

Tree risk evaluation and control by non-arboriculturist railway personnel (THREATS-NRP)



ELR	Mileage	Location / address	Name	Date
	mm.yyyy			dd.mm.yyyy

Basic hazard indicators for non-arboriculturists (indicators 3, 7, 8 & 9 of particular significance where present on or near the stem): 1) Recently altered exposure (e.g. singled tree). 2) Apparently unstable rootplate (including severed or lifted roots & soil cracks). 3) Visible cavities. 4) Compression forks. 5) Trauma (including broken or hanging branches & lightning strike). 6) Tree death / crown decline (including missing, poor or wilting foliage & large dead branches). 7) Dead, peeling or missing bark. 8) Exudates & lesions. 9) Fungal structures (wood decay fungi)

1] Failure Score for identified tree defect (Refer to hazard Indicators, above)

Score	•	Likelihood of failure	Decision guide to defect selection against failure likelihood
50		Imminent/Immediate <i>Definitely apply to:</i> <i>Possibly apply to:</i> <i>Do not apply to:</i>	- Ind. 2 if appears recent (altered angle or soil heave!), esp. if tree in leaf & after heavy rain &/or high winds (F6) - Ind. 4 is present as a split fork & pale or dark brown wood is visible within the split, or the tree is in leaf - Ind. 1 (if recent), 3 (if v. severe), 5 (if nothing impedes future descent of broken / hanging wood) - Ind. 7, 8, 9 (for 9 unless profuse, then possibly applies especially if sounding suggests severe decay)
8		Probable/Soon	Any of indicators 1 – 9 though not ind. 5 if apparently historic or ind. 3, 6, 7 & 8 if apparently localised / minor
2		Likely, foreseeable	Ind. 5 if apparently historic & ind. 3, 6, 7 & 8 if apparently localised/minor; min. score if inspection prevented by ivy
0		None	No defect apparent

2] Railway Target Score – Select one based on highest value of at-risk target

NOTE: Requires estimation of tree height to identify fall radius – **if in doubt** assume 20% taller than best guesstimate

Score	•	Value	EITHER: Maximum Linespeed mph (single line)	OR: Multiple lines (exc. sidings) Max linespeed	Multiple lines	OR: Other structures at risk
40		Very high	90+	60+	2 or more	Signal box / Station building
25		High	60 – 89	30 – 59	2 or more	Transformer / Platform
20		Medium	30 – 59	<30	3 or more	OLE Gantry / Signal
15		Low	<30	n/a		OLE inc. Return / Stock fence
7		Very low	<30 freight	n/a		n/a
0		No railway impact foreseen: refer for expert inspection using THREATS except score 50 at section 1 then assume score 20 minimum				

3] Target Impact Score

NOTE: Requires estimation of diameter of tree part expected to impact target – **if in doubt** assume one category larger than best guesstimate

Score	•	Max. dia. [mm] of impacting part		Likely extent of harm – examples
		EITHER: Absolute	OR: Score 10 for the following size / feature correlations	
10		>750 mm	≥150mm For 90mph + if within 800m of: ☐ Switches & Crossings ☐ Embankments ☐ Significant trackside structure	Very severe damage to train; serious injury / fatality to crew or passengers and/or derailment highly probable
6		350-750 mm	>350mm For 60-89mph if within 400m of: ☐ Switches & Crossings ☐ Embankments ☐ Significant trackside structure	Severe damage to train; serious injury to crew or passengers / derailment probable Severe disruption to OLE
4		150-350 mm	>350mm For 30-59 mph if within 200m of: ☐ Switches & Crossings ☐ Embankments ☐ Significant trackside structure	Damage to train; injury to crew / derailment possible Disruption to OLE
1		<150 mm	n/a	Minor damage to train; injury/derailment not expected
0		No target observed		

4] Risk Evaluation Sum:

FAILURE SCORE _____ × RAILWAY TARGET SCORE _____ × TARGET IMPACT SCORE _____ =

5] Appropriate Response:

Score range	•	Threat Category	Report time	Risk Control: precautions & reinspection	Action Code
4000+		7- Extreme	NOW	Protect traffic (railway closure or linespeed reduction); emergency call-out of contractors	E
2001-3999		6- Serious	24H	Protect traffic (linespeed reduction or Watchman); remediate within 7 days	7D
1000-2000		5- Significant	72H	Decide if protection appropriate (inc. linespeed reduction); remediate within 4 weeks	4W
330-999		4- Moderate	7D	Remediate within 13 weeks; reinspect after severe weather events prior to remediation	13W
1-330		3, 2, 1	14D	Reinspection within 52 weeks (or after severe weather events beforehand)	52W
0		No work required; manage as per NR/L2/TRK/5201			

6] Work Required:

Treatment	•	Summary
Arb. inspection		Habitat trees or trees of high landscape value except where scored 50 at section 1 or where outcome is Category 6 or 7
Tree removal		Takedown and fell to ground level

Tree risk evaluation and control by non-arboriculturist railway personnel (THREATS-NRP)



The recognition of potentially hazardous trees

Tree condition assessment is a highly specialised activity that requires training, qualifications, and experience

If in any doubt, always consult an expert

The diagram describes a number of features that can make a tree hazardous

Eight easily identifiable indicators are pictured overleaf and if discovered may require further, expert, investigation.

