 clause 5.5.4.2 makes clear that use of tip testing and setting SWL as 67% of first wheel tip is an acceptable alternative to dQ/Q testing for lifting machines in working mode (and only mandates additional dQ/Q testing if the suspension is different in working mode to travelling mode). RIS-1530-PLT issue 7 (or any previous version of RIS-1530-PLT) does not make this explicitly clear (although it is the practice that has been followed by the industry). G 5.6.3.7 states that it is consistent with EN 15746-1:2020.	Update for consistency with EN 15746-1:2020 clause 5.5.4.2	3	NC			This guidance on the safe working load is already covered by G 9.6.3.4
141	34	5.6.3.1	The clause only applies to first of class machines (as per clause text and Appendix F). This means that there is no mandatory requirement to check the functionality of oscillating axles on every machine. There have been a number of NIRs for machines derailing due to non-functional oscillating axles.	Mandate a test of the oscillating axle function, ideally dQ/Q test, on all machines.	3	NC			The requirement for controlling movement of the oscillating axle is set out in 5.6.5. Appendix F shows a functional test for the first of class and all successive machines of the same class is needed to demonstrate compliance with the requirements in 5.6.5.
142	34	5.6.3.1	Clause states only First of Class machines shall have static dQ/Q testing	This would then only require a SoC machine to have its wheel weights checked on level track.	13	NC			The requirement for controlling movement of the oscillating axle is set out in 5.6.5.

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				This would not confirm correct operation of suspension, as in some recent machines these were found to be locked.					Appendix F shows a functional test for the first of class and all successive machines of the same class is needed to demonstrate compliance with the requirements in 5.6.5.
143	34	5.6.3.6 c)	The clause refers to the “stability” of the machine. However this section of the standard relates to prevention of derailment, not prevention of overturning.	Change “stability” to “running behaviour”	3	NC			Section title 5.6.3 makes it clear that we are dealing with the prevention of derailment.
144	35	G5.6.3.7	I may be calculating it incorrectly but the calculations in Appendix A do not match with the glim calculations in 15746-1 5.5.3.1		9	DC	34	G 5.6.3.7	The track criteria in 5.3 and Appendix A are considered to represent the GB mainline railway. Reference to BS EN 15746-1:2020 and prEN 15955-2:2022 has been replaced by ‘for operation on the GB mainline railway’.
145	35	G 5.6.3.8	The guidance states it is “good practice” to simulate worst case track conditions. It needs to be clear whether this is mandatory or not, and what “worst case” means. Historically, some machines have been tested on a combination of maximum cant, gradient and twist, whilst others have only been tested on cant and twist (presumably because large cants are not expected to be found in high gradient areas). This has a significant effect on the test results, as gradient causes a large CoG shift. For the industry to be fair, it is essential that all machines are tested in the same way.	Remove “good practice”. Mandate the track conditions on which the machine must be tested (combined maximum cant, gradient and twist, or maximum cant+twist only).	3	NC			The combination of cant, gradient and twist making up the worst case will depend on the size, geometries and loading conditions of different machines. The designer will need to declare the track combination has been used and why they consider this represents the worst-case track conditions for that machine.
146	35	G 5.6.3.9 f)	The guidance refers to the risk of overturning. This section of the standard is in relation to derailment, not overturning. Overturning occurs at wheels loads <0 kg, but derailment occurs at wheel loads > 0kg. The reference to overturning is therefore confusing.	Remove point f)	3	NC			The risk of overturning is still a potential contribution to a machine derailment.
147	35	G5.6.3.9	Are we happy to have that as only good practice?		9	NC			This guidance is providing information on the combination of factors that should be considered. It has been guidance in the previous issues of RIS-1530-PLT.
148	35	G5.6.3.9	"Where a technical justification is required" should be a new G number		9	DC	34	G 5.6.3.10	Corrected.
149	36	G 5.6.3.12	The guidance says dQ/Q testing is not required where the axle float is 15mm > than maximum cross level. EN 15746-1:2020 says it must be 25mm. G 5.6.3.7 states that it is consistent with EN 15746-1:2020.	Update to 25 mm.	3	DC	35	G 5.6.3.13	Changed to 25mm for consistency with EN 15746-1:2020.
150	36	G5.6.3.12	This is inconsistent with the 25mm set out in BS EN 15746-1:2020		9	DC	35	G 5.6.3.13	Changed to 25mm for consistency with EN 15746-1:2020.
151	37	5.6.6	Clause 5.3.2 requires the machine to be stable by design or controlled by engineering means.	Make clear that operational limitations are in addition to, not instead of, engineering controls. Remove reference to “stability indicators”	3	NC			Stable by design includes the manufacturer declaring if any operational limitations need to be applied when using the machine. There is no inconsistency between 5.3.2 and 5.6.6

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			Section 5.6.6 refers to operational limitations to keep the machine stable, and guidance G 5.6.6.4 refers to stability “indicators” (not “controllers”). The standard is therefore not consistent.						Fitment of a stability indicator is an engineering means to provide the operator with a warning and is in addition to the information given in the instruction handbook.
152	37	5.6.6.1	This clause is positioned under the main heading of Dynamic Stability (5.6) but the wording “Any limitations ... ” does not appear to be restricted to stability	Clarify scope of the clause or it intended to address more than stability relocate it to a more appropriate location	14	DC	36	5.6.6.1	Reworded: <i>Where operational limitations are identified to ensure the dynamic stability of the machine, they shall be clearly shown on the ECC....</i>
153	37	G5.6.5.5	Where the suspension can be locked while the machine is not moving along the track, or any way deliberately altered to change its configuration from that used while moving, it is good practice not to allow the machine to move along the track until the suspension is in the configuration for moving along the track	The guidance and use of ‘good practice’ contradicts the requirement of 5.6.5.1 which states ‘it shall not be possible’	11	NC			The requirement is in 5.6.5.1. This guidance is about confirming the suspension has been put into the correct configuration before allowing movement (such as detecting the static locking cylinders have actually retracted and interlocking this with the movement controls).
154	37	G 5.6.6.4	Where a machine is not fitted with an RCI and the centre of gravity of the machine can change during the use of the machine, it is good practice to include information in the instruction handbook as to the method of loading or discharging which may cause an unfavourable situation. The machine could also be fitted with a stability indicator with an appropriate audible or visual alarm system.	Inconsistent guidance vs 9.5.5 which states the calculation should be made and 9.5.5.2 which permits calculation opposed to RCI.	11	NC			This guidance recognises that not all machines are fitted with RCI and measures need to be taken to ensure safe use of the machine. Section 9.5.5 is specifically about the safe use of a machine for digging and is in addition to section 5.6 which is about ensuring the machine is stable when moving along the track.
155	37	5.7.1.1	Why is 5.7.5 not listed?	Either remove whole clause, or add 5.7.5 to list of sections that apply to all machines	3	DC	37	5.7.1.1	Added “service”.
156	37 41	5.7.1.2 5.7.4.1	Why are only service brakes required to be air transmission? Why not park brakes?	Check consistency with rest of standard	3	NC			The industry has decided in RIS-1530-PLT Issue 1 (Apr 2006) that the service brakes on trailers shall be air operated. Parking brakes are still permitted to be hydraulic or pneumatically operated on an ‘energise to release’ principle. The pneumatic connections are described in Appendix J section J.1.
157	38	5.7.1.4	Where hydraulic connections and systems are used, the design shall: a) Not allow spillage during use (including connection and disconnection), except during an emergency breakaway of the trailing load; and b) Where the brake is released by hydraulic pressure, there shall be a means of eliminating residual trapped pressure (above atmospheric) within the trailing machine after the coupling is disconnected; and c) Preclude the collection of oil in vented storage vessels where the oil is not automatically returned to the towing machine.	Splitting this out from the clause above (as with Issue 6) has made the requirement unclear. Air braking medium is required in other clauses. Use of ‘existing hydraulic connections for use with in certification hydraulic medium trailers’ for example could	11	DC	37	5.7.1.4	The industry has decided that the service brakes on trailers shall be air operated. Parking brakes are still permitted to be hydraulic or pneumatically operated on an ‘energise to release’ principle. Added “... are used in addition to air systems, ...”

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
158	38	5.7.1.7	Torque testing of brake systems and/or testing of brakes on individual wheels or wheelsets is not mandated so the fitment of devices to enable it to be undertaken should similarly not be mandated.	This should be an option. Reword clause to make it clear that the fitment of 1" square drive and/or design allowing testing of brakes on individual wheels or wheelsets is optional.	14	NC			The provision of the 1" square drive or other means to tests brakes on individual wheel was introduced as a requirement in RIS-1530-PLT issue 6 (clause 5.7.1.4).
159	38 39	5.7.1.7 G5.7.1.25	<p>Within the clause, it is not clear what machine types this applies to.</p> <p>Previously, NR have stated it only applied to 9B machines.</p> <p>Most 9A machine park brakes cannot be torque tested, as there is a significant hydrostatic force in the motor that will add to the measured torque. It may be possible to torque test 9A park brakes with OEM support, as they will have data available for target hydrostatic and friction brake forces, but in general existing 9A machine park brakes should not be torque tested.</p> <p>Most 9A machine service brakes cannot be torque tested. A significant proportion (sometimes all) of the service braking force comes from forces within the hydraulic motor. The torque measured will depend on the speed that the wheel is turning. Without OEM input into how fast the torque should be applied, owners and third party upgraders cannot set appropriate torque test instructions</p> <p>It is not clear whether or not trailers are included. Torque testing of trailers requires the trailer to be lifted, which may be more difficult and higher risk than pull testing the trailer.</p>	<p>Update to state that the requirement applies to 9B machines only.</p> <p>Add guidance that trailers can be torque tested, but that a SSoW will be required.</p>	3	NC			<p>5.7.1.7 gives two options to carry out the brake testing.</p> <p>Option a) 1" square drive is to permit torque testing.</p> <p>Option b) If the manufacturer deems that option a) is not appropriate then they need to provide an alternative means to test the brakes on an individual wheel or wheelset.</p>
160	38	5.7.1.7	1" adaptor for torque testing of brakes was previously only mandated for 9B machines as clarified by the NR head of plant at the time. 9A machines with hydrostatic service brakes cannot be reliably torque tested.	Confirm if 1" drive is required on 9A	5	NC			<p>5.7.1.7 gives two options to carry out the brake testing.</p> <p>Option a) 1" square drive is to permit torque testing.</p> <p>Option b) If the manufacturer deems that option a) is not appropriate then they need to provide an alternative means to test the brakes on an individual wheel or wheelset.</p>
161	38	5.7.1.8	The clause relates entirely to the instruction handbook. It should therefore exist in section 10 only.	Move to section 10	3	NC			The requirement here is to determine the torque value, section 10 covers what is recorded in the instruction handbook.
162	38	5.7.1.8	Clause is a duplication of 10.1.3.7	Remove clause	5	NC			The requirement here is to determine the torque value, section 10 covers what is recorded in the instruction handbook.
163	38	5.7.1.10	Clause states "Machines shall be designed to have a direct rail wheel dynamic (service) braking system ...". The definition of machines includes type 9A, 9B, 9C, 0A, 0B & 0D trailers.	Limit clause so it is only applicable to those machines types which require direct rail wheel service braking.	14	DC	37	5.7.1.10	<p>It is not just the RRVs; this clause also applies to powered demountable machines. Text amended to clarify the requirement.</p> <p><i>Powered machines fitted with direct wheel dynamic (service) braking systems shall be capable of providing a target deceleration of 12%g.</i></p>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
			The requirement for direct rail wheel service braking does not apply to type 9A?, 9C & 0D machines, OR The requirement for direct rail wheel service braking only applies to type 9B machines.						
164	38	5.7.1.12	Clause states “Each brake system shall be capable of holding ... “ Parking brake system s are used to hold whereas service brake systems are used to retard	Clarify the meaning of ““Each brake system” to either identify braking medium or brake system type. If service brake systems are required to hold their needs to be a suitable and sufficient Rationale clause provided else the requirement should not be applied to service braking systems.	14	NC			The service brake needs to be capable of bringing a moving machine to a stand on the 1 in 25 gradient and, whilst the machine is in operation, the service brake will be capable of holding the machine on the 1 in 25 gradient. The parking brake also needs to hold the machine when it is the shutdown condition.
165	38	G 5.7.1.14	a) As recognised in Part 1 of this Standard OTP machines are not “conventional rail machines” thus no meaningful comparison of OTP and conventional rail machine braking systems (satisfactory or otherwise) can be made b) Direct rail wheel braking systems on type 9B machines use a hydraulic transmission medium c) Hydraulic trailer braking is equally (and probably more) effective than pneumatic braking. As the vast majority of host machines do not have air supplies on the undercarriages then hydraulically powered air compressors are used to comply with this clause. Failure of a hydraulically powered compressor / compressor hose will result in a significant environmental incident.	a) This Rationale is flawed as it is not reasonable to compare OTP and purpose designed conventional rail machines. Write an new rational and equitable Rationale. b) clarify which braking systems this clause attempts to address as it is clearly not suited to all braking systems. c) A significant cost in terms of time money and effort is associated in equipping host machines with capability to pneumatically brake trailers. We question whether this is a reasonably practicable requirement. The rationale should present a robust engineering argument supported by a cost benefit analysis to demonstrate the reasonable practicability for requiring air braking. If this cannot be achieve then the Standard should not mandate the braking medium to be employed.	14	NC			In 2009 the GB plant industry took the decision to remove the option to fit hydraulic service brakes on trailers. RIS-1530-PLT issue 2 (Dec 2009) specified service air brakes were to be used when towing trailers after 31 Dec 2013. This decision is also reflected in the provision of air service braking for towing trailers in BS EN 15746-1:2020 and in the updated demountable machine and trailer standard prEN 15955:2022.
166	39	G5.7.1.15	It is good practice to ensure that there is no leakage of any polluting medium to atmosphere when coupling and uncoupling machines; hence mechanical, electrical or pneumatic systems are considered preferable. However, an exception is permitted for hydraulic connections.	Cautious of the use of exception given some operators have been ‘forced’ down the route of air having not wanted to fit air systems fleet wide.	11	DC	38	G 5.7.1.15	In 2009 the GB plant industry took the decision to remove the option to fit hydraulic service brakes on trailers. RIS-1530-PLT issue 2 (Dec 2009) specified service air brakes were to be used when towing trailers after 31 Dec 2013. Final sentence of G 5.7.1.15 amended to provide more clarity: <i>However, an exception is permitted for hydraulic connections that are used to apply the parking brake in the event of a breakaway.</i>
167	39	G5.7.1.16	If good practice is not seen as mandatory, there could be a proliferation of hydraulic park brake couplings, leading to incompatibility on the infrastructure	Move clause out of guidance section into mandated section	5	NC			This is RSSB standards policy (as agreed and endorsed by Standards Committees) wording for 'recommendations': see Definition of 'good practice'. The recommended type of VFB coupling is provided as an example. There may be a valid reason why a manufacturer may choose another coupling (to configure what can be connected); this would need to be explained to the purchaser of the machine.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
168	39	G5.7.1.18	Is this not a requirement and not guidance	Make a requirement	9	NC			The requirement is in 5.7.1.4. The guidance is providing supporting information on the design of tanks.
169	39	G5.7.1.19	Is this not a requirement and not guidance	Make a requirement	9	NC			The requirement is in 5.7.1.5. The guidance is setting out a possible means of achieving this requirement.
170	39	G5.7.1.20	What is this preferred over? It is unclear which clause this is applied to	Delete clause	5	NC			This guidance supports 5.7.1.7 that gives two options for carrying out static brake testing.
171	39	G.5.7.1.20	Why do you say 1" drive is the preferred option? The only other available option is for machine to be designed to be able to test individual wheel brake – what is wrong with that option?	Delete 5.7.1.20	10	NC			This guidance supports 5.7.1.7 that gives two options for carrying out static brake testing.
172	39	G5.7.1.20	The provision of a 1" square drive for brake testing is the preferred option	Not for all, suggest more generic wording to permit either torque or pull test – The Provision of a 1" square drive for brake testing is the preferred alternative to a pull test.	11	NC			This guidance supports 5.7.1.7 that gives two options for carrying out static brake testing.
173	39	5.7.1.22	Slack adjusters: these help towards achieving and fail safe design?	How? - The fitting of "Slack Adjusters" will not control or mitigate the runaway of the Genie, as they are still manually adjustable and require a S type cam or rotational system to operate the brakes. Should we not be looking towards more widely used "commercial vehicle" brake systems that "fail safe" are easy to adjust if not automatic and using spring application, released by the hydraulics or even air as a medium? Very few of the current DRWB's adjust automatically and require weekly maintenance tasks, yet Commercial Vehicle Calipers are auto adjusting and require minimal intervention between inspections, and fail safe – if there's no AIR the brakes are ON	8	DC	38	G 5.7.1.22	Guidance clarified to refer to automatic slack adjusters.
174	39	G 5.7.1.22	The clause does not make clear whether slack adjusters are necessary or not. It also takes no account of the use of the brake, or the maintenance regime. Spring applied brakes that are used as park brakes only, and not dynamically as service brakes, will experience very little wear between maintenance intervals (3 monthly torque testing). Spring applied brakes that are used dynamically may wear between 3 monthly torque tests, therefore where slack adjusters are not fitted, torque figures need to take account of wear between maintenance.	Update guidance to: "Spring applied brakes that are used to decelerate the machine (as opposed to hold the machine stationary), will be subject to wear. Where these brakes are not fitted with slack adjusters, the maintenance torque test frequency and torque limit must be sufficient for the worst case brake pad wear"	3	DC	38	G 5.7.1.23	New clause G 5.7.1.23 added: <i>Spring applied brakes that are used to decelerate the machine (as opposed to hold the machine stationary), will be subject to wear. Where these brakes are not fitted with automatic slack adjusters, the maintenance torque test frequency and torque limit need to be sufficient for the worst-case brake pad wear.</i>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
			Slack adjusters do not help in achieving a “fail safe” design, as slack adjusters can fail (see comment 28 regarding the term “fail safe”).						
175	39	G 5.7.1.23	The cross reference to 5.6.2 is to “Dynamic Stability - Working Mode” and presents no information pertinent to braking requirements	Amend to a valid cross reference (5.7.2?)	14	DC	38	G 5.7.1.24	Corrected to 5.7.2.
176	39	G5.7.1.25	Is this not a requirement and not guidance	Make a requirement	9	DC	37	5.7.1.7	Modified 5.7.1.7 “... OTP, including trailers, ...” Clause G 5.7.1.25 deleted.
177	39	G 5.7.1.25	The clause requires trailer wheels to have the capability to be torque tested. Trailer wheels are positioned inboard of the fixed trailer deck and n thus are not readily susceptible to (safely undertaken torque testing)	Remove requirement for 1” square drive on trailer wheels both as torque testing is impracticable and also because the Standard requires drawbar pull testing not torque testing	14	NC			The provision of the 1” square drive or other means to test brakes on individual wheel was introduced as a requirement on trailers in RIS-1530-PLT issue 6 (5.7.1.4 and G 5.7.1.4.2).
178	40	5.7	No mention of using calibrated equipment to undertake brake testing	Insert as required	9	NC			Calibration of equipment used to take measurements is outside of the scope of the RIS.
179	40	5.7.2.1	It has been stated that there is no such thing as “flat”, therefore a minimum gradient should be stated	Amend test to: A powered machine and a combination of powered machine and trailer shall be capable of stopping the fully laden machine and any permitted trailing load, on track with gradient less than 1 in 1000, in dry conditions, as set out in Table 2.	10	DC	40	G 5.7.2.6	New Guidance added: <i>Track with a gradient less than 1:1000 may be considered as level for the purpose of this testing.</i>
180	40	5.7.3	The speed differential here is 35 mph, whereas the speed differential for dynamic stability is 37 mph. It would be better to standardise on one value for the break point between machine requirements	Change brake value maximum speed to 37 mph	10	NC			The changeover value for stability comes from the ENs that use 60 km/h, which is equivalent to 37 mph. The braking distances in GMRT2045 are tabulated in 5 mph intervals. The stopping distance from 35 mph was selected as being the closest to 60 km/h.
181	41	5.7.4.3	Clause reads “... the service brake system of the towing machine shall simultaneously control the service brakes on all towed machines” is this intended to include towing activity during emergency recovery?	Clearly state if this requirement is or is not applicable to towing activity during emergency recovery	14	NC			The requirements are for normal operation. Recovery of a failed machine is not normal operation and is specifically covered in section 5.13. In 5.13.1 c) it states the tow bars need to be capable of withstanding the forces generated by the unbraked machine
182	41	5.7.4.4	Clause reads “The parking brake system shall operate simultaneously on all towing and towed machines.” is this intended to include towing activity during emergency recovery?	Clearly state if this requirement is or is not applicable to towing activity during emergency recovery	14	NC			The requirements are for normal operation. Recovery of a failed machine is not normal operation and is specifically covered in section 5.13.
183	41	5.7.4.5 b	Why does the requirement state “with the engine at idling speed”? Machines do not travel at idling speed so the requirement is not rational.	Amend to “with the engine revs at the lowest setting which allows travel with a towed load”	14	DC	40	5.7.4.5 b)	Text amended as suggested.
184	41	5.7.4.6	The term “trailer breakaway brake” is not recognised or understood. The park brake is applied and/or travel is inhibited when insufficient air is present in the system	Amend clause to reflect current engineering practice and to remove the term “trailer breakaway brake”	14	DC	40	5.7.4.6	Text amended: <i>If there is insufficient air in the service brake system to apply the brakes, the parking brake shall be applied, machine travel inhibited and a warning given to the operator.</i>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
185	41	G 5.7.4.8	What current engineering justification is used as the basis for the limitation of electric service braking to machines with GVW of less than 400 Kg? there have been quantum step development in electronic technologies since this clause was first presented in RIS-1530-PLT issue 2	Either remove the restrictions on electric service brakes or present a robust engineering justification in the Rationale section.	14	NC			There has not been any request to change the requirements applicable to the use of electric service brakes. A request supported by a robust engineering justification should be submitted as a proposal for a change. This could then be considered at the 12 month following the publication of the document.
186	42	G 5.7.4.12	Is this not a requirement and not guidance	Make a requirement	9	DC	41	N/A	The requirement is in 5.7.4.1. Guidance removed to avoid confusion
187	42	G 5.7.4.12	Clause is superfluous. Clause 5.7.4.1 states coupling type to be used.	Remove clause	5	DC	41	N/A	The requirement is in 5.7.4.1. Guidance removed to avoid confusion
188	42	5.7.5.1	The park brake on the machine is only required to hold unbraked trailing loads, not braked trailing loads. The “unladen” is not necessary. Laden is always worst case in relation to park brakes.	Update clause to “A parking brake shall be fitted that is capable of holding the fully laden machine and any approved unbraked trailing load, on a 1 in 25 (40%) gradient.”	3	DC	41	5.7.5.1	Amended as suggested
189	42	5.7.5.1	Why does the park brake fitted (presumably to the host machine) need to be capable of holding any permitted combination of trailing load when: i) all trailers in the combination are independently equipped with park brakes capable of holding them in their fully laden condition ii) the trailer brakes are applied concurrently with the machine brakes using the same controller iii) the trailer park brakes are failsafe iv) any test does not test just the braking performance of the host machine but also the performance of the trailer brakes and the result will be variable according to the braking efficiency(s) of the individual trailers used during the test.	Remove the requirement for testing the combination and thereby allow the Standard to have faith in the independent host machine and trailer parking brake requirements it specifies.	14	DC	41	5.7.5.1	Text amended to clarify the trailing load: <i>A parking brake shall be fitted that is capable of holding the fully laden machine and any approved unbraked trailing load for that machine, on a 1 in 25 (40%) gradient.</i>
190	42	5.7.5.4	Clause is duplication of 10.1.3.7	Remove clause	5	NC			Disagree; this clause gives the criteria for determining the force
191	42	5.7.5.4	a) Why is the minimum force figure required to pull the machine along flat, level, dry track, with the parking brake applied in rail mode required? It does not prove the holding ability of the park brake but will induce flat spots on the rail wheels. b) Cross reference to 10.1.3.7 appears inconsistent or incorrect and also circular as 10.1.3.7 states “The instruction handbook shall state the brake torque figures required	a) Amend requirement to state minimum park brake performance requirement (commonly 6% of GVW) or to reflect wording at 10.1.3.7 b) Review cross reference and amend to clarify and ensure it is not circular.	14	DC	41	5.7.5.6	5.7.5.4 amended <i>The force required to commence movement, when the parking brake is applied, shall be recorded in the instruction handbook; see 10.1.3.7</i> The means to determine the force value is set out in 5.7.5.7 (as renumbered)

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
			for each wheel, as set out in 5.7.1.8, and the parking brake derived force, as set out in 5.7.5.4.”						
192	43	G 5.7.5.9	Is this not a requirement and not guidance	Make a requirement	9	DC	41	5.7.5.5	Moved to be after 5.7.5.3, and reworded as a requirement: <i>The 500 N force shall also apply for lever-type application of the parking brake.</i>
193	43	5.7.6	This section is not well presented as it uses the term “machine” in a context other than that provided in 4.1. It is therefore not clear what testing is relevant to the host/towing vehicle and which to the towed vehicles (trailers)	Document the acceptance testing requirements for host/towing vehicles and towed vehicles (trailers) in separate sections.	14	NC			The testing methodology is unchanged from the previous issues of RIS-1530-PLT.
194	43	5.7.6.2	Testing towing machine brakes by brake testing with coupled trailers is an inconsistent method of testing and therefore does not measure the capability of the towing machine trailer brake system. The test measures the brake force of the entire consist, which will depend on the brake force available in the trailers. The brake force in the trailers could be much more than the minimum allowable maintenance limits, and therefore much more than is available on in-service trailers. Also, different trailers have different air volumes, and therefore different propagation rates. Clause 5.7.4.5 b) attempts to address air propagation, but again is not an accurate test, as different trailers have different air volumes, and “consecutive” is not defined – a small number of seconds between applications allows air pressure to build again. Towing machine air trailer brake system is a function of pressure and flow rate at the pressure required to apply the service brakes. The system should be tested by measuring it’s flow rate and pressure, not by inaccurate and highly inconsistent consist stopping distance tests.	Determine the pressures and flow rates required to achieve the necessary trailer brake force. This may require assessing all trailers currently approved, but there are not many different variations. Specify the required pressures and flow rates, measured at the coupling, as a function of the number of trailers. This can then be measured as part of maintenance as well as design.	3	NC			This testing methodology is unchanged from the previous issues of RIS-1530-PLT. The alternative method would need to be demonstrated to provide a better means of undertaking the acceptance testing. When sufficient validation work has been undertaken and there is industry support then potentially it could be incorporated into a future update of RIS-1530-PLT. At this stage is just a proposal.
195	43	5.7.6.2	Brake testing towing capacity by testing a whole consist. Does this test the towing machine or the trailers	Does this test the towing machine or the trailers. How when testing do you know which is working and if any are not working. Could this not be carried out better by a test around air flow and pressure in the system which would be more consistent and more in line with rolling stock testing.	13	NC			This testing methodology is unchanged from the previous issues of RIS-1530-PLT. The alternative method would need to be demonstrated to provide a better means of undertaking the acceptance testing. When sufficient validation work has been undertaken and there is industry support then potentially it could be incorporated into a future update of RIS-1530-PLT. At this stage is just a proposal. Acceptance testing of rolling stock involves undertaking stopping distance tests to validate the brake system design.

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196	43	5.7.6.2	If stopping distance testing of the consist is required, then testing with unbraked trailing load adds no value. Fully laden is always worse case. G 5.7.6.11 states that the test is to ensure the trailer is not over-braked, but either the trailer must be over-braked when unladen, or it must be under-braked when laden, or it must be fitted with load compensating brakes (which no trailers are). Trailer mass generally increased from 3 tonnes unladen to 20 tonnes laden. There is no way for the trailer not to be over-braked when unladen without load compensation, which no trailers have and is not required by the standard.	If stopping distance testing of the consist is required, remove requirement to test with unladen trailers. Remove G 5.7.6.11, as it is unachievable.	3	NC			With the trailers in the unladen condition it is likely that the brake application needed to achieve the stopping distances will be lower than that needed for the fully laden condition. The check is that the unladen trailer wheels do not lock up and slide when these tests are undertaken.
197	43	5.7.6.2 d	We do not readily understand what the testing set out in points ii, iii & iv is intended to demonstrate. As the trailers are service braked they will lend braking effort to the “consist” under test so the test will not provide meaningful information on the braking performance of the towing vehicle. Furthermore each trailer is liable to have a unique braking performance and so the test results achieved cannot be reliably reproduced and will vary on the same day if tests are undertaken with trailers A, B & C and then immediately repeated with trailers X, Y & Z. Points ii, iii & iv are viewed as a legacy of when trailers were park brake only vehicles (thus relevant in such a context) but are now considered an anachronism.	Amend the requirement to only include tests for which the results can reliably be reproduced (or not) without any other variable confounding factors (i.e. the individuals braking performance of each service braked trailer used in the testing consist required by points ii, iii & iv)	14	NC			The testing methodology is unchanged from the previous issues of RIS-1530-PLT.
198	43	5.7.6.3	This test method is only applicable to host/towing vehicles: trailers cannot be tested in this manner	See comment against 5.7.6	14	NC			Clause 5.7.6.4 sets out the requirements for testing trailers
199	44	5.7.6.5	It is unclear what this test is seeking to demonstrate as (with some very limited exceptions) there is no standard Host machine / trailer combination rather a host machine is certified to work with any (compatible) trailer / trailer type. The brake tests results for each combination of trailer and r trailer type with each host vehicle are almost infinite.	Clearly state BOTH what reliably repeatable information this test is intended to demonstrate AND why the purpose for which information is required. If no such justification can be provided delete the requirement.	14	DC	43	5.7.6.5	Clause amended to clarify amended to clarify that this is checking the effectiveness of the breakaway feature. <i>‘The machine trailer combination shall be subject to type testing, comprising three separate tests of the effectiveness of the breakaway brake, to check that: ...’</i>
200	44	5.7.6.6 b)	This test does not allow any consideration for degradation of the brakes. 40% is the minimum threshold value	Remove clause and mandate testing of trailer brakes by either pull testing or torque testing	5	DC	43	5.7.6.6	Agreed: Subclause deleted and replaced by torque testing.

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201	44	5.7.6.6 b)	Test option b) is significantly less onerous than test option a). Test option a) uses the force derived in 5.7.5.5, which includes an allowance for degradation. Test option b) does not include any allowance for degradation.	Remove option b), or increase the gradient on which test option b) is carried out to provide a factor of safety comparable to the FoS derived in 5.7.5.5	3	DC	43	5.7.6.6	Agreed: Subclause deleted and replaced by torque testing.
202	44	5.7.6.8	This rationale states it is for breakaway brake, but where is the requirement for breakaway brake test?	Insert requirements for breakaway brake for machine/trailer combinations	10	DC	43	5.7.6.5	Clause 5.7.6.5 amended to clarify that this is checking the effectiveness of the breakaway feature: <i>The machine trailer combination shall be subject to type testing, comprising three separate tests of the effectiveness of the breakaway brake, to check that: ..."</i>
203	44	G 5.7.6.8	We cannot readily understand how "the machine trailer combination type test" (presumably that set out in 5.7.6.5) can possibly "demonstrate the effectiveness of the breakaway system" as there is no requirement or methodology by which the towed trailers are separated from the towing vehicle. The machines always remain in combination.	Review this stated Rationale against the requirement clause(s) to which it indirectly refers to establish what, if any, relevant information the requirements will provide.	14	NC			The requirement to demonstrate the breakaway functionality on the first of class has been in RIS-1530-PLT since April 2006 (issue 1).
204	44	G 5.7.6.8	This document should define the brake testing methodology used and not refer to other documents (other than Regulations). In practice M&EE COP0025 and RIS-1530-PLT become circular with COP0025 being "informed by" RIS-1530-PLT and RIS-1530-PLT being informed by COP0025	Robustly define the brake testing requirements/methodology within this document without reliance on any further "good practice" guidance.	14	NC			The testing requirements are set out in RIS-1530-PLT. The recommended means of undertaking the type tests is already covered in M&EE COP0025. The COP has been produced to reflect best industry practice for undertaking brake testing of OTP and is hosted on the RGS Online website so is ready accessible.
205	44	G 5.7.6.11	It is not readily apparent how the test set out in 5.7.6.2 checks that "the unladen trailer is not over braked but compliant with the permitted stopping distance"	Review the cross reference and/or the intention of 5.7.6.2 to ensure that it delivers what this Guidance clause appears define as its purpose.	14	DC	43	G 5.7.6.11	An over braked trailer will be susceptible to locking its wheels and generating flats. Extra guidance added: <i>The test set out in 5.7.2 will check that the unladen trailer is not over braked, and therefore susceptible to generating wheel flats, whilst demonstrating it is compliant with the permitted stopping distances.</i>
206	44	G 5.7.6.13	Is this not a requirement and not guidance	Make a requirement	9	DC	44	G 5.7.6.13	Clause amended to clarify the guidance: <i>If the option in 5.7.1.5 for two separate systems is used, it is good practice to demonstrate their operation by conducting independent functional tests of the two brake systems.</i>
207	44	G.5.7.6.13	If the machine has separate park and service brakes then it is essential to test both of them, not just "good practice"	Change to "to comply with the clause..."	3	DC	44	G 5.7.6.13	Clause amended to clarify the guidance: <i>If the option in 5.7.1.5 for two separate systems is used, it is good practice to demonstrate their operation by conducting independent functional tests of the two brake systems.</i>
208	44	G5.7.6.13	This requirement should be mandatory	Move clause to mandatory requirements section	5	DC	44	G 5.7.6.13	Clause amended to clarify the guidance: <i>If the option in 5.7.1.5 for two separate systems is used, it is good practice to demonstrate their operation by conducting independent functional tests of the two brake systems</i>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
209	44	G 5.7.6.15	Is this not a requirement and not guidance	Make a requirement	9	DC	44	G 5.7.6.16	Appendix F provides a tabular overview of what compliance verification is needed for the first of class and subsequent machines. As the compliance requirements are set out in Appendix F the first sentence ("These tests are mandatory for the first in class machine") has been deleted to avoid confusion.
210	44	G5.7.6.15	This requirement should be mandatory	Move clause to mandatory requirements section	5	DC	44	G 5.7.6.16	Appendix F provides a tabular overview of what compliance verification is needed for the first of class and subsequent machines. As the compliance requirements are set out in Appendix F the first sentence has been deleted to avoid confusion.
211	44	G 5.7.6.15	This states it is good practice to give indication of breakaway, but 5.20.2.6 mandates this, so it is a requirement not good practice !	Delete 5.7.6.15	10	DC	44	G 5.7.6.15	The guidance is about providing a failsafe indication. Text reordered: <i>It is good practice to ensure the indication given to the operator that the breakaway has occurred, as set out in 5.20.2.6, is provided by a failsafe means.</i>
212	44	G 5.7.6.15	To which Requirement clause(s) does tis Guidance relate? There is no readily apparent or clearly defined Requirement within 5.7.6 which addresses the testing of the trailer breakaway system. If the intention is to address the performance requirements of the trailer brakes in a breakaway scenario then this should be clearly documented in clauses which solely address this aspect of brake functionality. It should also be noted that the words "breakaway system" can easily be taken to mean the requirements for the breakaway alarm system (as the breakaway performance of the brakes is inherent and not a "system" in its own right).	Review document to clearly identify the Requirements for the testing of the trailer breakaway system. IT SHOULD BE NOTED that the Requirements for testing of the trailer breakaway alarm system are entirely separate to those for testing of the brake performance.	14	DC	44	G 5.7.6.16	Cross-reference to 5.7.6.5 added.
213	44	G5.7.6.16	It is good practice to consider testing combinations of loaded and unloaded trailers breaking away together. If the brakes do not apply on both trailers, testing demonstrates that the unloaded trailer is able to stop both itself and the loaded trailer	Not consistent with Clauses 5.7.4.4. The parking brakes through design should vent and be brought on together in the event of a break away. As written opens up for ambiguity	11	DC	44	N/A	This guidance had been carried over from previous issue. This clause has been deleted as the trailer brakes need apply in a breakaway situation as required by the amended clause 5.7.6.5.
214	44	G5.7.6.16	Is the clause specifying the test is to determine that an unladen trailer will stop a laden one in the consist? Requirements are unclear All trailer brakes must apply in a breakaway situation and apply brakes to all trailers in the consist.	Remove clause.	5	DC	44	N/A	This guidance had been carried over from previous issue. This clause has been deleted as the trailer brakes need apply in a breakaway situation as required by the amended clause 5.7.6.5.
215	45	5.8.1.2	The instruction handbook (as set out in 10.1.3.9) and the ECC (as shown in <i>Appendix H</i>) shall state whether there are: a) No movement limiting devices fitted; or	Guidance / Rationale to be added around 'low performance MLD's. Currently there is no	11	DC	45	G 5.8.1.11	Added new clause G 5.8.1.11 <i>A low performance movement limiting device is any such device that does not meet the requirements of 5.8.3.</i>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
			b) Movement limiting devices fitted that are low performance; or c) Movement limiting devices that are high performance (see 5.8.2.2)	guidance for justification of what a low performance MLD is.					
216	45	G 5.8.1.7	MLDs do not necessarily allow the machine to be used ALO. Whether or not a machine can be used ALO is site specific.	Update to "Movement Limiting Devices can be used as part of a Safe System of Work when working ALO"	3	DC	44	G 5.8.1.6	Changed to <i>Movement limiting devices can be used as part of a safe system of work when working with any line open to traffic or under overhead line equipment (OLE).</i>
217	45	G 5.8.1.7 and elsewhere in the standard	We don't use the term "Adjacent Line Open"	Change to "any line open"	9	DC	44	G 5.8.1.6	Changed as suggested (except in G 5.17.1.6)
218	46	5.8.2.3	We entirely agree and endorse the Requirement that the device "shall stop the movement when either a lateral or vertical limit is reached"	The Standard should clearly state that systems which in many situations stop the movement before the limit is reached are unacceptable (see comment against 5.8.2.5)	14	NC			The requirement is clear; how that is to be achieved is not specified in the document.
219	46	5.8.2.5	We entirely agree and endorse the Requirement that "Movement limiting devices shall be capable of resisting the foreseeable forces encountered as a result of their use; this includes proceeding beyond the selected limit point due to speed of approach"	Ensure that all systems MUST stop at the limit. Some systems which are currently in use and certified as High performance MLDs are tested in the worst case scenario (typically maximum load at maximum radius slewing down cant and down gradient) and then the distance by which the movement "proceeds beyond the selected limit" is "accommodated" within the system as a buffer so that the worst case scenario movement is stopped at the limit. However the effect of this approach is that the buffer is applied in all scenarios so movements in more favourable scenarios are stopped prematurely and the load cannot be moved to the intended limit. This approach renders those HP MLDs which employ it unusable.	14	NC			The requirement is clear; how that is to be achieved is not specified in the document. This perceived deficiency in the operational performance of the MLD systems needs to be taken up by the owners / operators of the machines with the OTP manufacturers and their suppliers of the MLD control systems. This should hopefully initiate a review of the control system, operating parameters and machine integration to permit the development of a control system that addresses the deficiencies identified. Subject to the necessary validation processes this improved control system and machine integration could then be marketed.
220	46	G 5.8.2.9	a) the Guidance should not reference 5.2.2.6 which addresses vertical movement and height limiting devices. Such systems are to address requirements for working under live OLE and not ALO. b) 5.2.2.5 requires that "Machines for use with an any line open to traffic shall be fitted with lateral movement limiting devices, as set out in 5.8" therefore the statement in G 5.8.2.9 that "The design might also need to meet the requirements set out in 5.8.3, 5.8.4 and 5.8.5, as appropriate." is incorrect and dangerously misleading	a) Delete erroneous reference to 5.2.2.6 b) rewrite the guidance to ensure that it is absolutely that when working ALO the MLD MUST meet the requirements of 5.8	14	DC	45	G 5.8.2.10	a) Reference to 5.2.2.6 removed. b) Reworded to "Additional requirements are set out in 5.8.3, 5.8.4 and 5.8.5.
221	46	G 5.8.2.10	Is this not a requirement and not guidance	Make a requirement	9	NC			This guidance is just a cross reference to other clauses that set out the requirements.

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222	47	5.8.3.2	Hyperlinks throughout the document take you around a loop in the clauses	Combine 5.8.3.2 with 5.8.3.1 as an example rather than hyperlink one entry that follows another	9	DC	46	5.8.3.2	Clauses kept separate as they contain separate requirements. The link is in the word 'system'. Hyperlink is removed and sentence amended to read: <i>Electronically controlled and combinations of mechanical and electrical or electronic movement limiting devices shall comply as a system.</i>
223	47	5.8.3.4	This clause was changed from MLD/R003 when it was moved into RIS-1530-PLT issue 6. However, it is not how the GKD system works (by far the most common high performance MLD) and it is also impractical in achieving the goal of not breaching a limit as it takes no account of where the virtual wall is positioned: When the virtual wall is close to the machine gauge then the 1m/s slow down should occur before the gauge limit, and when the virtual wall is a long way from the gauge limit it should be acceptable to slow down after the gauge limit.	Revert to MLD/R003 requirement of slowing down to 1m/s at 10 degrees slew from the limit.	3	DC	46	5.8.3.4	As suggested the text amended to include the 10 degrees slew when the limit is close to the gauge line, with the requirement beyond the gauge line retained from issue 6. The linear speed of a moving structure shall be limited to not exceed 1 m/s when: a) 10 degrees slew from the limit is reached; and b) Any part of the moving structure moves beyond the stated machine gauge towards the limit.
224	47	5.8.3.5	It is not possible for “any” failure to cause the system to revert to the lower speed: dangerous failure modes always exist, even if the “normal” or “common” failure mode is the slower speed.	Replace clause with guidance that the PL given in table 3 also applies to the slow down function.	3	NC			This requirement is unchanged from issue 6.
225	47	G 5.8.3.11	Is this not a requirement and not guidance	Make a requirement	9	NC			This is RSSB standards policy (as agreed and endorsed by Standards Committees) wording for 'recommendations': see Definition of 'good practice'. The wording in Issue 6, clause G 5.8.3.1.1 was “the subsystem supplier should be included in the validation.”
226	48	G5.8.3.13	It is not clear what the relationship between dig mode and the MLD function is. Whether or not the machine movement needs positional limiting is a separate issue as to whether or not it is lifting.	Change to “for example when the machine is not working with Any Line Open to traffic”	3	DC	47	G 5.8.3.14	The example in the clause changed as suggested: <i>It is permissible for the movement speed to be derestricted when the high-performance movement limiting device is not in use, for example when the machine is not working with Any Line Open to traffic.</i>
227	48	5.8.3.13	Consider different speeds.	Higher speed when “DIG” mode selected – what about digging ALO? Plus, this will drive even more temptation to select “DIG mode” on time constrained works. Remove new clause, as could be misleading that “DIG” Mode equals a “Go faster / finish early mode” and will lead to further incidents	8	DC	47	G 5.8.3.14	Example changed to <i>..when the machine is not working with Any Line Open to traffic.</i>
228	48	G 5.8.3.13	We agree and endorse that “It is permissible for the movement speed to be derestricted when the high performance movement limiting device is not in use” however this requirement is not a product of whether the machine is in lifting mode or in dig mode: HP	Rewrite to clearly state that the HP MLD must be switched on and fully operational in all scenarios where use of a HP MLD is required but that it can be derestricted for use in scenarios where a where a LP MLD is sufficient.	14	DC	47	G 5.8.3.14	Text amended and reference to dig mode deleted: <i>'It is permissible for the movement speed to be derestricted when the high-performance movement limiting device is not in use, for example when the machine is not working with Any Line Open to traffic.'</i> G 5.8.3.13 and G 5.8.3.14 have also been swapped over.

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			MLDs are still required in dig mode as the machine still has the potential to foul both vertically and laterally						
229	48	G 5.8.3.15	We query a) what “equivalent to 10 ⁷ cycles” means and b) whether this equates to the Performance Level d (PLd) requirement for electronic/electrical movement limiters	a) Clarify whether this means >10 ⁶ or ≤10 ⁷ b) Demonstrate that equivalent to 10 ⁷ cycles equates to PLd required for electronic / electrical limiters	14	NC			There is no means to show that 10 ⁷ mechanical cycles is equivalent to an electronic performance level. The issue here is that normal structural materials will have fatigue life before mechanical failure of the component. The guidance is suggesting that mechanical movement limiting devices should be able to withstand 10 ⁷ mechanical impacts.
230	48	5.8.4.1	We query this approach and question how it is consistent with clause 5.8.2.5 (q.v.) Demonstration that a system will “prevent encroachment beyond the stop limit by using the maximum permitted load on the most adverse cant and gradient” is NOT the same as “...resisting ... proceeding beyond the selected limit point ...” What happens when it is demonstrated the limit can’t be reached in more favourable circumstances due to system design	Ensure that all systems MUST stop at the limit. Some systems which are currently in use and certified as High performance MLDs are tested in the worst case scenario (typically maximum load at maximum radius slewing down cant and down gradient) and then the distance by which the movement “proceeds beyond the selected limit” is “accommodated” within the system as a buffer so that the worst case scenario movement is stopped at the limit. However the effect of this approach is that the buffer is applied in all scenarios so movements in more favourable scenarios are stopped prematurely and the load cannot be moved to the intended limit. This approach renders those HP MLDs which employ it unusable.	14	NC			The requirement is clear; how that is to be achieved is not specified in the document. This perceived deficiency in the operational performance of the MLD systems needs to be taken up by the owners / operators of the machines with the OTP manufacturers and their suppliers of the MLD control systems. This should hopefully initiate a review of the control system, operating parameters and machine integration to permit the development of a control system that addresses the deficiencies identified. Subject to the necessary validation processes this improved control system and machine integration could then be marketed.
231	48	5.8.6	Lateral limiting devices are the same as Movement limiting devices. The section is duplication	Remove section.	5	NC			This gives requirements specific to Lateral Limiting Device and is unchanged from issue 6.
232	49	5.8.6.3	This Requirement has been previously set out 5.8.3.7 (although the wording is different) and so is superfluous here (or else superfluous at 5.8.3.7)	Delete either 5.8.6.3 or 5.8.3.7 or if both clauses are retained ensure that they use common wording.	14	DC	48	N/A	Agreed this duplication. Clause 5.8.6.3 is deleted.
233	48	G5.8.6.7	The assessment of mechanical movement limiting devices relies on a number of assumptions that need to be made about the design. Calculation of inertial load for slew stops needs to account for the deceleration of the machine and load; the industry norm for deceleration time from contact to complete stop is 0.2 s.	It was in RIS-1530-PLT Issue 6 but, deceleration time on a mechanical stop has an industry norm ?	11	NC			The guidance is providing information about factors to consider, and the value is given as an example. The designer will need to select the appropriate parameters depending on the type of machine and control system used.
234	49	5.8.6.2 a)	Point a) is impossible to achieve.	See comment number 28.	3	NC			Not changed from issue 6 clause 5.8.6.1: “ Any non-mechanical lateral movement limiting device provided on the machine shall be failsafe under all operating conditions or be part of a system with an overall sufficient performance level, as set out in Table 3.”
235	49	5.8.6.4	Clause 5.8.1.3 permits a key switch or alternative. Clause 5.8.6.4 specifies it must be a key.	Permit equivalent to a key switch as per 5.8.3.1	5	NC			This is specific to Lateral Limiting Devices, and is unchanged from issue 6.

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			Contradiction in requirements						
236	49	5.8.7.2	Almost every excavator is above 3500 mm in its “normal” travel mode configuration. Lower heights can be achieved using specific boom movements, which are required under live OLE, but these are not the normal way of working. This means that almost every time an excavator with a High Performance MLD is turned on, the first thing the operator has to do is turn the high performance MLD off. Ergonomically, this is not good practice. There is no requirement for virtual walls to be On and set to a specific distance when the machine is turned on, so it is not clear why height limiters should need to be.	Change clause to: “Where an electrical height limiting device is provided for use under live OLE: <ul style="list-style-type: none">- The height shall default to 3500mm when the machine is turned on- The On or Off status shall retain the status from when the machine was shut down- The ON or Off status shall be indicated to the operator	3	NC			GLRT1210 issue 3 Table 1 sets out the normal minimum contact height for OLE as 4165mm arl. The default height of 3500mm arl thus permits items of plant to safely operate below live OLE whilst maintaining the normal 600mm electrical clearances. The minimum contact wire is permitted to be as low as 4040 mm but this requires an assessment for work force safety as covered by the guidance in GLRT1210 Issue 3, G3.1.1.12. The guidance in RIS-1530-PLT G 5.18.3.11 also references the need for a risk assessment when planning activities under live OLE that is below 4165mm arl.
237	50	G5.8.7.5	The guidance says it is “good practice” to indicate the height limit. Clause 5.8.7.1 says it is mandatory.	Remove G 5.8.7.5	3	DC	49	G 5.8.7.5	Whilst mandatory at the operators position it is only a recommendation at the location where the height is limited. Guidance reworded: <i>Where the height limit is variable, it is good practice to also display the actual figure at the location where this limit is set if this is remote from the operator.</i>
238	50	G5.8.7.7	It is good practice to test the height limiting device at the maximum operating speed to ensure it does not exceed the set limit.	Previous clauses of this document and MLD remits (albeit 2012) stated worst case dynamic. Therefore the testing in this manner is a requirement not a best practice.	11	NC			This is guidance on how to test for compliance. Maximum speed is only relevant if the speed of movement is not automatically reduced as the machine approaches the limit value.
239	50	G 5.8.7.8	Is this not a requirement and not guidance	Make a requirement	9	DC	46	5.8.3.3	The requirement is that height limit is not exceeded how this is achieved is left to the designer. The wording in 5.8.3.3 has been amended to make 2 m/s applicable to all movements.
240	50	5.9	This clause has two separate functions and could be separated for clarity.	5.9 Driving position (include requirements from current 5.9.1 5.9.2 and 5.9.5) 5.10 Personnel safety (include requirements from 5.9.3 and 5.9.4)	10	NC			The section numbers in Issue 7 have been carried over from Issue 6 to aid the reader make comparisons with issue 6. The draft 1k has now split 5.9.1.1 into two clauses but the subsequent cross references on page 52 have not been adjusted
241	50	5.9.1.1	The CCTV specification provided in Appendix N has not been widely adopted due to cost and the limited availability of compliant off-the-shelf products. To increase the use of CCTV, NR have routinely been providing derogations against the CCTV spec.	Ensure CCTV spec is consistent with NR’s requirements. We should not be in a position where derogations are routinely needed immediately after a new standard has come out.	3	NC			Appendix N is in line with latest requirement in prEN 15955, which recognised camera systems fitted to earth moving machinery are covered by ISO 16001, which was updated in 2017.
242	50	5.9.1.1	is there minimum view of the environment? e.g. vertical horizontal dimensions or the infrastructure that must not be obscured from driving position	Minimum unobstructed view from driving position should be 90 degree vertical and 120 degree horizontal with vertex at eye level of operator.	9	DC	49 50	5.9.1.1 G 5.9.1.11	5.9.1.1 Text revised <i>When travelling in the forward direction, the track shall be visible from the driving position by direct line of sight for a distance equal to or greater than the braking distance at maximum speed on dry, flat, level track</i> G 5.9.1.11 changed to

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
									<i>It is good practice to provide the operator with a field of view of 90 degrees vertically and 120 degrees horizontally at the eye level of the operator</i>
243	50	5.9.1.1	The track in the forward direction shall be visible from the driving position by direct line of sight when travelling. If such visibility is not achievable in the reverse direction because of the physical design of the machine, then: a) Space shall be provided for an assistant (provided with separate controls at that position to stop the movement of the machine, as set out in 5.7.2 or 5.7.3, as appropriate, and sound a warning, as set out in 5.15.2), where there is sufficient visibility, by direct line of sight, to be able to stop clear of any track obstruction or stop signal;	Guidance for 'as appropriate' recommended. Industry may well go down the 'not appropriate route' when personnel carried outside the machine have provision of a brake and horn regardless. Or Replace as appropriate with 'Provision or access to host controls'	11	DC	49	5.9.1.2	The 'as appropriate' was intended to relate to whether 5.7.2 or 5.7.3 applies. To avoid any misinterpretation, 'as appropriate' has been deleted.
244	50	5.9.1.1 a & b	The standard references stop signals but OTP is possession only equipment and not required to interact with signals. Furthermore OTP operators are trained to ignore signals	Remove reference to Stop signals, coloured lights etc.	14	NC			The stop signal is not necessarily a lineside signal post, it could be a flag shown by a lookout, be possession limit boards, till down lights on points not set for the movement, anything to indicate the limit of the move.
245	50	5.9.1.1 & b	i) Reference is made to white, red, yellow and green lights but only red and white lights are relevant as OTP is possession only equipment and not required to interact with signals. Furthermore OTP operators are trained to ignore signals. ii) No requirement has been included to consider the effects of towed/propelled trailers and associated loads on the field of vision and hence the effectiveness of the CCTV.	i) Remove reference to yellow and green lights as these are associated with signals and therefore are not relevant to OTP operations. ii) Include a Requirement to consider the impact of towed/propelled loads on the CCTV system when used as an operational control.	14	NC			The ability to distinguishing between the different is colours is a means of assessing the capability to provide a true rendition of the scene and there is no colour distortion. Propelling a loaded trailer could obscure the CCTV field of view so that the requirements in c) cannot be achieved and thus CCTV cannot be used for that movement. This should be identified at the planning phase and suitable measures put in place. Such as relocating the trailer so that it is being towed or providing an additional trailer with seating for an assistant so that option a) can be implemented.
246	50	5.9.1.1 (b)	The camera and screen shall provide a true rendition of the scene and be capable of distinguishing between white, red, yellow and green lights in all lighting conditions.	are the lights on machine and worksite lighting specified to achieve luminosity of 0.5 lx or greater?	9	NC			This requirement is about the colour rendition on the display and not changed from Issue 6
247	51	5.9.1.3	How is it envisaged that speed restriction will be achieved on machines with rotating superstructures? Has the requirement been analysed to determine if it is ALARP in all cases? We believe that it is only feasible will work for highway type vehicles which have fixed ends	Consider the reasonable practicability of this requirement for all machine types and then restructure the requirement accordingly.	14	NC			In travelling mode, the machine must know which way the superstructure is orientated relative to the under carriage to enable it to go forward (in the direction the cab is facing). Thus, it must know what direction is reverse and as such it should possible to incorporate engineering measures that limit the speed of the machine whenever the reverse direction is selected.
248	50	G 5.9.1.7	The maximum travelling speed may need to be reduced as a result of using any of the three options; it is likely that the maximum speed for and for c) would be 5 km/h (3 mph). These are suggested speeds, as each system would need to be assessed on its own merits. It is good practice to limit these reversing speeds by engineering means.	Highlighting an example of a suitable type of engineering control could be helpful guide	9	DC	50	5.9.1.4 G 5.9.1.8	Speed limit of 3 mph (5 km/h) added to 5.9.1.4This standard covers too many types of machines drives and speed control systems. G 5.9.1.7 (now G 5.9.1.8) revised ..For example, it is likely that the maximum speed when using CCTV would be 10 mph (16 km/h); this is a suggested speed, as each control system would need to be assessed on its own merits.

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249	51	G 5.9.1.8	a) Why is this required given that there is a requirement for the Machine Controller to be on the ground when working with a MEWP. b) This is not reasonably practicable	a) delete the guidance clause b) delete the guidance clause	14	NC			This section is about travelling mode. The use of an MC on the ground would only be suitable for short moves in reverse. Travelling longer distance will require other engineering solutions as suggested in this clause.
250	51	G 5.9.1.9	This guidance is not viewed as being well considered as it is not practicable if the vehicle is towing or propelling	Delete the guidance clause	14	NC			The preferred method of movement is with the operating having a direct line of sight so a turntable can achieve this if the machine does not have a rotating superstructure. Propelling a loaded trailer could obscure the CCTV field of view so that the requirements in b) i) cannot be achieved and thus CCTV cannot be used for that movement. This should be identified at the planning phase and suitable measures put in place. Such as relocating the trailer so that it is being towed or providing an additional trailer with seating for an assistant so that option a) can be implemented.
251	51	G5.9.1.10	It is good practice to ensure that the minimum direct line of sight distance is the braking distance at maximum speed on dry flat level track.	Contradicts G N.1.5	11	DC	49	5.9.1.1	This clause relates to direct line of sight by the machine operator, whereas Appendix N is for CCTV. Text moved to 5.9.1.1 When travelling in the forward direction, the track shall be visible from the driving position by direct line of sight for a distance equal to or greater than the braking distance at maximum speed on dry, flat, level track
252	51	G 5.9.1.11	a) This clause needs to consider that a “propelling” movement becomes a “towing” movement when the machine switches between forward and reverse travel direction and then it should be made a mandatory requirement b) The reference to personnel carrying trailers is not well considered as clause 5.9.3.13 requires an e-stop to be accessible to the personnel which would appear to meet the requirements of 5.9.1.1.a	a) Rewrite clause in line with the comment and then make it a mandatory Requirement. b) If an example is considered necessary one other than personnel carrying trailers.	14	NC			The requirements in order of preference are set out in 5.9.1.2 Propelling a loaded trailer could obscure the CCTV field of view so that the requirements in b) i) cannot be achieved and thus CCTV cannot be used for that movement. This should be identified at the planning phase and suitable measures put in place. Such as relocating the trailer so that it is being towed or providing an additional trailer with seating for an assistant so that option a) can be implemented.
253	51	G 5.9.1.14	The requirement for CCTV on RRV excavators is to allow the RRV to be moved safely in a reverse direction where the machine is prohibited from slewing the superstructure around, in order to provide clear unobstructed lines of sight in the direction of travel, and to check visibility along a potential blind side.	If CCTV is for reverse, can machines be designed to enable CCTV only when in reverse mode to avoid distraction or over reliance when in other modes?	9	DC	50	G 5.9.1.13	Guidance added to end of G 5.9.1.13: <i>To reduce possible distraction the CCTV display is turned off when not the machine is reversing.</i>
254	51	G 5.9.1.15	It is good practice to consider the fitment of CCTV to other machines where the driving cab could be rotated away from the direction of travel, or where other moveable parts could potentially obstruct vision along the track in the direction of travel.	This guidance encourages CCTV fitment even when not needed for reversing and therefore erodes clause G 5.9.1.13	9	NC			The guidance in G 5.9.1.6 states the preference is provision of direct line of sight for the operator or an assistant before the use of a CCTV when travelling in reverse.
255	52	G 5.9.1.17	This is considered to be an insufficient description of and requirement for obstacle detection systems especially when presented as Guidance.	Obstacle detection needs more reference within the body of the standard other than a single guidance note especially as it forms a 4 page appendix. A performance Level	14	NC			We are aware that Network Rail has been conducting assessment trials of obstacle detection systems (ODS). Should this lead to the preparation of detailed Network Rail requirements these could be incorporated in a future revision of the RIS.

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				requirement (PLr) should also be determined and sated within PL requirements stated within Table 3					In the meantime, the Appendix in the RIS is an extract of the ODS information set out in prEN 15955-2:2022. Reference changed to Appendix P.
256	52	5.9.2	Maybe allowance for OEM cameras fitted to the machines should be considered. As these have already been installed to the ENs	GOS will try to find the standards these are fitted to and come back to the drafting committee if not en iso16001	4	NC			Appendix N is in line with latest requirement in prEN 15955, and referenced ISO 16001 for camera systems fitted to earth moving machinery updated in 2017.
257	52	5.9.2.1 a, b & c	The standard references stop signals but OTP is possession only equipment and not required to interact with signals. Furthermore OTP operators are trained to ignore signals	Remove reference to Stop signals, coloured lights etc.	14	NC			The stop signal is not necessarily a lineside signal post, it could be a flag shown by a lookout, be possession limit boards, till dawn lights on points not set for the movement, anything to indicate the limit of the move.
258	51	5.9.2.1 (b)	Space shall be provided for an assistant (provided with separate controls at that position to stop the movement of the machine, as set out in appropriate, and sound a warning, as set out in visibility in the direction of movement, by direct line of sight, to be able to stop clear of any track obstruction or stop signal when moving along the track at maximum working mode speed.	Considering machine is in working mode, will this space be safe if it provided on machine? or on the ground which is covered by Clause (d) - Ground staff shall control movement along the track in conjunction with the operator.	9	NC			The space for the assistant is on the machine. It will not be relevant for all machines but could be applicable to some designs such as the rail grinders or lorries with MEWPs.
259	52	5.9.2.1 c)	CCTV (meeting the requirements of <i>Appendix N</i>) shall be provided at the operating position with field of view both in the immediate vicinity of the rear of the machine and into the distance along the track sufficient to be able to stop clear of any track obstruction or stop signal when moving along the track at maximum working mode speed. The camera and screen shall provide a true rendition of the scene and be capable of distinguishing between white, red and green lights in all lighting conditions	G5.9.1.13 contradicts this clause. I.e. fitment of a wide angle and 'CAUTION: objects on the screen are closer than they appear'. Is not a true rendition.	11	NC			There is no contradiction; a wide-angle lens can still provide a clear view of the scene. The note is to warn the user that objects are closer than they appear. This note is also seen on the external mirrors of cars.
260	52	5.9.2.1 c	i) Reference is made to white, red, yellow and green lights but only red and white lights are relevant as OTP is possession only equipment and not required to interact with signals. Furthermore OTP operators are trained to ignore signals. ii) No requirement has been included to consider the effects of towed/propelled trailers and associated loads on the field of vision and hence the effectiveness of the CCTV.	i) Remove reference to yellow and green lights as these are associated with signals and therefore are not relevant to OTP operations. ii) Include a Requirement to consider the impact of towed/propelled loads on the CCTV system when used as an operational control.	14	NC			The ability to distinguishing between the different is colours is a means of assessing the capability to provide a true rendition of the scene and there is no colour distortion. Propelling a loaded trailer could obscure the CCTV field of view so that the requirements in c) cannot be achieved and thus CCTV cannot be used for that movement. This should be identified at the planning phase and suitable measures put in place. Such as relocating the trailer so that it is being towed or providing an additional trailer with seating for an assistant so that option b) can be implemented.
261	53	5.9.3.7	"EN relevant to the host machine" is ambiguous terminology.	Update to "Type 3 Designated Standard applicable to the host machine"	3	DC	52	5.9.3.7	Text amended: <i>Except where requirements are contained within this standard, accommodation shall comply with the Designated Standard against the Machinery Regulations applicable to the host machine.</i>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
262	53	5.9.3.10	Where fitted, the seat for the operator shall be designed to minimise vibration to which the operator is subjected.	Reference / link to be provided to 5.28	11	DC	53	G 5.9.3.21	Link to 5.28 added to G 5.9.3.21
263	53	5.9.3.11	“Ergonomically designed” is highly subjective and provides no actual requirements to comply with. Ergonomics is a theme, not a target set of requirements	Provide objective and measurable requirements, or remove clause	3	DC	52	5.9.3.11	Merged with 5.9.3.12 and the dated reference deleted. “To achieve an ergonomic seating position there shall, as a minimum, either be: ...”
264	54	5.9.3.15	The accelerations that the machine are subject to are specified elsewhere in the standard. This should be used here to ensure consistency. Any seatbelt fitted as part of a road homologated vehicle or machine complying with a Machinery Regulations designated standard should be sufficient for compliance with the clause.	Update to: “Seat belts and their fixings shall either: - Be fitted by a host machine OEM and included in the scope of their declaration of conformity with the Machinery Regulations - Be part of a Road Homologated vehicle Withstand the 2g longitudinal acceleration of a 95 th percentile male	3	DC	53	5.9.3.14 G 5.9.3.22	Text amended. Added to 5.9.3.14 (renumbered): “... to which they are fitted and withstand the 2g longitudinal acceleration of a 95 th percentile male.” New guidance added: The seat belts and fixing are considered to comply with 5.9.3.15 when: - They have been fitted as part of the host machine and included within the declaration of conformity with the Machinery Regulations; or - They are part of road homologated vehicle
265	54	G 5.9.3.20	It is not clear why this guidance is included. It provides no additional requirements, and refers to a standard that does not apply in the UK	Remove	3	NC			BS EN 15746-1:2020 may not have been legally designated, but it still contains the latest requirements for these machines. Previously BS EN 15746-1:2010 required the provision of two seats on machines operating above 10 km/h.
266	55	5.9.4.3 c	The intent of the clause is correct but reference to Use of Plant Safety Plan (UPSP) is LU specific is not suitable to NRMI etc.	Reword the Requirement to remove reference to UPSP and hence make it applicable to all infrastructures.	14	NC			Whilst the Plant Safety Plan originated on LUL, the content of the document is applicable to other infrastructures
267	55	5.10	Setting up and packing away	it is a bit unclear why packing or not parking?	9	NC			This terminology is unchanged from Issue 6
268	56	5.10.1 c)	We agree the intention but question the wording especially as consideration to position of controls should be included at the planning stage and it the WWP etc.	Reword clause to reference “where possible positioning vehicle so that the controls are to the non-live side of the machine (ideally a cess or line closed to all movements including OTP, OTM & Eng trains)”	14	DC	55	5.10.1 c) G 5.10.5	Text amended: c) <i>Outside the machine from only one side, with the controls positioned on the non-live side of the machine, and the process documented in the instruction handbook and restriction shown on the ECC.</i> New guidance added G 5.10.5 <i>The non-live side of the machine could be in the cess or on a line closed to all movements.</i>
269	56	5.11	Clause 5.11 is a collection of completely different requirements so that the guidance is too remote from the requirement (eg 5.11.19 what notice does it refer to?)	Either: 1 Put rationale and guidance below each requirement clause Or if this is not possible due to the RSSB style Stasi then: Split 5.11 into different sections 5.11, 5.12 etc to suit the different requirements	10	DC	56	5.11.1	The section numbers in Issue 7 have been carried over from Issue 6 to aid the reader make comparisons with issue 6. 5.11.1 amended <i>A notice shall be provided at driving position(s) used in rail configuration stating ‘This machine is not permitted outside a possession’.</i> G 5.11.19 deleted
270	55	5.11.1	A notice shall be provided at the driving position(s) stating 'This machine is not permitted outside a possession'.	Notice should make clearer when it is in force i.e. 'This machine is not permitted outside a possession when working'.	9	DC	56	5.11.1	It also applies when travelling. 5.11.1 amended: <i>A notice shall be provided at driving position(s) used in rail configuration stating ‘This machine is not permitted outside a possession’.</i>
271	56	5.11.3	Where an emergency stop button is fitted to a machine, the operation of the button shall:	There is no guidance to BS EN 13850 within these clauses. Still only called up in Table 3.	11	DC	57	Table 3	Performance level c added to table 3 for emergency stop. The purpose of the emergency stop function is covered by the points in this clause.

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				Table 3 also doesn't have a PL'c' requirement for E-Stops despite referencing BS EN 13850 which subsequently states a minimum of PL'c' as per clause 4.1.5.1 Determination of the Performance Level (PL) or SIL required should take into account the purpose of the emergency stop function, but the minimum required is PLr c or SIL 1.					
272	57 and 58	5.11.6 a) and table 3	Table 3 allows machines constructed prior to 2016 to be fitted with a PLc RCI. The only machines still fitted with PLc RCIs are fitted with version 8 GKD systems, which are no longer supported by GKD and therefore provide decreasing reliability (see NIR 3907). Retaining existing version 8 GKD systems for machine built prior to 2016 is therefore not advisable as it encourages people to retain an RCI system that is not supported by the OEM. However in addition to this, the clause allows machines built prior to 2016 to be fitted with new PLc RCI systems. This will potentially lead to a two tier RCI market, with machines built prior to 2016 being fitted with PLc systems, and later machines being fitted with PLd systems. This is unfair on owners with newer machines. It will also lead to confusion in the industry as to what RCI system is needed and how it should be configured (some PLd systems can be purchased and configured in a cheaper PLc configuration).	Change "RCI for machine constructed after 2016" to "RCI". Remove all subsequent lines in table 3.	3	DC	57	Table 3	Table 3 amended as suggested. Line 9.7 deleted 'for machines constructed after January 2016' Deleted lines 9.7.1.5, 9.7.2.7, 9.7.4.1, 9.7.4.2, 9.7.4.3, 9.7.4.4
273	57	5.11.6 b)	It is not clear why the EN 61508 series of standards is being used to review compliance with EN 13849-1. EN 61508 relates only to electronic systems, whereas EN 13849-1 relates also to hydraulic and pneumatic control systems. How would EN 61508 be used to review against a hydraulic system? EN 13849-2 is the correct standard for validating EN 13849-1.	Change clause to mandate using EN 13849-2, not EN 61508.	3	DC	56	5.11.6 b)	Clause amended to reference EN 13849-2:2012: <i>BS EN ISO 13849-2:2012 shall be used in the review of the requirements against BS EN ISO 13849-1:2015.</i>
274	57	5.11.7	All software and software systems shall be validated and documented. The software validation shall include checks that all foreseeable sequences of operations have been included and validated as set out in BS EN ISO13849-1:2015 clause 4.6 and BS EN 61508-3:2010	This clause is different to the requirements of EN15746 and also more onerous than the requirements for OTM called up in EN14033 Why is it more onerous on possession only speed limited machines	13	DC	56	5.11.7	Text amended to make it consistent with BS EN 15746-2:2020 and prEN 15595-2, for safety related software. <i>Safety-relevant software and software systems shall be validated and documented ...</i>
275	57	5.11.8	It is not clear why PLd systems require EN 61508 SIL 2 software. G5.11.17 says that the requirements are consistent with EN 15746-	Update RIS-1530-PLT to be consistent with EN 15746-2:2020:	3	DC	56	5.11.7	Requirement is in revised 5.11.7. Clause 5.11.8 deleted.

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			2:2020, however they are not. SIL 2 compliance is not a requirement within EN 15746-2:2010+A1:2011 or EN 15747-2:2020 or BS EN ISO 13849, or EN 14033-3 or RIS-1702-PLT. BS EN ISO 13849 provides software requirements within section 4.6. Clause 4.6.2 of EN 13849-1 requires that Ple systems have SIL 3 software in accordance with EN 61508, but no part of EN 13849 mandates full EN 61508 compliance for software on systems below Ple. EN 61508 is not a Designated Standard. EN 13849-1 is a Designated Standard.	“Safety-relevant software and software systems shall be validated and documented. The software validation shall include checks that all foreseeable sequences of operations have been included and validated according to EN ISO 13849-1:2015, 4.6 and EN 61508-3.” Add guidance that, as part of demonstrating compliance with EN 13849-1, the software must comply with clause 4.6 of EN 13849-1.					
276	57	5.11.8	Requirement for PLd software to meet requirements of SIL iac 61508 is more onerous than for OTM as per En14033-3:2017 clause 5.15.2. This is as per previous correspondence on the topic between myself and prior colleagues with RSSB and NR.	Align requirements to those of 13849 and 14033-7	5	DC	56	5.11.7	Requirement is in revised 5.11.7. Clause 5.11.8 deleted.
277	57	5.11.9	The required performance levels for some of the safety systems are impractical to reach. This is based on an understanding of BS EN 13849-1. Examples of this include: <ul style="list-style-type: none"> Horns Displays The issue arises from horn and display manufactures not providing safety data e.g MTTFa, B10d values for components. And providing sufficient diagnostic coverage for the system to meet the requirements of the architecture category. An example of this is with horns, which require PL c. To meet this requirement, we would need the relevant safety data for the horn (category dependent). Please feel free to contact us for more details if required.	Review the performance levels detailed in Table 3 and lower requirement where it is impractical to meet them. We would be more than willing to discuss this with you to help explain our position.	12	NC			RIS-1530-PLT performance levels align with BS EN 15746-2 and prEN 15955-2
278	58	Table 3 9.7	I understood from conversations with RSSB and NR that under 1530 issue 7, the permission to keep old RCIs was being removed	Remove entry in table 3	5	DC	57	Table 3	Line 9.7 amended to delete ‘for machines constructed after January 2016’
279	59	5.11.13	Duplex comms kits can work with either 12V or 24V. The voltage of the auxiliary socket is not critical, and many machines are supplied with 24v only.	Updated to: “Each operating position shall be equipped with an auxiliary power supply socket in accordance with BS EN ISO 4165:2003, available for use by the communication radio.”	3	DC	58	5.11.12	Text amended as suggested (now clause 5.11.12): Each operating position shall be equipped with an auxiliary power supply socket in accordance with BS EN ISO 4165:2003, available for use by the communication radio.

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280	59 and 61	5.11.16 and 5.11.37	We do not consider this a wise change from issue 6 given the potential for harm. The requirement for tools limits (although marginally) scope for untrained personnel to access areas where they may come to harm or cause damage. We do not feel moving this from a requirement to guidance would improve safety.	<p>We suggest that EN280 clause 5.3.1.12 should be used as a guide for re-writing in this section. This would provide a good balance between safety and practicality.</p> <p><i>5.3.1.12 Guards shall be provided to prevent persons at control positions, or standing adjacent to the MEWP at ground level or at other points of access from touching hot parts or dangerous parts of drive systems. Opening or removal of these guards shall only be possible by devices located in fully enclosed and lockable enclosures (e.g. cabs, compartments) or by the use of tools or keys provided with the MEWP. When it is foreseen (e.g. routine maintenance) that the fixed guards will be removed regularly then the fastenings shall remain attached to the guards or to the machine. This requirement does not apply to the exhaust systems of vehicles conforming to road traffic regulations unless they are located near the control or access position. Verification – by visual examination.</i></p>	12	DC	58	5.11.15	Guidance merged with 5.11.16 (now 5.11.15) and amended: <i>Guards provided to prevent persons accessing hazardous parts of the machine shall be designed so their removal requires the use of a tool.</i> G 5.11.37 deleted.
281	59	G 5.11.22	Emergency stop buttons (normally red mushroom headed switches) are fitted to MEWPs and on the outside of certain other machines. Where they are fitted, it is good practice to test the operation of the button to check that the brakes are applied in all machine configurations, including during on and off tracking. It is acceptable for systems other than the brakes, for example a gearbox, to bring the machine to a stop.	Remote controlled estop might be effective when onboard estop might not be accessible in some emergencies.	9	NC			The use of remote controls is covered by 5.26.
282	60	G5.11.24	It is good practice to locate the emergency stop button no higher than 1.5 m above rail level where practicable; this will help to ensure it can be reached in adverse combinations of rail height and ballast shoulder slopes	Why is the requirement 0.5m to 2.0m in clause 5.11.4. surely this should be updated if it is best practise and take better consideration of the rail environment and anthropometric data.	11	NC			The height tolerance gives freedom to site the e-stop in a practicable location on the machine. The guidance provides more information on selecting a suitable location.
283	60	G 5.11.26	Demonstrating a performance level is not possible using only the methods described in the guidance note.	Remove or significantly update the guidance. Suggest removal, as proving guidance on how to undertake a performance level analysis would be a long guidance note.	3	NC			<p>This guidance is unchanged from issue 6.</p> <p>When BS EN 15595 is published next year there will be the opportunity rationalise the document so RIS-1530-PLT can become the GB application of the 15746 and 15955 series.</p> <p>The guidance can then be reviewed and retained where it is necessary to complement the requirements in the BS ENs.</p>

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284	60	G 5.11.27	It is not clear why the EN 61508 series is needed. EN 13849 is a Designated Standard, EN 61508 is not. Where it is necessary or advisable to use EN 61508 then EN 13849 already states this. The guidance confuses the requirement of the clause by mandating two different standards.	Remove guidance	3	NC			This is clause provides background information on the two referenced standards and their general application. Mandatory requirements are not set out in guidance.
285	61	G 5.11.28	“It is good practice to ensure that common cause failure modes are included in the assessment. Also to consider foreseeable mis-use by the operators with the intention to over-ride control and limit switches”. I find it difficult to believe that we are requested to consider mis – use by operators. Including this statement in the document could be viewed to be an acceptance of this practice.	Remove the text which is highlighted in red. (GD)	7	NC			This was a specific request from the M&EE and listed in Appendix A of the BCFC. There are unfortunately still incidents when operators have used pieces of wood to hold down ‘deadman’ pedals.
286	61	G 5.11.28	It is not just “good practice” to assess common cause failure modes, it is an essential part of doing a Performance Level analysis for certain categories of system.	Remove guidance, or correct it for consistency with EN 13849.	3	DC	59	G 5.11.26	Extra guidance added (now G 5.11.26): <i>This is in line with EN 13849-1:2015 which includes common causes and reasonably foreseeable misuse.</i>
287	61	G 5.11.30	OTP was taken out of the scope of RIS-0745-CCS because RIS-1530-PLT was deemed sufficient. It is not clear why RIS-0745-CCS is not being referred to when a decision was made that it should not apply to OTP.	Remove reference to RIS-0745-CCS.	3	NC			RIS-0745-CCS clause G 2.2.5 does cover software within control systems on OTM and OTP. The reference to RIS-0745-CCS here is provided as an additional source of information about cybersecurity.
288	61	5.12.1	Requirement for data logger now covers all lifting equipment including small hand operated hydraulic cranes. Derogations were granted for this previously.	Exclude requirements for data logger on smaller hand operated cranes and lifting equipment.	5	NC			This requirement is carried over unchanged from issue 6.
289	62	5.12.6 a)	This is a duplication of 5.12.1	Remove clause	5	NC			This clause specifies intervals, changes and number of events, and is unchanged from issue 6.
290	63	G5.12.14	Alert to company central location for DIG Mode selection	Agreed in principal and will help control the use of DIG mode when lifting to a degree. Should we not be pushing that “LIFT vs DIG” modes are controlled better on site through the site assurance and POS / PC’s – an alert is reactive and can go unnoticed if chosen to do so.	8	NC			The machine is already required to display an external blue light when the machine is in lift mode with an active RCI. This enables local supervision as part of the site assurance. This guidance is about facilitating remote monitoring.
291	64	5.13.1 c	The clause refers to the strength of the towbar as though it is up to the manufacturer to determine what this is. Appendix K gives the required strength in kN.	Refer to strength requirements in Appendix K.	3	DC	62	5.13.1 c)	Added cross reference to Appendix K.3
292	64	5.13.2	Standard say Rail-road access point	Should read road rail access point - change for consistency across the industry	9	DC	63	5.13.2	Changed to road-rail access point

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293	64	5.13.2	Needs to include that the access points need to consider safe working such as OLE risks	Amend as required	9	DC	82	5.19.1.5	On and off tracking is covered in 5.19 5.19.1.5 amended to include recovery operations
294	64	5.13.2	The means necessary to remove a failed machine from the railway at a rail-road access point shall be considered and included in the instruction handbook, as set out in 10.1.1.1 k).	Inconsistent use of Road-Rail and Rail-Road Other instances of known as a 'road-rail access point' - RRAP	11	DC	63	5.13.2	Changed to road-rail access point
295	65	G 5.13.9	Should we not say that the requirement for staff to enter a potential crush area should be designed out where ever possible alongside the information that is already presented?	Include information about designing out the potential crush zone when working with towbars	9	DC	63	G 5.13.9	Additional text added. <i>... to accommodate the personnel and avoid a potential crush zone.</i>
296	65	G 5.13.11	Typo	Remove word "and" at the end of para C	9	DC	63	G 5.13.11	Text amended to remove the 'and's': It is good practice to ensure all the following:
297	65	G5.13.11	Extend options for a position of safety	Consider inserting the use of remote control for emergency recovery to ensure a position of safety	9	DC	63	5.13.6	bullets e) and f) changed to new requirement 5.13.6 5.13.6 Emergency recovery controls shall be located either: (a) In a position of safety, for example within the cab or using a remote control; or (b) Easily reached from the ground, so that the person operating them is not put at risk by moving parts on the machine.
298	65	G5.13.11	All emergency controls should be accessible from a position of safety i.e. valves, engine,	Insert/amend as required	9	DC	63	5.13.6	bullets e) and f) changed to new requirement 5.13.6 5.13.6 Emergency recovery controls shall be located either: (a) In a position of safety, for example within the cab or using a remote control; or (b) Easily reached from the ground, so that the person operating them is not put at risk by moving parts on the machine.
299	65	5.14	No mention of indication/witness marks	Can it be included that indication marks can be used especially on safety devices in areas of high vibration	9	DC	64	G 5.14.4	G 5.14.4 additional text: <i>Marking on fasteners after tightening can also indicate movement in areas subject to vibration.</i>
300	67	5.15.1.11	With the exception of the lighting required in this section, 5.15.1, and the blue lights set out in 9.7.1.5 and 9.7.2.4, all external indicator lights shall be disabled in rail mode. This requirement does not apply to lights provided for illumination of working areas.	Given the number or 'magenta' lights being used for alternate Remote Control active etc. Could this not also be a permitted light colour ?	11	NC			This could be considered in a future revision. The choice of colour and location will need to be agreed before inclusion in the document.
301	67	5.15.1.15	This would be better as a requirement rather than good practice to eliminate uncertainty about what is required	Rewrite 5.15.1.1 as: OTP over 75 kg (gross weight) shall be fitted with two white marker lights and two red tail lights at each end that are visible during daylight on the track from 50 m away.	10	DC	65	5.15.1.2	Additional text added to 5.15.1.2: <i>The machine shall always display white marker lights in the direction of movement along the track and red tail lights at the opposite end that are visible during daylight on the track from 50m away.</i> G 5.15.1.15 deleted
302	70	5.15.3.1 and 5.15.3.2	Both clauses call up a guidance note to amend them. It is very bad practice for a GN to amend a requirement, only a requirement can amend a requirement.	Renumber G 5.15.3.12 to be 5.15.3.3 and then amend cross reference in 5.15.3.1 and 2 to 5.15.3.3	10	DC	68 69	5.15.3.1 5.15.3.2 G 5.15.3.11	Text amended to clarify the requirements and guidance: 5.15.3.1 <i>Machines that do not have rotating superstructures shall have predominantly yellow ends.</i> 5.15.3.2 <i>All machines that have rotating superstructures shall have a predominantly yellow surface finish.</i>

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									G 5.15.3.12 moved up to G 5.15.3.11
303	70	5.15.3.7	The clause is a duplicate of 5.15.3.8 b)	Remove	3	DC	69	5.15.3.7 b)	Removed. Clause 5.15.3.7 b) slightly reworded: “Red: Emergency brake levers, ... , the visible positive locking elements of locking securing components.”
304	70	5.15.3.7	This is duplicated in 5.15.3.8	Remove clause	5	DC	69	5.15.3.7 b)	Removed. Clause 5.15.3.7 b) slightly reworded: “Red: Emergency brake levers, ... , the visible positive locking elements of locking securing components.”
305	71	G5.15.3.15	This guidance is already mandated in 5.15.3.8. The guidance is therefore superfluous	Remove clause	5	NC			This guidance is unchanged from issue 6 and expands on the requirement.
306	73	5.16.2.1	“standard automotive practice” is undefined and a highly subjective term.	Either: - Give the specific automotive standard that is being referred to OR Mandate compliance with EN 60204-1/11/32/33 (these standards are Designated)	3	DC	71	5.16.2.1 G 5.16.2.2	Text amended. <i>5.16.2.1 All control circuits shall comply with EN 60204-1:2016 or an equivalent automotive standard.</i> <i>G 5.16.2.2 Control circuits designed to automotive standards are considered equivalent.</i>
307	74	5.16.5	Be accepted for use with the operating limitation of not being allowed in any circumstance under OLE, or in a conductor rail area, unless an isolation and electrical safety bonding has been implemented. In this case: . A permanent notice shall be provided in the operating positions to remind operators of this limitation; and . The limitation shall be included in the instruction handbook, as set out in 10.2.1.2 a) and 10.1.2.2 j); and . The data panels, where fitted (see Appendix C) suitably endorsed	Should listed on ECC not be included here.	11	DC	73	5.16.5.1 b) ii)	Amended 5.16.5.1 b) ii) to read: <i>The limitation shall be included on the ECC and in the instruction handbook, as set out in 10.1.2.2 a) and 10.1.2.2 j); and</i>
308	73	5.16.5.1 a)	Reference is made to part 2 of RIS-2715-RST, which in turn provides the minimum earth bond sizes. However table 1 of RIS-2715 is a guidance note, not a mandatory clause, and it is therefore not clear how this will be applied by the industry or PABs. RIS-1530-PLT needs to specify, explicitly and clearly, what the required earth bond size is.	Either: - Copy table 1 from RIS-2715-RST into RIS-1530-PLT issue 7 and mandate its contents Mandate a different earth bond size, whatever that size should be	3	NC			Network Rail has been evaluating the bonding requirements for OTP. When this guidance is available this could be incorporated into an update to this document. In the meantime, Table 1 in RIS-2715-RST sets out the normal minimum bond sizes that are compatible with the different types of OLE installations.
309	74	5.16.5.1 a)	The cross reference to whole of part 2 of RIS2715 is too broad – this includes other requirements for example orange lines are already covered in 5.18.2	Change reference to RIS2715 section 2.1	10	DC	72	5.16.5.1 a)	Part 2 changed to section 2.1 as suggested
310	74	5.16.5.1 a)	Be equipotentiality bonded in accordance with the requirements set out in part 2 of RIS-2715-RST; or	The bond sizes in RIS-2715-PLT re guidance note therefore are these bond sizes mandatory.	13	NC			Network Rail has been evaluating the bonding requirements for OTP. When this guidance is available this could be incorporated into an update to this document.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
									In the meantime, Table 1 in RIS-2715-RST sets out the normal minimum bond sizes that are compatible with the different types of OLE installations.
311	74	5.16.5.1 b)	<p>The clause allows machines to be used in isolated OLE and conductor rail areas without earth bonds being fitted to the machine. Network Rail's emergency change to the Plant Manual in March 2017 stated that "Following consultation with Engineering Experts in the STE M&EE function, the matter was raised at the RSSB Energy Standards Subject Committee, they ruled that the wording of clause 5.16.5.1 (b) in RIS-1530-PLT does not manage the risk ALARP (This requirement was also in all previous issues of RIS-1530-PLT as Clause 5.15.5.1 (b)) . They further advised that the lack of suitable equipotential bonds was non-compliant with the Electricity at Work Regulations 1989 with respect to Regulation 8 – Earthing or other suitable precautions."</p> <p>The requirements in RIS-1530-PLT issue 7 clause 5.16.5.1 b) are the same as in RIS-1530-PLT issue 6 5.16.5.1 b) and therefore presumably do not manage the risk ALARP or comply with the electricity at work regs.</p> <p>Following the emergency change to the plant manual, NR issued a Letter of Instruction that any OTP not fitted with earth bonds cannot be used in OLE or 3rd rail areas, regardless of whether or not an isolation has been taken. This requirement is now contained in clause 13 of module P300 of NR/L2/RMVP/0200.</p>	Update clause so that if earth bonds are not fitted the machine cannot be used in electrified areas regardless of whether or not an isolation has been taken.	3	DC	72	5.16.5.1 b)	<p>Text amended:</p> <p><i>b) Be accepted for use with the operating limitation of not being allowed in any circumstances under OLE or in a conductor rail area. In this case: ...</i></p>
312	74	5.16.5.4	By removing the changeover switch this would prevent its future use on tram system (becoming more prevalent in GB)	<p>Change 5.16.5.4 to:</p> <p>Where a basket fitted to a MEWP is equipped with a changeover switch for changing between equipotentially bonded and insulated, the switch shall be locked in the equipotentially bonded position and designed that it is changeable by trained maintenance staff only. The basket shall be confirmed to be bonded, as set out in 5.16.5.1 every time the changeover switch is used.</p>	10	NC			<p>Tram trains operate on OLE energised to 25kV OLE on the GB mainline network. There is a changeover of power supplies at the boundary of the tram and mainline infrastructures.</p> <p>Tram networks also require different wheel profiles to those specified in RIS-1530-PLT.</p>
313	75	G5.16.5.13	<p>Is the clause requiring that for excavators the superstructure is bonded to the chassis with a slip ring?</p> <p>This is "good practice" is this mandated or not</p>	Clarify requirement	5	NC			<p>This guidance is unchanged from issue 6.</p> <p>On recently fitted routes the OLE fault currents can be up to 15 kA. The provision of a slip ring reduces the risk of these high currents causing electrical damage to the roller bearing elements supporting the superstructure.</p>

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314	76	5.16.5.14	Is the testing inline with the current processes of the PAB	GOS to speak to PAB around this.	4	NC			Guidance unchanged from issue 6.
315	76	5.16.6.1	For consistency with EN 15746-2 the clause should mandate testing in accordance with EN 50153. G5.16.6.6 says that EN 50153 provides “a method”, but this is guidance and therefore will be interpreted as a <i>possible</i> way of testing, rather than the mandatory way of testing.	Mandate the EN 51053 test method within clause 5.16.6.1 (note that EN 15746 mandates EN 50153 testing)	3	DC	76	G 5.16.6.6	Text amended G 5.16.6.6 <i>Verification of the fault current path impedance is set out in BS EN 50153:2014+A2:2020.</i>
316	76	5.16.6.1	Bond tests	There are various testing methods for “Earth Bonds” and all the OTP manuals differ, can the standard not give a guidance or minimum requirement to be met? Secondly a minimum for the size and type of “Bond” and should include the slew ring and wheel bearings as per EN 50153, clause 6.4.3 Bonding Paths Quote – “ <i>There shall be at least two protective bonding paths between a vehicle body and the protective conductors of the fixed insulation</i> ” Furthermore clause 6.6 Additional requirements – Bearings Quote “ <i>Bearings on vehicles other than wagons shall not be used to connect exposed conductive paths</i> ”. And “ <i>Bearings on wagons should not be used to connect exposed conductive paths, if there is risk of damage to the bearings caused by electrical current</i> ”	8	NC			The provision of bonding is covered by 5.16.5.1 and testing method is covered by G 5.16.6.6. Network Rail has been evaluating the bonding requirements for OTP. When this guidance is available this could be incorporated into an update to this document.
317	76	5.16.6.1(b)	The maximum impedance figure in issue 7 states 0.05 ohms.	It should read 0.15 ohms (as stated in issue 6)	9	NC			The value in RIS-1530-PLT issue 7 is correct. The former NR Professional Head of Plant had issued a requirement to OTP suppliers to reduce the impedance from 0.15 to 0.05 to be consistent that with other vehicles carrying people.
318	76	5.16.6.5	The minimum cable diameter size for a single core insulated cable that is flexible and resistant to fuel and oil has been received from Paul Naylor and forwarded to Peter & Jordan for their decision.	Awaiting a decision from Peter & Jordan	9	NC			When Network Rail has finished been evaluating the bonding requirements for OTP and NR guidance is available this could be incorporated into an update to this document.
319	76	G5.16.6.6	A method of testing the fault current path impedance is set out in BS EN 50153:2014+A2:2020.	this guidance note states this is a method of testing this should be mandated or other tests could be used which are not as onerous	13	DC	75	G 5.16.6.6	Text amended: G 5.16.6.6 <i>Verification of the fault current path impedance is set out in BS EN 50153:2014+A2:2020.</i>
320	77	5.17	No ref to testing entity accreditation	The following could be added in order to ensure that the test is perform by accredited companies which is part of the plant PA process requirements "When testing is required, Test Certification and documentation should be provided in a safety case report	9	DC	76	G 5.17.1.7	New guidance G 5.17.1.7 <i>When testing is required, it is good practice for the EMC test report and certification to be prepared by a UKAS (for GB, or equivalent) test house.</i>

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				including the EMC Test Report prepared by an UKAS (for UK, or the equivalent for other countries) test house along with all other applicable documentation."					
321	77	5.17.1.1	BS EN ISO 13766: 2018 is a 'withdrawn' standard on BSI site.		4	NC			BS EN 13766 is withdrawn, but this is not the same as BS EN ISO 13766-1 and -2, which are current.
322	77	5.17.1.1	Former reference to EN13309 has been deleted (presumably because standard has been superseded) but there will still be machines in existence that are quoted compliant to 13309 so that should remain as an option. Note also that the replacement standard has two parts.	Amend 5.17.1.1 to: Except where a host machine is already stated to be compliant with European Automotive EMC Directive 2004/104/EC, machines shall meet the requirements of BS EN ISO 13766:2018 series, or BS EN 13309:2010 or clause 6 of BS EN 50121-3-1:2017+A1:2019	10	DC	75	5.17.1.1	Amended to: <i>...machines shall meet the requirements of one of the following:</i> a) <i>BS EN ISO 13766-1:2018 and BS EN ISO 13766-2:2018; or</i> b) <i>Clause 6 of BS EN 50121-3-1:2017+A1:2019; or</i> c) <i>BS EN 13309:2010.</i>
323	77	5.17.1.1	Except where a host machine is already stated to be compliant with European Automotive EMC Directive 2004/104/EC, machines shall meet the requirements of either BS EN ISO 13766:2018 or clause 6 of BS EN 50121-3-1:2017+A1:2019	Network Rail have not accepted the except where a host vehicle is already stated to be compliant. Given Network Rails stance on EMC for product acceptance – guidance or limitation updates could be given on this basis.	11	NC			Requirement is unchanged from issue 6
324	77	5.17.1.2	Some of GOS install is tested to EN61000-6-2	Maybe other EN should be also referenced.	4	NC			Requirement is unchanged from issue 6
325	78	5.17.3	Maybe there should be some research in to what EMC standards standard current attachments are made to. i.e. Movax/Engcon etc		4	NC			Requirement is unchanged from issue 6
326	80	G5.18.1.13	3565 mm assumes 600 mm below 4165 mm – 4165 is not the lowest wire height	Replace 3565 with 3440?	6	DC	78	G 5.18.1.13	Guidance rewritten to remove specific height, the OTP design requirement is that uncovered access and work areas do not exceed 1.4m arl and the provision of warning signs. <i>"The intention is that authorised staff on uncovered accessible areas can work under live OLE. This is managed by the combination of the following:</i> a) <i>Maximum uncovered platform height of up to 1.4 m above rail level;</i> b) <i>Provision of warning signs and orange warning lines, see 5.18.2;</i> c) <i>Provision of instructions for the safe use of machines;</i> d) <i>Staff competence and training in the safe use of the machine, working near electrification, and Electricity at work Regulations (1989)."</i> At locations where OLE goes below 4165 mm, GLRT1210 iss 3 G3.1.1.12 states 'At these locations, the assessment of workforce safety could identify the need for safety related application conditions to mitigate risk'. The guidance in G5.18.1.14 of the RIS-1530-PLT is consistent with the guidance in GLRT1210.
327	81	5.18.3	This presumably only applies to 25 kV AC OLE (as opposed to tram systems which could have other requirements)	Change title to Working and travelling under live 25 kV AC overhead line	10	NC			Tram trains operate on OLE energised to 25kV OLE on the GB mainline network. There is a changeover of power supplies at the boundary of the tram and mainline infrastructures.

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									Tram networks also require different wheel profiles to those specified in RIS-1530-PLT.
328	81	5.18.3.3	4040 mm is the lowest normal wire height according to GLRT1210 issue 3		6	NC			As set out in GLRT1210 iss 3, Table 1 the normal minimum wire height in 4165 mm. This OLE design height has applied for all existing OTP that have been given Network Rail Product Approval to operate under live OLE. Reducing the design height below 4165mm would mean Network Rail having to review all these PA certificates and potentially impose restrictions on existing OTP that are currently permitted to work under live OLE. At locations where OLE goes below 4165 mm, GLRT1210 iss 3 G3.1.1.12 states 'At these locations, the assessment of workforce safety could identify the need for safety related application conditions to mitigate risk'. This risk mitigation could identify the need to isolate the OLE when planning maintenance activities using OTP under locations of OLE below 4165 mm.
329	81	5.18.3.3	This assumes that the contact wire is the lowest component. This is not the case. Traditional cantilever designs have components and live part below the contact wire	Add guidance	6	NC			The 4165 mm OLE interface height has applied for all existing OTP that have been given Network Rail Product Approval to operate under live OLE. When travelling the moveable equipment on the OTP needs to be stowed and within the W6a upper gauge, as such it will be clear of any OLE components. When working any moveable equipment on the OTP is prohibited from being used under live OLE unless it is restricted to not exceeding 3500mm arl or and thus provides physical clearance to the OLE equipment.
330	82	G5.18.3.9	3500 mm	Replace with 3440 mm	6	NC			The maximum height of 3500 mm is consistent with the GLRT1210 iss 3 Table 1 standard minimum energised OLE height of 4165 mm. 3500 mm also achieves physical clearance to sections of OLE that are below 4165 mm. This machinery clearance to the OLE is significantly larger than the 75mm between the top of W6a vehicles and the lowest OLE height permitted by GLRT1210. All OTP operating under OLE are equipotential bonded to rail providing an additional protection to the machine operator.
331	82	G5.18.3.11	4165mm	Replace with 4040 mm	6	NC			The 4165 mm OLE interface height has applied for all existing OTP that have been given Network Rail Product Approval to operate under live OLE. This guidance is consistent with GLRT1210 iss 3, G3.1.1.12. The additional control measure could include arranging OLE isolations when planning possession activities using OTP under locations of OLE below 4165 mm.
332	83	5.19.1.2b	it is not clear what the statement. It doesn't specify in which condition it has to be able to on/off track	5.19.1.2 The machine shall either: a) Be capable of on and off tracking in tare and laden condition on a minimum cant of 100mm and a maximum gradient of 1 in 25 (40%) b) Have associated limitations applied, shown on the ECC and in the instruction handbook.	9	DC	82	5.19.1.2	Changed as suggested. Clause 5.19.1.3 deleted.
333	83	5.19.1.6	10.1.1.c what reference that "Safe system of work for on and off tracking (where the	shall be clarified	9	DC	148	10.1.1.1 c)	10.1.1.1.c text revised - deleted words in brackets

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			machine exceeds the stated gauge)". is 5.19.1.6 only needed where the machine exceeds the stated gauge?						
334	84	G5.19.1.12	It is good practice to design machines to be capable of on and off tracking at greater than 100 mm cant, for example up to 150 mm; this will promote ease of use	So why is the minimum in 5.19.1.3 not raised to 150mm ?	11	NC			The 150mm value is a recommendation but this may be too difficult to achieve for some machines.
335	85	5.19.2	No limitation is mentioned in which track condition you can use the turntable	ECC shall specify the turntable limitation a) Cant b) Gradient	9	DC	83	5.19.2.1	5.19.2.1 amended In addition to 5.19.1 where fitted turntables shall be designed for the following conditions
336	85	5.19.2	the turntable cannot be use on ALO site if the asset is out of gauge.		9	NC			On and off tracking operations with or without turntables will generally cause the machine to foul adjacent lines. Clause 5.19.1.7 requires a diagram to show how much space is required to do the on and off tracking.
337	85	5.19.2	How does the turntable design ensure that the RRV is in line with the track?	The design shall ensure that the RRV is in line with the track	9	DC	84	5.19.2.2	5.19.2.2 amended <i>Verification of the operational stability of the turntable arrangement shall be established by calculation and test</i>
338	86	5.19.3	This presumably only applies to 25 kV AC OLE (as opposed to tram systems which could have other requirements)	Change title to On and off tracking on track fitted with 25 kV AC OLE	10	NC			RIS-1530-PLT has not been produced for compatibility with tram networks. For example, tram networks use different wheel profiles to those specified in RIS-1530-PLT.
339	86	5.19.3.2	which is the diameter of the bonding? is it the same size mentioned on 5.16	the section shall make ref to 5.16	9	DC	85	G 5.19.3.6	New guidance added <i>See G.16.6.5 for guidance on bond sizes.</i>
340	86	5.19.4.1	The clause states that there are no machine design requirements, but that the operation must comply with the Rule Book. All operations must comply with the Rule Book, not just on and off tracking in conductor rail areas. Therefore it is not clear what the purpose of this clause is.	Remove redundant clause	3	DC	85	G 5.19.4.1	Changed to guidance G 5.19.4.1 <i>See 5.18.4, 5.19.1.1 b) and GERT8000-HB15.</i>
341	86	5.19.5.1	Duplication of 5.19.1.5	Remove clause	3	DC	85	N/A	Agree this is duplication, section 5.19.5 deleted.
342	88	5.20.2.2	Be wagons, registered in R2; or	There is not (XXXX) to explain R2. As there was with Issue 6.	11	DC	240	Definitions	R2 Added to definitions.
343	89	G5.20.2.16	This guidance would be more logical as a clause adjacent to 5.7.5	Move guidance into clause adjacent to 5.7.5	5	NC			This adds to the requirements for trailers; it does not affect the requirements in 5.7.5.
344	90	G5.20.3.16 and Appendix N	The specification for the camera is unchanged from issue 6	Network Rail have given many derogations for camera spec is this going to continue in issue 7 r should the spec be updated to a realistic specification that can be met	13	NC			The camera specification in Appendix N has been updated. It is in line with latest requirements in EN 15746-2:2020 and prEN 15955-2:2022 and recognises the update of ISO 16001.
345	91	5.20.5	These clauses relate specifically to operating instructions, not machine design.	Move to Section 10. If not moving to section 10, make sure they exist in section 10, and provide a cross reference from this section (it should be possible to review an ops and maintenance manual in full using section 10)	3	DC	148	10.1.1.1 b)	10.1.1.1 b) refers back to 5.20.3.10. Added "... and instructions, as set out in 5.20.5" to 10.1.1.1 b)

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346	93	G 5.21.3.8	It is permissible for machines of 1 tonne gross laden <u>weight of under to have</u> nonferrous wheel treads and flanges, provided that the machine meets the Electrical conducting requirements of wheels and axles set out in 5.16.5.	Meaning in the clause is not clear	9	DC	92	G 5.21.3.8	Typo corrected "... 1 tonne gross laden weight or under ..."
347	94	G5.21.3.9	The guidance contradicts the clause. The clause mandates P1 or S1002, and then the guidance says that it doesn't apply to OD machines. If the clause doesn't apply to OD machines, then this should be stated within the clause.	Update clause to make clear it doesn't apply to OD machines.	3	NC			The exemption only applies to existing OD machines
348	95	5.21.4.2	Incorrect cross reference, wheelset back to back measurement given in Table 5	Change Table 4 to Table 5	10	DC	93	5.21.4.2	Corrected
349	95	5.22	The section does not make any reference to how the handrails, steps and railing shall be designed. The Clause should include the compliance with other rail standards such as BS EN 16116-1:2022 and BS EN 16116-2:2021		9	DC	94	G 5.22.9 d)	New clause 5.22.9 d) Further information on the design of steps, handrails and associated access is given in BS EN 16116-1:2022 and BS EN 16116-2:2021.
350	96	G 5.22.9 b	"The custom to use the rail wheel as a step; this is likely to be acceptable when dry, but it can be very slippery when wet;" I disagree , it is never acceptable to step onto a rail wheel. In considering using the rail wheel as a step this may be taken to be approving the practice of commonly climbing on to rail wheels .	Remove the text which is highlighted in red. (GD)	7	NC			This guidance is unchanged from issue 6.
351	98	5.25	The section does not make any reference to windows requirement for welding activities, for example future version of DDR	add the compliance to BS EN ISO 25980:2023 Health and safety in welding and allied processes. Transparent welding curtains, strips and screens for arc welding processes. when the windows is for welding activities.	9	NC			This request is outside the scope of the engineering requirements set out in RIS-1530-RST. It would be more appropriate for inclusion in the documented process for setting up a safe system of work when undertaking welding activities.
352	98	5.25.2	Guidance note should not amend the requirement in a clause.	Change exception to 5.25.3 Change G 5.25.4 to be 5.25.3	10	DC	97	5.25.2	Deleted 'except as set out in G 5.25.4'. The guidance sets out permission to use equivalent standards.
353	98	5.25.2 b	Why is this a possibility when all the OTP speed are limited to a maximum of 20mph from the RRAP to the working site?	eliminate clause 5.25.2b	9	NC			In line with previous issues, RIS-1530-RST iss 7 incudes the engineering requirements to give machines the capability to operate above 20 mph. This is does not imply that the machine will be permitted to operate at a particular speed. The 20 mph speed limit when travelling in possession on the GB mainline is a condition of access to Network Rail managed infrastructure. Should Network Rail decide to revise the permissible speed limit RIS-1530-PLT contains the necessary engineering requirements. Other infrastructure managers could permit OTP operation at speeds above 20 mph.

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354	99	5.26	15746-2 refers to ISO 15817:2012 this standard is quite helpful in some areas if a little basic.		9	DC	98	G 5.26.6	Changed clause 5.26.6 to read: “See also BS ISO 15817:2012, as referenced in BS EN 15746-2:2020 and prEN 15955-2:2022.” BS ISO 15817:2012 added to References.
355	99	5.26.1	c) should be "loss or corruption of signal", unless we want to list all reasons for this, flat battery, interference etc. Or could this just be referenced to 15746-2 rather than repeated.		9	DC	97 98	5.26.1 G 5.26.6	Changed as suggested. Added reference to prEN 15955-2:2022 in G 5.26.6.
356	99	5.26.2	It is not clear if this is an operational limitation (ECC, ops manual, data panel) or an engineering limitation (interlock)	Clarify whether an engineering interlock is required	3	DC	97	5.26.3	Text clarified that it is an engineering requirement: “... the maximum speed of the machine shall be limited by engineering means to 3 mph (5 km/h).”
357	99	5.26.3	It is extremely difficult to purchase remote control systems that have been tested to EN 50121 series of standards. Is it possible to specify an alternative from the 61000 series?	Specify an alternative from the EN 61000 series of standards.	3	NC			This requirement is unchanged from Issue 6.
358	100	5.29.2	The structural integrity of the machine shall be demonstrated by either:	FMEA and DFMEA can also be evidence of structural integrity	9	NC			This requirement is unchanged from Issue 6.
359	100	5.29.2	The terms used in this section are vague and hold almost no practical meaning. <ul style="list-style-type: none"> Failure can be defined as significantly different things to different organisations thus providing no standardisation across the industry (yield, crack initiation, crack progression, fatigue, ultimate) 5000 hours normal operation can also be ambiguous. For example do we count hours as when the machine is on or while it is working or while it is on rail? How do we account for fatigue given that the driver of fatigue damage is the stress range and this can vary significantly with the definition of the cycles? There is no guidance as to the “acceptable” stress levels. Is there a target factor of safety level? Is there an industry process for determining acceptability for a particular product?	If possible we suggest that more definitions of terms are included or guidance as to the application of best practise. In particular a process to define or estimate “normal operation” would be extremely helpful for the analysis of fatigue performance of both structures and welds.	12	DC	99	G 5.29.8	Added definition of failure from GMRT2100.
360	101	G 5.29.5	These requirements are consistent with BS EN 15746-1:2020 and prEN 15955-1:2022, and help to ensure the structural integrity of the machine.	Make reference to BS EN 1990:2002 and specifically Eurocode 3: Design of steel structures as guidance for structural analysis	9	DC	99	G 5.29.8	Added reference to RIS-2780-RST to G 5.29.8. This gives guidance on the applicability of Eurocode 3. “Although GMRT2100 and RIS-2780-RST do not specifically apply to OTP, the requirements therein may be used as a source of information to support the assessment of structural integrity.”
361	101	G5.29.6	This should be a mandated clause	Move clause into mandated section	5	NC			Guidance unchanged from issue 6.

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362	102	5.30.1	We believe that some additional guidance could be included.	We suggest use of BS EN 60204 to add clarity.	12	DC	102	G 5.30.1.9	New guidance added: <i>BS EN 60204-1:2018 also sets out requirements which may be relevant to OTP.</i> BS EN 60204-1:2018 added to References.
363	102	G 5.30.1.3	No text ??	Delete 5.30.1.3	10	DC	101	G 5.30.1.3 G 5.30.1.4 G 5.30.1.5	Clauses reworked: G 5.30.1.3 It is good practice to ensure that sources of high power densities are well-spaced, or separated by appropriate barriers, from more readily flammable substances. G 5.30.1.4 Examples of sources of high power density are as follows: a) Pressurised gas canisters; b) Internal combustion engines; c) Electrical power equipment (including dc current collection equipment); d) Braking systems; e) Diesel-fuelled heaters; f) Cooking equipment; and Heaters; G 5.30.1.5 Examples of readily flammable substances are as follows: a) Fuel; b) Hydraulic oil; c) Lubricating oil; and d) Their associated tanks (or reservoirs) and pipework, other than that unavoidably proximate to the equipment.
364	102	G 5.30.1.4	<ul style="list-style-type: none"> Second sub list has restarted numbering, therefore there are two a) two b) etc. 	Continue numbering of second sub list starting with h)	10	DC	101	G 5.30.1.3 G 5.30.1.4 G 5.30.1.5	Clauses reworked: G 5.30.1.3 It is good practice to ensure that sources of high power densities are well-spaced, or separated by appropriate barriers, from more readily flammable substances. G 5.30.1.4 Examples of sources of high power density are as follows: a) Pressurised gas canisters; b) Internal combustion engines; c) Electrical power equipment (including dc current collection equipment); d) Braking systems; e) Diesel-fuelled heaters; f) Cooking equipment; and Heaters; G 5.30.1.5 Examples of readily flammable substances are as follows: a) Fuel; b) Hydraulic oil; c) Lubricating oil; and Their associated tanks (or reservoirs) and pipework, other than that unavoidably proximate to the equipment.
365	103	5.30.2.3	Is it permissible for the manufacturer to provide a space for fire extinguisher so that the operator can fit their extinguisher of choice?	Consider rewording	10	NC			The requirement is the provision of a fire extinguisher. If an operator wants to use a particular extinguisher this can be specified in the contract.

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366	103	5.30.2.4	This is not possible to achieve. Fuel supply must be cut as part of the extinguishing system, otherwise there is a high chance the fire will either not be put out, or will re-ignite. It is not clear what the benefit of this clause is; once a piece of OTP is on fire it is not reasonable to expect the operator to continue using the machine, even to drive it to a safer position. The operator must immediately evacuate the machine if it is on fire.	Update to “Where an automatic extinguishing system is fitted, once the fire has been extinguished and the operator has assured themselves that the source of fire has been eliminated, it shall be possible to restart the machine and it’s work functions”	3	DC	102	5.30.2.4	Text amended: <i>Where an automatic extinguishing system is fitted, it shall be possible to restart the machine and its work functions following the system activation and an assessment that the source of fire has been eliminated.</i>
367	103	5.30.2.4	Is this required. If so why? Most systems cut engine.		4	DC	102	5.30.2.4	Text amended : <i>Where an automatic extinguishing system is fitted, it shall be possible to restart the machine and its work functions following the system activation and an assessment that the source of fire has been eliminated.</i>
368	104	5.31	The definition “enclosed locations” is not specific. Does it refer to tunnels, if so what is the minimum length to form a tunnel. Does it refer to London Underground tunnels	Clarify definition of enclosed locations	5	DC	238	Definitions	Enclosed locations included in definitions.
369	104	5.31.1.5	Acceptable limits is not a defined term	Define the acceptable limits	5	NC			Requirement has not changed from issue 6.
370	105	5.31.2	The definition “enclosed locations” is not specific. Does it refer to tunnels, if so what is the minimum length to form a tunnel. Does it refer to London Underground tunnels	Clarify definition of enclosed locations	5	DC	238	Definitions	Enclosed locations included in definitions.
371	105	5.31.2.2	The clause states that it is not exhaustive. It is therefore not clear how to comply with the clause. The guidance points towards EN 45545, but compliance with this standard is not possible for a machine where the majority of the material is within the host machine.	Update the clause so that it is exhaustive.	3	DC	105	5.31.2.2	Bullets a), b) and c) supported by the guidance is considered sufficient to carry out the assessment. 'This list is not exhaustive' deleted.
372	105	G5.31.1.12	The Bosch ETD 020.50 instrument does not appear to be a currently available product.	Specify a currently available equivalent product.	3	NC			If an alternative to the Bosch ETD 020.50 can be identified, this can be included in a future revision.
373	107	6.1.1	The clause currently mandates that the brakes are interlocked with railgear up/down movement, so that the brakes are applied while the machine is on/off-tracking, but does not mandate interlocking of railgear up/down movement so that one railgear is fully in contact with the road wheels before the other railgear can move. Almost all runaways happen during on/off-tracking, and almost all runaways happen with the railgear partly deployed.	Add: “On type 9B machines, the railgear shall be controlled by engineering means so that: - During on-tracking, one railgear is fully in contact with the road wheels before the other railgear is able to begin lowering During off-tracking, one set of road wheels is fully in contact with the ground before the other railgear is able to move away from the road wheels	3	DC	106	G 6.1.6	The runaway incidents of the Type 9b machines have occurred when the deployment has not complied with the requirements in 6.1.1 or the maintenance practices have not ensured the correct functioning of the rail wheel brakes. Additional guidance added to cover the type 9b machines: <i>On type 9B machines, during the on and off tracking process it is good practice to</i>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
									<p>a) Interlock the deployment of the railgear so that the railgear at one end is fully in contact with the road wheels before the other railgear is able to begin lowering.</p> <p>b) Ensure the rail wheel brakes at one end of the machine remain applied during the deployment and retraction of the rail gear at the other end.</p> <p>c) Interlock the retraction of the railgear so that one set of road wheels is fully in contact with the ground before the other railgear is able to move away from the road wheels.</p>
374	107	6.1.2	In our opinion removal of the specific point that tracked machines shall not damage the railhead changes the tone of the requirement. This change will discourage the fitment of systems that limit damage to the rail head.	Changing the wording to place the emphasis on the protection of the rail head under all on & off tracking scenarios.	12	NC			The bullets in 6.1.2 set out the requirements for tracked vehicles with the Rationale explaining is to ensure they do not damage the rail head.
375	107	6.1.3	These are requirements for the ops manual, but no reference is given to Section 10. It should be possible to fully review the ops manual using section 10.1.	Ensure that the requirements exist in Section 10.1.	3	DC	106	6.1.3	Cross-reference to 10.1.1. added.
376	108	6.2.3.4	This clause is unclear. Is this not a duplication of 6.2.3.1	Clarify requirement or remove clause	5	DC	108	N/A	Clause removed.
377	109	G6.2.3.7	Is this not the machine brakes?	Clarify requirement or remove clause	5	NC			The guidance is about how the system is controlled. The actual system is not specified it could be one of the braking systems or the transmission system depending on the machine.
378	109	6.2.4.3	Ambiguous; a clause should not reference a guidance note.	Make guidance note part of the clause.	4	DC	109	G 6.2.4.8	The requirement for the deployment is in 6.2.4.2. Clause 6.2.4.3 deleted and G 6.2.4.8 amended to set out the circumstances when it is permitted change the configuration <i>G 6.2.4.8 When negotiating raised check rails, Type 9C machines are permitted, in travelling mode only,</i>
379	112	6.4.2	It is not clear who a “competent body” is. If this is the PAB, then it is clearer to state PAB. If it is someone else, then it is not clear who it is. Note that approval from the host machine OEM is very difficult to obtain, as the machine is being re-CE marked by the converter, and therefore the converter is taking legislative responsibility for the machine.	Remove clause.	3	NC			Change all competent body references (3) to competent engineer. Added new definition: Competent Engineer – For the purpose of this document a competent engineer fulfils the role set out in RIS-1710-PLT.
380	112	6.4.3	Should be Road Vehicles (Construction and Use) Regulations 1986, not Road Machines	Correct reference	3	DC	111	6.4.3	Corrected.
381	112	G 6.4.9	The cross reference to G 5.29.13 seems irrelevant	Check correct cross reference	10	DC	111	G 6.4.9	Cross reference changed to whole section 5.29: <i>G 6.4.9 Further information on structural integrity is set out in section 5.29 of this document.</i>
382	113	7.1.1 a	Can we get R2 added to the definitions at the bottom? It may also be worth adding RIS-2453-RST to the references		9	DC	248	Definitions	R2 added to definitions.
383	113	7.2.1	Ambiguous; a clause should not reference a guidance note.	Make guidance note part of the clause.	4	DC	112	7.2.1 d)	7.2.1.d) amended:

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
									For operational compatibility with towing machines, trailers shall have an air service brake and parking brake fitted meeting the requirements of 5.7. The parking and service brake system shall be Third paragraph deleted.
384	113	7.2.1	Why are these considered amendments to this document rather than simply sections of it?		9	NC			For consistency this grouping of the trailer requirements has been carried over from issue 6.
385	113	7.2.1 b)	NR Head of plant has previously advised that this is not required as if the coupling meets the requirements of the appropriate appendix, the limiting factor is not the coupling strength	Remove clause	5	NC			The requirement is that a structural assessment needs to be undertaken to support the declaration on the ECC and instruction handbook concerning the number and total weight of connected trailers.
386	113	7.2.1.d)	Exceptions to requirements should not be made in guidance notes Also no mention made of G7.2.9 which also gives an exemption to d)	Change reference to G7.2.7 and G7.2.8 and should also include reference to current G7.2.9 as renumbered Change G7.2.7, G7.2.8 and G7.2.9 from being guidance to requirements	10	DC	112	7.2.1 d)	7.2.1.d) amended: For operational compatibility with towing machines, trailers shall have an air service brake and parking brake fitted meeting the requirements of 5.7. The guidance gives permitted alternatives.
387	114	7.2.1 h)	It may be preferable to include guidance on a font height and weight over a legibility distance.		9	NC			To be considered at a future revision.
388	113	7.2.1 l)	This has an exemption in G.7.2.12 which is not noted. However it should not be a guidance of course!!!!	Make reference to G.7.2.12 (when it has been renumbered) Change G 7.2.12 from being guidance to a requirement	10	DC	113	7.2.1 m)	G 7.2.12 moved to requirement after 7.2.1 l): 7.2.1 m) Trailers with a tare weight of 0.5 tonnes or less and not capable of being coupled in multiple shall have lamp irons or other suitable means of attaching lights.
389	114	7.2.2	“Two wheeled trailers shall comply with the following” There is no statement to draw to the attention of operators that two wheeled trailers can have very high hitch loads which if not highlighted can lead to staff injury if uncoupled when loaded.	Include in the standard “ 7.2.2 e Hitch load. All two wheeled trailers shall have a warning notice located at each side of the drawbar warning not to disconnect the loaded trailer and state what the maximum hitch load shall be.” This may prevent a crush injury from occurring (GD)	7	DC	113	7.2.2 e)	Text amended as suggested: 7.2.2 e) Have a notice located at each side of the drawbar warning not to disconnect when loaded.
390	114	7.2.3	How is this to be assessed for trailers that may be used across multiple towing machines of different designs?		9	NC	113 114	7.2.3 G 7.2.15	Text amended to read ' For trailers whose design obstructs the forward visibility required by 5.9.1.1 if used in front of the intended towing machine. New guidance added G 7.2.15 There are several factors influencing whether a trailer obstructs forward visibility when propelling, such as the height of the cab, the length of the trailer, whether multiple trailers are propelled, and the size and shape of any load on the trailer.
391	115	G 7.2.12	Is this guidance to say that trailers under 0.5t only need lamp irons or that those over 0.5t cannot have them for emergency lighting?		9	NC			Trailers over 0.5 tonnes often have on board batteries to power the marker and tail lights. This feature is not usually found on the lighter trailers. 7.2.1l) does not prevent lamp irons being used on the larger trailers.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
392	115	G 7.2.12	Is that 0.5t tare or gross?		9	DC	113	7.2.1 m)	Tare added. Text transferred to 7.2.1
393	115	G7.2.12	It is not clear if this is 0.5 tonnes tare or gross. In 1530 issue 6 it was tare.	Clarify if the guidance is for tare or gross weight.	3	DC	113	7.2.1 m)	Tare added. Text transferred to 7.2.1
394	115	G 7.2.14	If an “attachment” is able to move along the track when de-coupled from a towing machine then surely it is a Demountable Machine, not an attachment.	Clarify the guidance	3	NC			Guidance is unchanged from issue 6.
395	115	7.3.1.1	Parking Brake indication	Consider adding new clause as mandatory that a gauge or clear indication for MEWP type machines, RAIB improvement notification to Pod – Trak, post Belle Isle Runaway	8	DC	42 43 115	5.7.5.2 G 5.7.5.11 7.3.1.1.a) G 7.3.1.3 G 7.3.1.4	Moved the parking brake indication requirements and guidance to section 5.7.5. Existing text in 7.3.1.1a) moved to after 5.7.5.2. Moved existing G 7.3.1.3 and G7.3.1.4 to guidance in G 5.7.5.11 New text for 7.3.1.1 to clarify this section applies to trailers. 7.3.1.1 a) A failsafe visual indication to show that the parking brake is in the ‘OFF’ or ‘ON’ position shall be provided on the outside of each trailer: or G 7.3.1.3 It is good practice to ensure it is possible to see whether the trailer parking brake is on or off whilst standing next to the towing machine. G 7.3.1.4 If a light system is used to indicate ‘ON’ or ‘OFF’ it is good practice follow the arrangement in G 5.7.5.12.
396	116	7.3.2	Are hydraulic park brakes still allowed?		9	NC			The requirements are service brakes on trailers shall be air braked except where these are exempted by the guidance in 7.2. There is currently no similar restriction on the parking brake.
397	117	7.4.1	“, or both” is an unnecessary duplication.	Delete.	4	DC	116	7.4.1	As suggested, ‘or both’ deleted.
398	118	8.1.1 b	b) Trolleys permitted to be used outside of a possession shall comply with the requirements for the electrical resistance across rails set out in section 5.12.1 of BS EN 13977:2011.	GERT8000-HB10 Rule Book issue 5 Comes into force 02 December 2023 now states A COSS must make sure the line is blocked before the trolley is placed on the line – thus all trollies must now be used in possession. All trollies should be detectable by the signalling system where possible to mitigate items being left on the line. This could include GPS trackers for trollies used in axle counter areas.	13	DC	117	8.1.1 b) & c)	The option to supply insulated trollies is retained as there may be specific working activities where their use is required. Text amended to clarify bullet b) applies to insulated trolley: <i>b) insulated trollies permitted to be used outside of a possession shall comply with the requirements for the electrical resistance across rails set out in section 5.12.1 of BS EN 13977:2011.</i> <i>c) Non-insulated trollies intended to be used within a possession or line blockage shall have an electrical resistance between the rail wheels of <0.01Ω measured across wheel tread surface on wheels on opposite rails. See also 8.2</i>
399	118	8.1.1 b	Trolleys with meeting that requirement are not allowed on NRMI inside or outside a possession they are required to meet 8.1.1c		9	DC	117	8.1.1 b) & c)	The option to supply insulated trollies is retained as there may be specific working activities where their use is required. Text amended to clarify bullet b) applies to insulated trollies: <i>b) insulated trollies permitted to be used outside of a possession shall comply with the requirements for the electrical resistance across rails set out in section 5.12.1 of BS EN 13977:2011.</i> <i>c) Non-insulated trollies intended to be used within a possession or line blockage shall have an electrical resistance between the rail wheels of <0.01Ω measured across wheel tread surface on wheels on opposite rails. See also 8.2</i>
400	118	8.1.1 b)	Trolleys permitted to be used outside of a possession shall comply with the requirements for the electrical resistance across rails set out in section 5.12.1 of	Network Rail have issued derogations for this clause on the below basis. Consideration needs to be given to ECC’s for trollies that are for	11	DC	117	8.1.1 b) & c)	The option to supply insulated trollies is retained as there may be specific working activities where their use is required: Text amended to clarify this bullet b) applies to insulated trollies.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
			BS EN 13977:2011	<p>'within possession working' and the use of 'line blocks'</p> <p>Network Rail prohibits the use of isolated wheel trolleys on the network due to safety concerns related to the operation of track circuits. The trolleys are to be used outside of a possession in line blockages as per GE/RT8000 HB10 section 2.2.</p> <p>This would require the impedance between running wheels to be >1MΩ to comply with BS EN 13977, placing the standard in contradiction to Network Rail's policy of banning isolated wheels</p>					<p>b) insulated trolleys permitted to be used outside of a possession shall comply with the requirements for the electrical resistance across rails set out in section 5.12.1 of BS EN 13977:2011.</p> <p>c) Non-insulated trolleys intended to be used within a possession or line blockage shall have an electrical resistance between the rail wheels of <0.01Ω measured across wheel tread surface on wheels on opposite rails. See also 8.2</p>
401	118	8.1.1 d ii	Is all of this clause only relevant when Fig 17 lower gauge is used?		9	DC	117 118	8.1.1 d) i) & ii) Figure 16 Figure 17	<p>Text amended to clarify the requirements:</p> <p>i) Compliant with W6a gauge, as defined in appendix A of GERT8073 and the exceedances shown in Figure 16; or</p> <p>ii) Restricted for use when the exceedances shown in Figure 17 are utilised. The ECC shall be endorsed 'Not for use on switches and crossings with a raised check rail.</p> <p>Figure 16 and Figure 17 replaced 'railborne portable and transportable plant' with 'trolleys'.</p>
402	119	8.1.2	Where a trolley is considered likely to be left on the track, there shall be the provision to attach a lamp at both ends of the trolley.	GERT8000-HB10 Rule Book issue 5 Comes into force 02 December 2023 now states A red light is displayed on the trolley – which must be visible in both directions – standard should provide guidance on colour of lamps and give performance requirements for lamps / battery life etc and remove text about likely to be left on the track,	1	DC	118	8.1.2	<p>Text revised:</p> <p>8.1.2 There shall be provision to attach a lamp at both ends of the trolley.</p> <p>The work site safety plan should specify what lamp is to be displayed.</p>
403	119	8.1.2	All trolleys should be considered likely to be left on track based on incident history.		9	DC	118	8.1.2	<p>Text revised:</p> <p>8.1.2 There shall be provision to attach a lamp at both ends of the trolley.</p>
404	119	G8.1.4	I think that the red flag option is to be retired.		9	DC	118	G 8.1.4	<p>Text amended to remove the reference to a red flag:</p> <p>G 8.1.4 A trolley used as described in GERT8000-HB10 is required to have the ability to display a red light.</p>
405	119	G8.1.4	In view of the accidents where trolleys have been left of the track it would be politics to delete reference to flags	<p>Amend clause to:</p> <p>A trolley used as described in GERT8000-HB10 is required to have the ability to display a red light.</p>	10	DC	118	G 8.1.4	<p>Text amended to remove the reference to a red flag:</p> <p>G 8.1.4 A trolley used as described in GERT8000-HB10 is required to have the ability to display a red light.</p>
406	119	G8.1.10	A bracket acceptable for attaching a lamp is shown in Figure 11	Bracket is for end of train lamps and not suitable for track trollies	1	NC			This bracket enables a range of standard railway lamps to be fitted.
407	120	8.2.2 b	It may be worth changing painted to coloured to allow for anodising or insulated materials with a natural blue colour.		9	DC	119	8.2.2 b) G 8.2.4	Amended to 'coloured'; also in G8.2.4.
408	120	G8.2.4	The blue painted wheels provides a visual indication of those trolleys that have been specifically design not to be capable of activating track circuits. Specific operating	This detail is not communicated outside of this standard and should be in the rule book or GERT8000-HB10 or sectional appendix to indicate where such trollies are permit to	1	NC			The option to supply insulated trolleys is retained as there may be specific working activities where their use is required.

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			instructions need to be prepared when it is planned to use these types of trolleys.	operate – this inter increase the risk of a trolley being left on the track which is not detected by the signalling system is this still design feature required given the numerous incidents of trollies being left on the track at the end of possessions.					The work site safety plan should detail when these insulated trolleys are to be used. It should include reference to the blue wheels as the means to identify an insulated trolley.
409	120	8.3	Brake systems	For clarity the standard should cover skates such as Rail Skate Basket - Arbil Rail to define criteria for braking this is currently excluded by section 4.5 which run on a single rail and fall off the track if left unattended. Skates are lighter to use and can be removed from the lineside simply when not in use.	1	NC			RIS-1530-PLT specifically covers the engineering requirements for On-Track Plant and Trolleys that are railborne (supported simultaneously on both running rails). The skates described are not railborne as they only rest on one rail and as such thus fall within the scope of RIS-1701-PLT.
410	120	8.3.3	The performance shall be demonstrated dynamically to meet the stopping distance: a) At 6 km/h with twice the stated permitted maximum load; and b) At 10 km/h with the maximum permitted payload.	If clause 8.3.1 states the trolleys should be designed to EN13977 Including guidance G8.3.9 - Should the performance demonstration not be aligned with BS EN 13977 noting wet railhead and brake gear?	11	DC	119	G 8.3.9	G 8.3.9 amended to: <i>The braking requirements in BS EN 13977:2011 are considered necessary for safe operation on the GB mainline railway in both dry and wet conditions.</i>
411	120	8.3.5	Clause is subjective as the gradient of the downward slope is not specified	State gradient of downward slope	5	NC			Unchanged from issue 6; gradient and stopping distance requirements are set out in BS EN 13977:2011.
412	121	G8.3.12	The commonly accepted maximum speed of trolleys is 5 km/h (3 mph); this is managed by staff discipline.	This requirement is not stated in GERT8000-HB10 Rule Book issue 5 Comes into force 02 December 2023 how is this communicated to staff?	1	NC			Staff competency and training is outside the scope of this engineering standard.
413	121	G8.3.14	Why is “dynamic” torque referred to? Torque testing of brakes is almost always a static measurement, particularly if the brakes are a friction brake design.	Remove “dynamic”	3	DC	120	N/A	Guidance clause deleted – the process and explanation for dynamically torque testing the brakes is set out in M&EE COP0018.
414	121	8.4.1	Pulling a trolley places the operator in a high-risk position, should it not be a requirement for that to be designed out as a primary method of propulsion.		9	DC	120	8.4.1	(push or pull) has been deleted
415	121	8.4.1	Trolleys shall be designed taking into account the capabilities of the people required to propel (push or pull) them	The Guidance G8.4.5 forwards to NR specialists however should the clause not align with NR Product acceptance requirements and HSE and list: Risk Assessment for Pushing and Pulling (RAPP) and Manual handling Assessment Chart MAC assessments ?	11	NC			Unchanged requirement from issue 6.
416	123	9.1.1.1	It is not possible for the manufacturer or PAB to provide an exhaustive list of requirements for using the machine ALO. This is site specific, and must be managed in accordance with COP0032 and the Plant Manual. See also comment 13 above.	Remove all references to Any Line Open working in RIS-1530-PLT. Mandate that the type of MLD, the MLD pre-set positions (if applicable), the machine gauge, and the work equipment gauge exceedance are stated on the ECC, data panel and instruction handbook. From this, planners can establish a SSoW. It is	3	NC			In the first bullet the requirements for the movement limiting devices are set out in the referenced section 5.8. The second bullet covers the situation where only part of a machine could be used in ALO situations, whilst other parts cannot be deployed.

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				not possible for 1530 to say when machines can and can't be used ALO, as it is a function of both the worksite and the machine, not just the machine.					There are standard distances between adjacent lines so the manufacturer should be able to determine and document the conditions when the moveable parts could be used. The points about gauge exceedance are covered in 9.1.2.
417	123	9.1.1.1	The new format has made this clause less clear that it is only concerned with moveable parts that could foul adjacent line(s)	Reword 9.1.1.1 to A machine with moveable parts shall not be used with any lines open to traffic unless either: a) The machine is permitted to be operated with any lines open to traffic because no part (except door, see 5.22.1 b)) can foul the adjacent line and the limitations of operation are clearly shown on the ECC and included in the instruction handbook or b) Limiting devices, as set out in 5.8, capable of stopping the slewing action of the superstructure (both front and rear) in all operating conditions, are fitted.	10	DC	122	9.1.1.1	Text amended as suggested.
418	123	9.1.2.2	We think this may be an exact repeat of 9.1.2.1 b)	Suggest deletion or re-wording as appropriate.	12	DC	122	N/A	Clause deleted.
419	125	G9.1.3.5	It is good practice to label the under structure of RRVs to identify the pivoting axle end (No 1 or Zero o) and the fixed axle end (No 2 or 180o)	Suggest remove from guidance to a clause. Some contractors are already doing this.	11	NC			Labelling is a given as a recommendation, as there may be other more visible features of the machine that aid the identification of the pivoting axle.
420	125	9.2.1.1	Section 9.2 says that it applies to “cranes (including excavators and loaders used as cranes)”. Clause 9.2.1.1 mandates compliance with EN 13000. The scope section of EN 13000 says that it does not apply to earth moving machinery used for object handling, and directs the reader to the EN 474 series of standards. Because EN 13000 specifically does not apply to excavators, it is not possible to buy an excavator that is stated as compliant with EN 13000. It would not be possible or appropriate for an RRV converter to determine the compliance of an excavator with EN 13000. For example, the RRV converter does not have access to the design information required to perform structural analysis.	Update the clause to read: “Other than knuckle boom cranes and excavators.....” Add a clause requiring excavators to comply with EN 474-1 and EN 474-5.	3	DC	124	9.2.1.1	Changed as suggested.

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421	125	9.3.1.1	<p>The clause mandates compliance with EN 280-1:2022 or-2:2022 where appropriate.</p> <p>Neither of these standards are Designated/Harmonised, and they may never be. Therefore purchasing host MEWPs that are declared compliant with these standards will not be possible, or at least extremely difficult and limited. The RRV converter would have to certify the machine themselves to EN 280-1:2022, which would:</p> <ul style="list-style-type: none"> - Potentially require modification to the OEM MEWP - Require the RRV converter to build the EN 280:2022 technical file. This will not be possible without OEM support, and OEMs will not give support. <p>Place RRV converters in an at-risk position, whereby they are required to state compliance to EN 280:2022 without the support of a Machinery Regs ApBo (an ApBo can't give type approval to a standard that isn't Designated)</p>	For new machines, mandate compliance with the version of EN 280 that is currently Designated.	3	NC			<p>The designation of the standards is the responsibility of the Department of Trade and this is outstanding for several machinery related standards (including EN 15746-2:2020).</p> <p>The RIS calls up the latest published standards as they provide the latest industry agreed requirements for MEWPs and also cover features that are not covered by the designated standards.</p> <p>It is likely that several of the MEWP OEMs were involved in developing the latest EN requirements and are probably creating designs to exploit these requirements.</p>
422	125	9.3.1.1	BS EN 280-1:2022 is not a harmonised standard. Machines cannot necessarily be procured which meet this standard.	Change requirement to current standard of EN 280	5	NC			<p>The designation of the standards is the responsibility of the Department of Trade and this is outstanding for several machinery related standards (including EN 15746-2:2020).</p> <p>The RIS calls up the latest published standard.</p>
423	126	9.3.1.2	I appreciate this is direct copy from Issue 6, but should more things also be added to the list where 1530 takes precedence, such as: dynamic stability; lighting; position of Estop etc?	Rewrite after further thought	10	NC			To consider at a future revision when the designated status of the ENs is resolved.
424	126	G9.3.1.8	BS EN 280-1:2022 is not a harmonised standard.	Change requirement to current standard of EN 280	5	NC			The designation of the standards is the responsibility of the Department of Trade and this is outstanding for several machinery related standards. The RIS calls up the latest published standard.
425	126	G9.3.1.8	EN280 permits self certification of MEWPS without the involvement of an ApBo providing all clauses are met.	Add to clause Self certification by the manufacturer as compliant with the current version of BS EN280-1 providing all clauses are met in full.	5	DC	125	G 9.3.1.9 c)	G 9.3.1.9 c) amended to read: <i>Self-certification by the manufacturer as compliant with BS EN280-1:2022, providing all clauses are met in full.</i>
426	127	9.3.2.1	Will NR issue derogations against this clause? Historically, many derogations have been granted against this requirement (or similar) If this is the intent, remove the requirement.	Remove clause or apply requirements without derogation.	5	NC			Network Rail have not requested removal of this clause. The issuing of derogations is a contractual matter with Network Rail.
427	128	9.4.1.1 and 9.4.1.3	The two clauses contradict each other. 9.4.1.1 refers to attachments that affect stability	Remove 9.4.1.1	3	NC			Requirements unchanged from issue 6.

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			being used without an RCI, and then 9.4.1.3 says that the user manual must tell the operator to use an RCI when using attachments that affect stability. The only difference is that 9.4.1.1 refers to attachments that “affect stability” and 9.4.1.3 refers to attachments that “significantly affect stability”, however “significantly” is undefined and impossible to interpret.						
428	128	G9.4.2.4	It is good practice to demonstrate compliance to BS EN 280-1:2022, and where appropriate BS EN 280-2:2022, with the specific machine that the attachment is intended to be used on	Good practise yet 9.4.2.1 states that 9.3 applies ?	11	NC			The emphasis here is for the demonstration to be carried out with each machine type the attachment is intended to be used on.
429	131	9.5.3.4	The clause says that stability of knuckle boom cranes must be calculated according to EN 12999. However EN 12999 doesn't give any requirements for stability calculation, and instead relies solely on testing.	Remove the requirement to undertake stability calculations for knuckle boom cranes.	3	DC	130	9.5.3.4	Text amended: <i>The calculations or verification testing shall be made in accordance with the appropriate standard: ...</i>
430	132	9.5.5	Clause 9.5.5.2 says that where the RCI does not show the load to the operator when digging then the calculation must show that the machine can't turn itself over when digging. Almost all diggers can turn themselves over when digging, therefore they must have an RCI showing the load to the operator when digging. However, there is widespread belief in the industry that excavators that are only used for digging (“dig-only machines”) do not need an RCI.	Clarify in the standard that machines used for digging that are capable of turning themselves over must have an indication of the load displayed to the operator via the RCI. Specify a Performance Level for the system in table 3. Suggest PLc.	3	NC			The requirement is unchanged from issue 6.
431	134	9.5.6.6	EN 280-1:2022 is not a Designated Standard EN 12999:2001 is an out of date reference.	Correct the reference dates	3	DC	133	9.5.6.6.	The designation of the standards is the responsibility of the Department of Trade and this is outstanding for several machinery related standards. It is considered appropriate to work to the latest standards, despite EN 280-1:2022 not being designated. Corrected EN 12999:2011.
432	134	9.5.6.6 9.6.3.3	Table 9 and clause 9.6.3.3 say that SWL must never be lower than 500kg. It is not clear why this is the case. A load of less than 500kg can be accurately measured by the RCI and safely lifted by the machine. Should the requirement be that the wheel load must be greater than 500kg when the SWL is applied? (this would be consistent with EN 15746-1 clause 5.5.4.2 and with backward stability requirements).	Remove 500kg minimum SWL requirement. Possibly replace with requirement that, when lifting the SWL, wheel load is always greater than 500kg.	3	NC			The requirement is unchanged from issue 6.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
433	135 139	G9.5.6.16 G9.6.3.10	Sliding shims in and out of the space between the wheel and rail of a suspended excavator doesn't sound very safe.	Remove guidance	3	NC			The guidance is unchanged from issue 6.
434	135	G 9.5.6.19	Inhibiting stabiliser movement when the lifted load is in excess of the non-stabiliser SWL is a mandatory requirement in clause 9.5.6.8. Therefore it is not just "best practice", it is mandatory for compliance.	Remove guidance.	3	NC			The guidance is unchanged from issue 6.
435	137	9.6.2.2 b)	Part a) of the clause requires tip testing and then setting of SWL to 67% of tip figure. Part b) of the clause requires an additional method of demonstrating prevention of derailment. G 9.6.2.3 says that the clause is consistent with BS EN 15746-1:2020. Clause 5.5.4.2 of BS EN 15746-1:2020 states that the 67% SWL criteria is sufficient on its own. Therefore RIS-1530-PLT issue 7 clause 9.6.2.2 part b) is not required in order to be consistent with EN 15746-1:2020. The items listed in part b) of the clause are not commonly applied by the OTP industry; the 67% SWL criterion has been proven to be sufficient on its own (hence EN 15746-1 clause 5.5.4.2 provides it as an alternative to 5.5.3.1). The "validated models" referred to in the guidance note of G 9.6.2.5 may exist for rolling stock, but they do not exist for OTP.	Remove part b) of the clause.	3	DC	136	9.6.2.2 a)	Looking at BS EN 15746-1:2020, agree with comments. Changed 'and' to 'or' at the end of 9.6.2.2.a).
436	138	9.6.3.2 and 9.6.3.3	We believe that these clauses allow too little safety margin in terms of wheel loading in the worst case conditions. In the event of a 500kg SWL the 33% safety margin is only 246kg between the maximum loading before tipping and the allowable value. By experience this is insufficient to deal with external factors that are not considered by the standard, a prime example being wind loading.	The standard be changed such that the difference between the load that causes tipping and the stated SWL be the largest of the 33% down rate and 500kg. The 500kg value has been found empirically to be roughly correct for the general size of lifting RRVs.	12	NC			The two clauses do already require the larger of the 33% down rating or the 500 kg value to apply.
437		9.7	machines built prior to 2016 can have PLC RCI fitted	This means that a machine being upgrade can have a new RCI to PLC fitted where a newer machine has to be PLd This could mean here are two types of RCI system in use	13	DC	58	Table 3	Table 3 has been amended to remove the option for the lower performance pre 2016 RCIs. Line 9.7 deleted 'for machines constructed after January 2016'.
438	140	9.7.1.1. a)	The clause says that only MEWPs that comply with EN 280:2022 don't need an RCI. RIS-1530-PLT does not require all machines to comply with EN 280-1:2022, and EN 280-	Remove year from reference.	3	DC	139	9.7.1.1 a)	Reference changed to EN 280-2:2022. This new part specifically covers MEWPs used for lifting.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
			1:2022 is not a designated standard (see above). It would not be appropriate to fit an RCI to a MEWP, even if the MEWP was compliant with an earlier version of EN 280.						
439	140	9.7.1.4	Many RCIs now provide a linked machine tandem lift function (e.g. as developed by GOS and GKD). Machines fitted with this function do not downrate the tandem lifting duties. Network Rail have provided derogations against this clause to allow the use of this technology. Given that this technology is now widely in-service, 1530 should provide requirements and allowances for it, so that the industry is not relying on derogations to allow use of the technology.	Update clause to allow non-downrated tandem lift function when machine control is linked. Provide the requirements for machine linked control.	3	NC			There is currently no agreed process to functionally check the linked RCI on individual machines (or pairs of machines). This is being investigated by the M&EE Lifting Group with the intention of including something in COP0008. When the verification testing for first in class and subsequent machines and the parameters around the use of linked RCI are agreed then this could be included as an update to RIS-1530-PLT. In the meantime, G9.7.1.16 was included to recognise that linked tandem lifting systems are available.
440	140	9.7.1.4	New technology allows for a wireless tandem lift system which allows each machine to control each other RCI systems and does not require derating of the machine. This is currently implemented on several machines but requires a derogation against the current issue of RIS1530.	Include a further option that states “Where the facility is provided, the RCI shall be equipped with an approved wireless linked tandem lift system. Which requires no reduction of the SWL of the individual lifting duties”. (MD)	7	NC			There is currently no agreed process to functionally check the linked RCI on individual machines (or pairs of machines). This is being investigated by the M&EE Lifting Group with the intention of including something in COP0008. When the verification testing for first in class and subsequent machines and the parameters around the use of linked RCI are agreed then this could be included as an update to RIS-1530-PLT. In the meantime, G9.7.1.16 was included to recognise that linked tandem lifting systems are available.
441	140	9.7.1.4	Where the facility is provided, the RCI shall be equipped with a tandem lift operation mode giving a reduced SWL of 67% of the individual lifting duties;	this clause states when tandem lifting the RCI has to down rate to reduce the SWL with Linked RCI this does not happen. The detail of requirements for linked RCI does not state this will not apply. There needs to be detail of link RCI requirements.	13	NC			There is currently no agreed process to functionally check the linked RCI on individual machines (or pairs of machines). This is being investigated by the M&EE Lifting Group with the intention of including something in COP0008. When the verification testing for first in class and subsequent machines and the parameters around the use of linked RCI are agreed then this could be included as an update to RIS-1530-PLT. In the meantime, G9.7.1.16 was included to recognise that linked tandem lifting systems are available.
442	141	G 9.7.1.9	OLE Duty charts – remove and change to	Instead of OLE Duty should the OEM / Convertors draft up and include guidance drawings in the machine manual for different Boom / Arcs of operation for the machine at the minimum wire height. Similar drawings are already provided for transport, gauging etc and machine working range.it would be simple to include and zone type shading above and below the minimum wire height.	8	DC	140	G 9.7.1.9	Guidance amended as suggested: <i>Variables that could cause variation of the SWL relate to the angular position of the machine, such as, cant and gradient and the height of the boom and its geometry are restricted when working under OLE. It is good practice to include drawings in the instruction handbook of the orientation of the booms and arcs of movement when working under OLE.</i>
443	141	G9.7.1.15	Where an RCI is modified or recalibrated, it is good practice to ensure that the central RCI databases are updated with the appropriate lifting chart details. This is the responsibility of the machine owner or operator, although it is good practice for the PAB to check both the	PAB is only supplied Electronic copy. It is the upgrader/owners obligation to ensure commonality of any hard copies. Guidance clause in 1710 is for First of types not the database requirements.	11	NC			The first part of the guidance is to communicate the changes to the corresponding databases of lifting charts. The reference to RIS-1710-PLT is included to remind that changes or recalibration of the RCI effectively creates a new first in class when implemented on the first machine.

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			paper and electronic duty charts for consistency. RIS-1710-PLT gives guidance in this area (for example, see clause G 3.2.7.7 of RIS-1710-PLT Issue 2.1).						
444	141	G9.7.1.16	<p>We think it is unwise to allow tandem lifts with linked RCIs to operate without mandated down rates. The current wording would allow 0% down rate on a linked RCI lift.</p> <p>Given that standard RCI systems have no way of detecting out of plane (lateral) forces this is extremely risky. It is easy to foresee a scenario where one of the linked machines is able to pull the other machine over without the RCI ever detecting that the machine has become unstable. This would represented a real and present risk to life and significant asset damage.</p>	<p>We strongly recommend that all tandem lifts include an additional down rate from single machine lifts.</p> <p>The only mitigating scenario would be in the case that the RCI system is able to detect both lateral and vertical forces and ensure that both machines remain stable at all times.</p>	12	NC			<p>There is currently no agreed process to functionally check the linked RCI on individual machines (or pairs of machines). This is being investigated by the M&EE Lifting Group with the intention of including something in COP0008.</p> <p>When the verification testing for first in class and subsequent machines and the parameters around the use of linked RCI are agreed then this could be included as an update to RIS-1530-PLT.</p> <p>In the meantime, G9.7.1.16 was included to recognise that linked tandem lifting systems are available.</p>
445	141	9.7.2.3	<p>“The change from road to rail mode or vice versa shall automatically default the RCI to lift mode.”</p> <p>On / Off tracking whilst performing a lifting operation. Example – Piling hammer attached to machine during road- rail transition. In this situation neither road or rail modes correctly accommodate this lifting operation. It should be proven by testing /checking stability whether a ON tracking mode is required to manage on tracking whilst lifting a cantilevered attachment load.</p>	<p>Insert – 9.7.2.3.1</p> <p>“ The RCI shall be programmed to automatically switch between road and rail modes or if proven to be required by test, ON Tracking restricted capacity mode in order to safely manage the lift during the transitions between road and rail modes”</p> <p>(GD)</p>	7	NC			<p>Section 9.4 recommends the RCI remains operational when the machine is fitted with attachments that can affect the stability of the machine.</p> <p>The associated instruction handbook should include what machine types the attachment is intended to be used on. The instructions should include how the machine/attachment should be on and off tracked and detail any limitations on cant and gradient at the RRAP.</p>
446	142	9.7.2.8	This clause should be relocated to section 10 with the other user documentation clauses	Relocate clause to section 10	5	NC			This clause is setting out the requirement. Section 10 is about collating all the information together.
447	144	G9.7.4.6 and G9.7.4.10	The guidance says it is “good practice” to allow the machine to move to a higher SWL/lower overturning moment position, but clause 9.7.4.4 says it is mandatory. The guidance is therefore confusing.	Remove guidance.	3	NC			The guidance is included to explain the requirement and have been carried over from issue 6 to aid the reader of the document.
448	145	9.10.1	It is common for Auxiliary Lifting Points to be added to machines as an engineering change. The way the clause is written, and taking account of G 9.10.12, only the original converter is able to do this. It is not clear why the original converter would be competent to add an ALP, but another RRV converter would not. G 9.10.13 says that where the manufacturer is no longer available then the lifting point can be assessed by a competent body, but “competent body” is not defined.	Update to state that lifting points added to the machine must be assessed by a PAB.	3	DC	145 238	G 9.10.13 Definitions	<p>Change all competent body references (3) to competent engineer.</p> <p>Added new definition:</p> <p>Competent Engineer – For the purpose of this document a competent engineer fulfils the role set out in RIS-1710-PLT.</p>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
449	152	10.1.1.3 o)	Clause 5.7.6.6 mandates a parking brake. It is not clear why fitment of a parking brake would need the statement “Where the components are of a destructive design, the vehicle shall not be moved on rail until the damaged components have been replaced and the affected system(s) proved to be operating correctly” Not all parking brakes are of a destructive design.	Only mandate the statement in the manual if the brakes actually are of a destructive design, not just for any machine fitted with a parking brake.	3	DC	151	10.1.1.3 o)	Changed to refer to 5.7.6.17.
450	152	10.1.2.2 g)	It is not clear when this would be applicable, as headlights are required to be able to illuminate as far as the maximum stopping distance. It is also not clear how an operator would decide at what point it becomes “night time”. Also, the available ambient light is not necessarily only a function of the time of day.	Remove	3	DC	151	10.1.2.2 g)	Changed to “in reduced visibility”.
451	153	10.1.2.3 b)	It is not clear what is meant by this. Some machines can be used without restriction on switches and level crossings. “Circulate freely” is also not a term widely used in the railway.	Remove	3	DC	152	10.1.2.3 b)	Changed to “travel or work”.
452	153	10.1.3.1 k)	It is not clear why an operator would need to know this. As long as the maximum wheel load is less than the required maximum given in table 1.	Remove	3	NC			This requirement is unchanged from issue 6.
453	154	10.1.3.1 l)	Sections 5, 6, 7, 8 and 9 do not say how to determine the category of line. The clauses is therefore not applicable.	Remove	3	DC	152	N/A	Item l removed from list.
454	155	10.1.3.8	Giving brake test results for every machine would require the maintenance manual to be up-issued every time a new machine is manufactured. This is not feasible.	Provide brake test results for First of Class machine only.	3	NC			This requirement is unchanged from issue 6. Where the individual machine test results differ from the First in Class values, they could be contained in a separate document that is referenced from the maintenance manual.
455	155	10.1.3.12	There is no need to state this. It is a redundant statement. All functions of the machine that have some element of human interaction require the human in question to have the physical capability of interacting with that function. Also “normal hearing ability” is undefined and therefore subjective.	Remove	3	NC			This requirement is unchanged from issue 6.
456	155	10.1.3.14	This is not possible to state. It can be anywhere from zero to many hours, depending on the work being undertaken.	Remove	3	NC			This requirement is unchanged from issue 6.
457	156	10.1.5	This section talks about a ‘Use of Plant Safety Plan’ (also referred to earlier in 5.2). But there is no definition or actual requirement to provide one.	Add requirement to produce UoPSP	10	DC	155	10.1.5	Section title changed to ‘Use of Plant Safety Plan’.

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458	156	10.1.5.3	1530 is not referenced in plant safety plans. The wording relating to this is therefore superfluous.	Remove wording	5	NC			This requirement is unchanged from issue 6.
459	156	G10.1.5.6	For example, it is good practice for information to be provided stating the personal protective equipment (PPE) considered necessary after the hazards have been reduced by the design review process	10.1.1.2 states that PPE should be listed therefore it is not good practise it is obligation.	11	DC	155	N/A	Guidance clause deleted.
460	157	10.2.2.1	The maintenance instruction shall be a controlled document	There is not an identical requirement for Instruction Handbooks and as a PAB there has been pushback from some customers. This should also be a requirement of 10.1 and 10.2 or made generic requirement of section 10 along with document review.	11	DC	155 169	10.2.1.3 10.3 10.3.1 G 10.3.2 G 10.3.3 G 10.3.4 G 10.3.5	Requirement 10.2.2.2 moved to 10.2.1 as new 10.2.1.3 New section created 10.3 Documentation: 10.3.1 The instruction handbook and maintenance instructions shall be a controlled document. G 10.2.2.3 has become G 10.3.2 G 10.2.2.4 has become G 10.3.3 G 10.2.2.5 has become G 10.3.4 G 10.2.2.6 has become G 10.3.5
461	159	10.2.5.2	This contradicts 10.2.5.1, which allows the host machine maintenance manual to be referenced from the RRV converters manual, rather than a single unified document.	Remove	3	DC	157	10.2.4.1 G 10.2.4.3	Changed to: <i>Where the machine is based on a host machine, either:</i> - <i>Maintenance instructions for various component parts of a machine (for example the host machine, auxiliary engine and rail conversion) shall be combined to form a unified instruction with consistent interval frequencies; or</i> - <i>The maintenance documents of the host machine shall be referenced.</i> And Guidance changed to read “it is preferable”.
462	165	10.2.9	There have been a number of instances of machines running away in road mode. Road mode parking brakes should be tested as part of the maintenance regime.	Add road mode park brake test requirement.	3	NC			10.2.9.3 requires the testing of all brake systems fitted and as such this would include testing the road mode parking brakes.
463	165	10.2.9.3	The Network Rail plant manual states that 9B machines must have a three monthly torque test. Stating annual brake test causes inconsistency.	Mandate three monthly torque testing of 9B RRVs.	3	DC	164	G 10.2.8.8	RIS-1530-PLT sets out minimum requirements which are intended to be consistent with the ENs. This does not prevent any user from imposing more stringent requirements. G 10.2.8.8 amended: “Whilst the minimum requirement is for an annual brake test, for some machine types, such as Type 9B machines the maintenance instructions may specify more frequent testing of the rail wheel brakes.”
464	166	G10.2.9.12	6%gross vehicle mass is the theoretical deceleration to achieve the maximum allowable stopping distance at 10mph, but this gives no allowance for any degradation, and should therefore not be used as a maintenance limit (the brakes shouldn't only comply on the day maintenance is undertaken, they should comply between maintenance intervals). Also, trailer brakes do not apply instantly due to air propagation,	Increase required to force to: - Take account of air propagation time Allow for degradation between maintenance.	3	NC			This guidance is unchanged from issue 6.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
			therefore at 6%GVM the stopping distance would not be complied with in practice.						
465	172	App A	Track twist is where one wheel is effectively in a dip, as shown in Figure 21: a) The long wavelength track twist is applied over the wheelbase of the machine; and b) The short wavelength discontinuity can occur at any position relative to the machine as the machine moves over it, and simulates a 20 mm dip.	Use of ' ;and ' doesn't add clarity as the supporting document states adds. If this has been driven by ME&E then rationale needs to be added.	11	NC			This is RSSB 'style' to clarify that both items in the list apply together.
466	172	Appendix A	I thought the twist allowance was increasing but the 1/150 calculation is the same.	GOS are not asking for increase but allowance for older machines should be included if it is increased.	4	NC			The proposal to increase the twist value to 1 in 90 was rejected when the draft document was presented for approval to go out for consultation at PLT SC meeting on 3 rd May 2023. The consensus decision by the committee was to retain the current 1 in 150 twist value and superimposed 20mm dip as being the requirement for track twist geometry.
467	172	Appendix A	NR/L2/TRK/001/mod11 allows for up to 1:90 track twist over a 3m span for a critical action limit (matching 1530) this is equivalent to a 33mm not 20mm. If we use the 1:300 as the remaining twist over a 6m wheelbase that is 43mm not the 40mm from the 1530 calculations after this, it remains a constant 3mm.		9	NC			The proposal to increase the twist value to 1 in 90 was rejected when the draft document was presented for approval to go out for consultation at PLT SC meeting on 3 rd May 2023. The consensus decision by the committee was to retain the current 1 in 150 twist value and superimposed 20mm dip as being the requirement for track twist geometry.
468	172	Appendix A A.1	The clarification of the 20mm rail drop has caused additional confusion within our team compared to the previous wording. It took as a while to work out that the result was unchanged.	Consider improving the wording of the clarification or the section as a whole.	12	DC	170	Appendix A A.1	Text amended <i>The applicable track twist geometry is where one wheel is effectively in a dip, as shown in Figure 21.</i> Hyperlinks added to all Appendix Notes.
469	173	Appendix B	Missing requirement (or information) that Z should be taken as numerical value 9 for the check digit calculation	Add information to 4 tables that Z = 9	10	DC	171	Appendix B	Added at start of Appendix.
470	173	Appendix B	Now with Brexit should we take the opportunity to simplify our national numbering system?	Discuss/debate option to delete 99709 (ZZ709) and the last check digit and simply have a 6-digit machine number (boxes a to f in tables)	10	NC			This is a decision that would need to be taken by Network Rail as they manage the allocation of the machine numbers.
471	176	App C	ZZ Numbers	Explain the rationale and reason why – will we have to re-number all existing OTP ?	8	NC			The adoption of ZZ instead of 99 is in line with the latest number format set out in BS EN 15746-1:2020 and prEN 15955-1:2022. The ZZ was chosen to identify items of plant that are not permitted outside a possession.
472	176	Appendix C	The data panel asks the question “may be used under LIVE overhead lines”.	Minimum LIVE contact wire height This would align with 5.19.3.1 b)	6	DC	174	Appendix C	As suggested the minimum live OLE height has been added to the data panel The process of being on and off tracked can temporarily increase the height of the machine above that when rail mounted. In these circumstances the minimum OLE needs to be higher (max machine height plus 600 mm) to allow safe on and off tracking.
473	176	Appendix C	The yes or no capabilities shall provide both option for figure 22&23 in order to provide the only valid options.		9	DC	174	Appendix C	Added “Yes/No” to Figures.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
474	176	Appendix C	shall the data panel have mph and km/h?		9	NC			For consistency with existing machines the data panel displays speeds in mph also railway speeds are still specified in mph.
475	176	Figure 22 and 23	Non service braked towed load is missing “May be used under live overhead lines” – this may be different in working, travelling and on/off/tracking mode. A single line is not sufficient to give this detail. Towing speed not shown. working speed not shown. Maximum on/off track gradient not shown.		3	NC			Not changed from issue 6. Will consider for 12m review.
476	182	Appendix E	Task E.2. doesn’t require the flange height and width to be measured, and compared to the table 4, as required by clause 5.21.3.4. The job just says to check “flange wear” is less than 4mm.	Update job E.2 with task for measuring flange height and width and comparing to table 4.	3	NC			This appendix is provided as an example of suggested layout for the documentation and is not changed from issue 6.
477	189	Appendix F	Admittedly this is a mistake carried over from the Euronorms, but the final column is titled incorrectly. Measurement is carried out in column 3	Retitle column 6 to: Specific verification (ie delete “ / measurement”	10	NC			Retained for consistency with EN table format. To be changed at 12m review when hopefully EN 15955-1:2024 will be available with Annex B correctly labelled.
478	213	Appendix H	ECC shouldn’t have NR logo on it. ECC should be issued in accordance with RIS-1710-PLT, not RIS-1530-PLT.	Update	3	DC	211	Appendix H	All badges removed.
479	213	Appendix H	Why has the example ECC been rebadged to Network Rail. This is an RSSB standard and the procedure for checking compliance (RIS 1710) is an RSSB standard. Therefore the example ECC should be badged RSSB (for use by any IM)	Rebadge ECC with RSSB logo	10	DC	211	Appendix H	The ECC will be issued by a UKAS accredited PAB. UKAS have restrictions on branding on certificates and as such the RSSB has been removed. Note changed to <i>This appendix provides the layout of an ECC in support of section 3.1</i>
480	216	App H	States Aegis PAB Signatory	Remove AEGIS Reference from Cert Signatory.	11	DC	211	Appendix H	AEGIS branding has been removed.
481	216	App H	Sample ECC	Previously in RIS-1530-PLT references were generic such as **mm or **Kg. Scope of work box in Issue 6 was: <i>Guidance note : First item – to reference last full certification assessment standard. Then detail scope of work for this certificate, including clearly the issue number of RIS-1530-PLT and what has been assessed</i> The sample Cert needs to be made generic and not reference Colmar and AJH manuals in other sections such as the data panel the standard goes to the extend of Philquote; this needs to be carried through the document.	11	DC	211	Appendix H	Layout of certificate has been anonymised.
482	216	Appendix H	The wording used in supplementary information 5 should not be used. This is	Remove	3	DC	211	Appendix H	Supplementary information has been anonymised.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
			wording left over from 1530 issue 5 or earlier when NR approved MLDs.						
483	217	Figure 26	<p>The figure requires the park brake connectors on the towing machine not to be fitted with self sealing valves and instead to be fitted with plugs chained to the headstock.</p> <p>The chains break and the plugs go missing, meaning that it is not possible to seal the line and the breakaway alarm sounds continuously.</p> <p>It is clear why the trailer must not be fitted with a self sealing valve, but It is not clear why the park brake connector on the machine cannot be fitted with a self-sealing valve. If the trailer breaks away then the hose will tear, rather than the male connector being pulled out of the female connector; this will lead to low air and a breakaway alarm. In the extremely unlikely event that the male connector was pulled out of the female connector then the breakaway alarm may not sound, but the trailer brakes would apply, which is the primary risk control. If the whole male/female connector assembly was ripped from the headstock (again unlikely) then the trailer brakes would apply and the breakaway alarm would sound</p>	Change connector on towing machine to be fitted with self-sealing valve.	3	NC			<p>A self-sealing valve must not be fitted to the parking brake coupling as the application of the parking brake is reliant on the venting of the air pressure.</p> <p>Fitting a self-sealing coupling would prevent the parking brake applying if the BS AU 138 a connector is disconnected with the parking brake air line is still pressurised.</p>
484	221	K.3.1	We have found the 120kN load value for cranked drawbars to be impractical to reach.	Consider lowering the requirement for drawbars, particularly for cranked geometries.	12	NC			The values are consistent with prEN 15955:2022 and unchanged from issue 6.
485	222	K.5.1	Ambiguous; a clause should not reference a guidance note.	Make guidance note part of the clause.	4	DC	219	K 5.1	Deleted 'Except as set out in G K.5.5'.
486	222	GK.5.7	To facilitate the connection of the towing adaptor between couplers at different heights is permissible to enlarge the 40mm diameter eyes to provide additional articulation when connected	<p>Agree there is maybe a need to allow 50mm eyes, but would it not be more productive to give a preferred design height for the towing eyes on OTP, one that reflects the towed loads (trailers / brushes etc) and maintain a "Level" tow bar.</p> <p>The increase in articulation will in time result in "de-railment" the same as "Z bars" did with Unimog's when shunting large payloads.</p> <p>As an industry we have also spent the last 7 /10 years moving away from 50mm towing eyes to meet the standard.</p> <p>Secondly, the 40mm eye is the chosen size of the coupling manufacturer and standard across the commercial (LGV/HGV) industry – has consideration been given to the increased</p>	8	NC			<p>Feedback from the RPA has identified a need to enlarge the 40mm eye when coupling between dissimilar height connectors to reduce the risk of wheel unloading/derailment. The guidance is not advocating the use of the 50mm eyes.</p>

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
				stresses and strains that may transfer to the coupler when using a 50mm eye?					
487	223	K7	Tow bars should not have holes in them to prevent them corroding from the inside.	Add requirement that towbars must not have holes allowing water to enter the inside and corrode the towbar.	3	DC	220	G K 7.7	Suggestion added as guidance: G K 7.7. When constructed from hollow sections it is good practice to ensure that the towbar assembly does not permit water ingress, to avoid internal corrosion.
488	224	Appendix L	I appreciate that this might be too late for inclusion at the consultation phase but a much improved Noise Test Code appendix is now include in the latest draft of prEN 15955-2 (post the Enquiry stage).	Rewrite Appendix L in line with May version of prEN15955-2	10	NC			To be considered at the 12m review, when hopefully EN 15955-2:2024 will be published.
489	232	App M, M3	Why Hand-arm vibration is relevant for OTP? As far as I am aware they are not hand-held tools	eliminate	9	NC			Not changed from issue 6.
490	235	N.1.1i)	A threshold value is not stated.	State the required limit of Wc.	4	NC			The wording is consistent with the specification from prEN 15595-2:2022
491	237	App P	Note: This Appendix provides guidance in support of section 5.9 of this document, consistent with the requirements set out in prEN 15955-2	Should this not make reference and align to the Network Rail Specification document ? To prevent possibility of conflicts of approval.	11	NC			Network Rail are carrying out investigations into the obstacle detection systems. NR have not finalised an engineering specification. When available this could be included in a revision to RIS-1530-PLT. In the meantime, RIS-1530-PLT has used the specification from prEN 15595-2:2022 which reflects the latest European requirements.
492	237	GP1.3 a	ii) States - Machines – medium consequence. Machines are not medium consequence as they could and will often be carrying a person and even more so if a MEWP or trolley	i) Debris or other obstructions (such a animals) – Low consequence ii) Stabled Machines / Wagon / Track Furniture – Medium Consequence iii) Operating Machines / Track Trolleys – High Consequence iv) Persons – High Consequence	8	NC			The wording is consistent with the specification from prEN 15595-2:2022 which reflects the latest European requirements.
493	237	GP 1.3 b	ii) weather conditions	Should there be guidance on the increased stopping distances in rain / snow and adverse weather	8	NC			The wording is consistent with the specification from prEN 15595-2:2022 which reflects the latest European requirements.
494	237	GP.1.3 b	vi) Additional systems to locate all machines / personal equipped with protection system on site	Add in that there will be a given / set type of connection IE beacon plug / seven pin plug etc. This will be used to power such systems and fitted to all OTP. Also, a set position for the system to fit / be located – often the likes of the My Zone / GKD proximity systems are fitted last minute on site and fitted as and where they can, either cable tied or hanging off the back of the cab, which could easily affect / restrict the operation.	8	NC			The wording is consistent with the specification from prEN 15595-2:2022 which reflects the latest European requirements. How collision avoidance systems are integrated into the machine is outside the scope of this document. More information may become available following the Network Rail trials and if they issue a more detailed specification. When available this could be included in a revision to RIS-1530-PLT.
495	238	GP.3.1 b	Detecting an obstruction such that it is possible to stop the machine before the obstruction at the chosen max speed	Maximum Speed in a worksite is 5mph unless the ES agrees to send and receive.	8	NC			The wording is consistent with the specification from prEN 15595-2:2022 which reflects the latest European requirements.

No	Page	Clause	Comment	Suggestion	By	Way forward	Page	Clause	Response
				Braking and stopping distances should align with table 2 relative to the set speed Look to increase the measuring distance and initially limit the speed of the OTP Has consideration been given to “Hi Vis” recognition appose to obstacle – the Quarry Industry have systems that recognise the outline of Humans and Hi Vis jackets / vests and use Radar systems, which may be worth investigation					More information may become available following the Network Rail trails and if they issue a more detailed specification. When available this could be included in a revision to RIS-1530-PLT.
496	238	GP.3.3	Acoustic or Optical warning	GP.6.1 contradicts this as it states both acoustic and optical	8	NC			GP 3.3 is about warning the permitted speed of the machine is being exceeded. GP 6.1 is about providing alerts when an obstacle has been detected.
497	238	GP.3.3	Optical warning	What colour?	8	NC			This is not defined and could be message on a display. More information may become available following the Network Rail trails and if they issue a more detailed specification. When available this could be included in a revision to RIS-1530-PLT.
498	238	GP.4.6	Monitor inside the cab	There are too many monitors in the cab already and NWR are looking into this as is becoming constricted inside the cab. Plus the monitor on the ODS currently available will block the drivers line of sight due to size	8	NC			This wording is consistent with the specification from prEN 15595-2:2022 which reflects the latest European requirements. How collision avoidance systems are integrated into the machine is outside the scope of this document. More information may become available following the Network Rail trails and if they issue a more detailed specification. When available this could be included in a revision to RIS-1530-PLT.
499	239	GP.5.1	3dB louder than the machine noise	Horns have to be minimum 10dB louder, should this not be the same	8	NC			The wording is consistent with the specification from prEN 15595-2:2022 which reflects the latest European requirements to indicate the machine is about to move. The note permits the use of the louder warning horn.
500	239	NOTE	The maximum stopping distance for a speed of 5kph is 4m	This should be the same as the 6 kph stopping distance of 5m	8	NC			The wording is consistent with the specification from prEN 15595-2:2022 which reflects the latest European requirements.
501	109	Table 10	Editorial comment. Table unnecessarily split across two pages	Start Table 10 on page 110	10	DC		various	Page breaks have been reviewed through the amended document and adjusted where necessary.
502	111	9.7.1.2	Editorial comment. Unnecessary new page after 9.7.1.2	Delete page break after 9.7.1.2	10	DC		various	Page breaks have been reviewed through the amended document and adjusted where necessary.

3. Collated consultation comments and responses