EUROPEAN VISUAL INSPECTION CATALOGUE (EVIC) FOR FREIGHT WAGON AXLES

to be applied in light maintenance of freight wagons in workshops

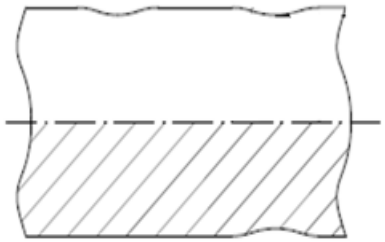
Joint Sector Group for ERA Task Force on wagon/axle maintenance

DAMAGE CATEGORY

	Painted axles	
30	No defects	OK
31	Mechanical damage sharp edged circumferential fluting	X (not ok)
32	Mechanical damage smooth edged circumferential groove	X (not ok)
33	Mechanical damage sharp edged notching	X (not ok)
34	Mechanical damage cracks	X (not ok)
35	Surface damage large and heavily corroded areas	X (not ok)
36	Surface damage single, deeply pitted corrosion scars	X (not ok)
37	Coating damage with or without corrosion	C
	Unpainted axles	
40	No defects	OK
41	Mechanical damage sharp edged circumferential fluting	X (not ok)
42	Mechanical damage smooth edged circumferential groove	X (not ok)
43	Mechanical damage sharp edged notching	X (not ok)
44	Mechanical damage cracks	X (not ok)
45	Surface damage very heavy, deep and large corrosion	X (not ok)
46	Surface damage single, deeply pitted corrosion scars	X (not ok)
	All axles	
50	Abutment area	X (not ok)

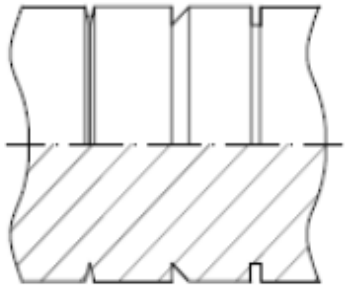
CRITERIA FOR PAINTED AXLES

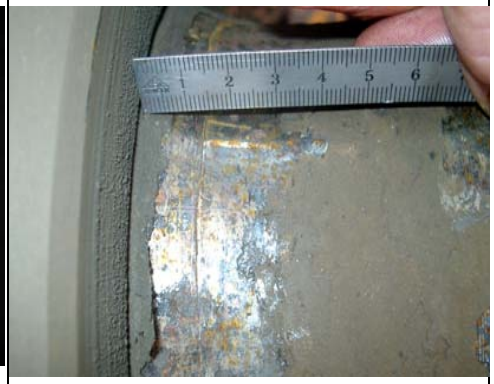
30 No or admissible defects found on the axle surface - smooth pitting		**Painted axles**
Salient information:		
	Pitting may occur either round the entire perimeter or intermittently and is characterised by smoothly rounded contours with no sharp transitions. This type of pitting may arise in the course of maintenance work. The anti-corrosion coating is undamaged.	
Decision:		
	Pitted axles whose coating is nevertheless undamaged may remain on the vehicle	
	Mark 1 at "ok" column in EVIC logging.	**OK**

Pictorial representation:			
			

31 Mechanical damage – sharp edged circumferential fluting		Painted axles
Salient information:		
	Flutes are characterised by sharp edged circumferential sharp-edged transitions.	
	Mechanical damage to the base material in the form of fluting is inadmissible.	
Decision:		
	Check on the wagon why this damage could have occurred and repair accordingly	
	Remove from service according	Case A
	Mark 1 at "X" column in EVIC logging	X

Pictorial representation:

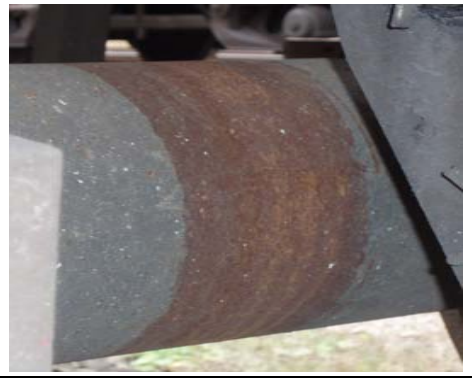




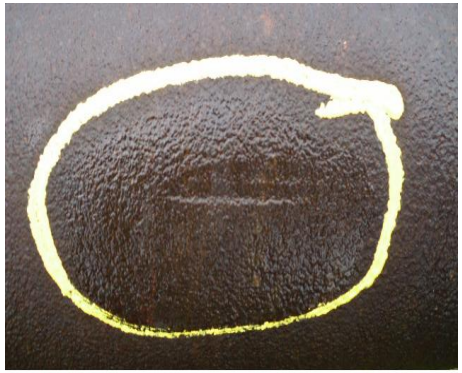
32 Mechanical damage – smooth edged circumferential grooves		Painted axles
Salient information:		
	Characterised by smooth transitions in the edges (GCU Annex 9, 1.6.2). Pitting that arises during operation (caused e.g. by brake lever connectors dragging) involves damaged anti-corrosion coating	
Decision:		
	Check on the wagon why this damage could have occurred and repair accordingly	
	Remove from service	Case B
	if there is damage to the base material > 1mm: (acc. GCU)	Case A
	mark 1 at "X" column in EVIC logging	X

Pictorial representation:






33 Mechanical damage – sharp edged notching		Painted axles
Salient information:		
	Sharp edged notches occur locally and are characterised by sharp-edged transitions.	
	Mechanical damage to the base material in the form of notching is inadmissible.	
Decision:		
	Remove from service (according to GCU criteria)	**Case A**
	mark 1 at "X" column in EVIC logging	**X**

Pictorial representation:			
			

34 Mechanical damage – cracks		Painted axles
Salient information:		
	Cracks occur locally on the shaft material (not on the painting) and are characterised and visible by fine lines.	
	Mechanical damage to the base material in the form of cracks is inadmissible.	
Decision:		
	Remove from service	**Case A**
	mark 1 at "X" column in EVIC logging	**X**

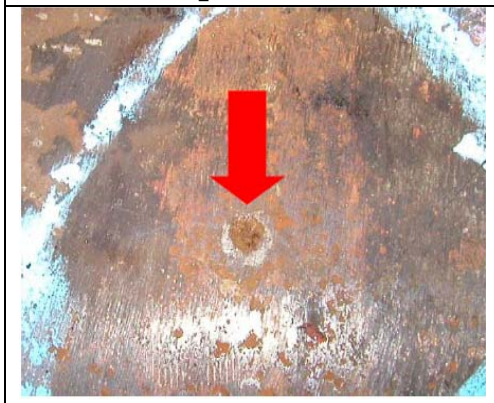
Pictorial representation:			
			

35 Surface damage – large and heavily corroded areas		Painted axles
Salient information:		
	Surface damage to base material in form of large and heavily corroded areas (old corrosion protection) is inadmissible.	
Decision:		
	Remove from service	**Case B**
	mark 1 at "X" column in EVIC logging	**X**

Pictorial representation:



36 Surface damage – single, deeply pitted corrosion scars		Painted axles
Salient information:		
	Surface damage to the base material in the form of marked, local corrosion scars (resulting e.g. from chemical effects) is inadmissible.	
Decision:		
	Remove from service	**Case B**
	mark 1 at "X" column in EVIC logging	**X**

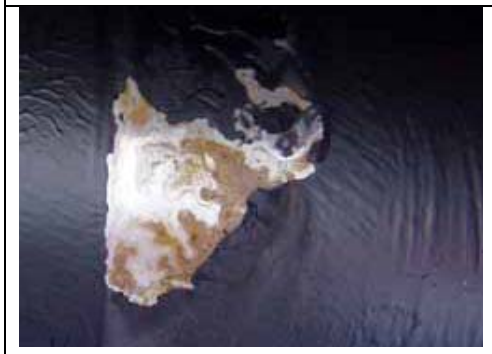
Pictorial representation:			
			

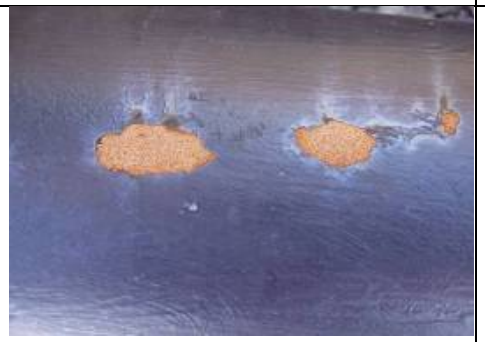
37 Coating damage – with or without corrosion		Painted axles
Salient information:		
	Minor lack of an anti-corrosion coating, whether corrosion is involved or not.	
Decision:		
	Leave in service acc. case C and/or repair the damage in situ on the wheelset	Case C
	mark 1 at "C" column in EVIC logging	C

Pictorial representation:










CRITERIA FOR UNPAINTED AXLES

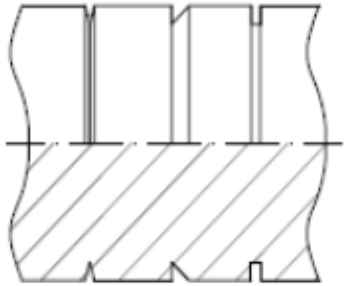
40 No defect - admissible surface appearance		Unpainted axles
Salient information:		
	There exist maintenance rules that do not require any anti-corrosion protection. Axles and wheels stay unpainted in such cases and show a thin and uniform layer of rust on their surfaces in service.	
	SNCB return on experience proves that application of such an axle maintenance system does not lead to any fatigue caused ruptures during service of an axle.	
Decision:		
	Deep corrosion is not accepted.	
	Leave in service wheelset “as new”, “very good”, “good” and “acceptable”	
	mark 1 at “ok” column in EVIC logging	OK

Pictorial representation:

As new	Very good	Good	Acceptable
			

41 Mechanical damage – sharp edged circumferential fluting		Unpainted axles
Salient information:		
	Flutes are characterised by sharp edged circumferential sharp-edged transitions.	
	Mechanical damage to the base material in the form of fluting is inadmissible.	
Decision:		
	Check on the wagon why this damage could have occurred and repair accordingly	
	Remove from service according	Case A
	mark 1 at "X" column in EVIC logging	X

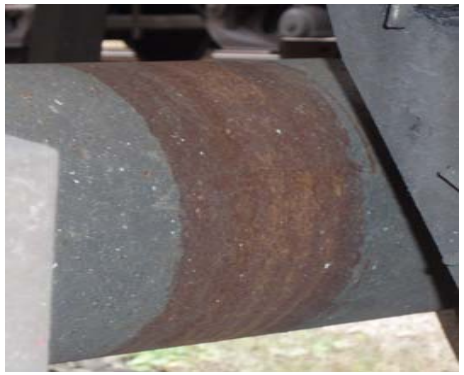
Pictorial representation:



42 Mechanical damage – smooth edged circumferential grooves		Unpainted axles
Salient information:		
	Characterised by smooth transitions in the egdes (GCU Annex 9, 1.6.2). Pitting that arises during operation (caused e.g. by brake lever connectors dragging) involves damaged anti-corrosion coating	
Decision:		
	Check on the wagon why this damage could have occurred and repair accordingly	
	Remove from service	Case B
	if there is damage to the base material > 1mm: (acc. GCU)	Case A
	mark 1 at "X" column in EVIC logging	X

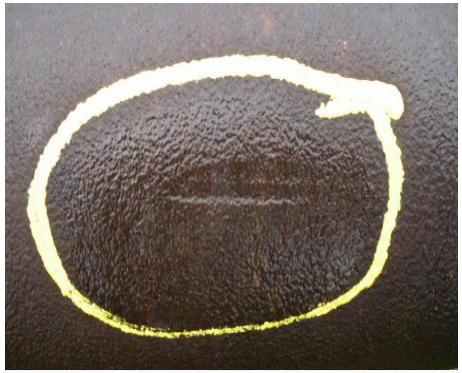
Pictorial representation:






43 Mechanical damage – sharp edged notching		**Unpainted axles**
Salient information:		
	Sharp edged notches occur locally and are characterised by sharp-edged transitions.	
	Mechanical damage to the base material in the form of notching is inadmissible.	
Decision:		
	Remove from service (according to GCU criteria)	**Case A**
	mark 1 at "X" column in EVIC logging	**X**

Pictorial representation:



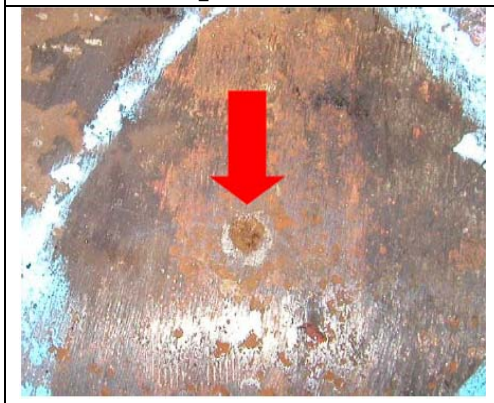
44 Mechanical damage – cracks		Unpainted axles
Salient information:		
	Cracks occur locally and are characterised and visible by fine lines.	
	Mechanical damage to the base material in the form of cracks is inadmissible.	
Decision:		
	Remove from service	Case A
	mark 1 at "X" column in EVIC logging	X

Pictorial representation:			
			

45 Surface damage – large and heavily corroded areas		Unpainted axles
Salient information:		
	Surface damage to base material in form of large and heavily corroded areas (old corrosion protection) is inadmissible.	
Decision:		
	Remove from service	**Case B**
	mark 1 at "X" column in EVIC logging	**X**

Pictorial representation:

46 Surface damage – single, deeply pitted corrosion scars		Unpainted axles
Salient information:		
	Surface damage to the base material in the form of marked, local corrosion scars (resulting e.g. from chemical effects) is inadmissible.	
Decision:		
	Remove from service	**Case B**
	mark 1 at "X" column in EVIC logging	**X**

Pictorial representation:			
			

ABUTMENT AREA

50 Abutment area		All axles
Situation:		
	Normally, the abutment area cannot be inspected sufficiently for wheelsets mounted in the wagon	
Recommendation:		
Only if there is a clear indication on mechanical or corrosion damages		
	Take wheelset out	**Case A**
	Mark 1 at "X" column in EVIC logging	**X**
If not judgeable		
	Leave wheelset in service	
	Mark 1 at "OK" column in EVIC logging	**OK**

Pictorial representation:

Not acceptable

Not jugeable