After Viareggio:
Results of the ERA Task Force on wagon/axle maintenance

Norwegian Rail Authority Seminar "How to learn from (and avoid) accidents"
Oslo, 26.10.2010

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Chairman of the Joint Sector Group for the ERA Task Force

Where do we come from? The Joint Sector approach for a European problem

- **The following 3 initiatives started on EU level since September 2009:**

1. EU Rail Safety Conference

2. ERA Task Force « Freight Wagon Maintenance »

- **The sector is asked to provide expertise and to work out solutions/proposals**

3. **Joint Sector Group: CER, ERFA, UIP, UIRR, UNIFE**

JSG
Joint Sector Group

- **The task: find a common European solution for a European problem**

Who exactly was acting together in the Task Force?

- **ERA and several National Safety Authorities**
  - ERA
  - NSAs: Italy, Germany, UK, Netherlands, Belgium, France, Sweden, Latvia, Austria

- **The Joint Sector Group: all EU freight wagon stakeholders & wheelset manufacturers**
  - CER: SNCF, SNCB, DB, Trenitalia, SBB, ÖBB/RCA, ZSSK, MAV/RCH, SLO, RENFE, PKP, DB UK, CFL, ….
  - ERFA: AAE, IGTL (Poland), ASSTRA (Italy), VDV (Germany), …
  - UIP: VPI Germany (VTG, GATX, …), ASSOFERR, VPI Austria, ERMEWA, WASCOSA, Transfesa, all other national associations, ….
  - UNIFE Lucchini, Valdynes, Rafil (wheelset manufacturer)
  - UIRR

Joint Sector Group

- **Sector and NSAs worked jointly together in the Task Force to find European solutions**

The Joint Sector Programme worked out in the ERA Task Force was fully adopted in Viareggio in December 2009

- **European Action Programme:**

  - A **Visual Inspection** of the European wheelset/axle population (according to EVIC)
  - A more in-depth **investigation of samples** of wheelsets from defined operating areas
  - A European-wide implementation of **systematic traceability of wheelset maintenance**

- **Confirmation of the European standard axleload of 20 t for UIC Typ A axles**
  (and of the special cases, e. g. France, Belgium, Sweden)

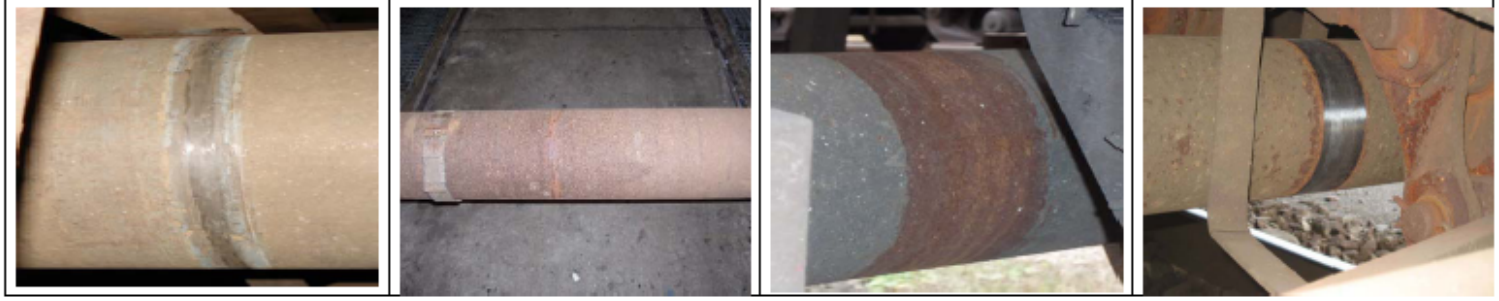
The 1st element of the European Action Programme: EVIC inspections – harmonised European Criteria

EUROPEAN VISUAL INSPECTION CATALOGUE (EVIC) FOR FREIGHT WAGON AXLES V 2.11

example

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:



The 1st element of the European Action Programme: EVIC inspections – harmonised European Criteria

EUROPEAN VISUAL INSPECTION CATALOGUE (EVIC) FOR FREIGHT WAGON AXLES V 2.11

example

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:



The 1st element of the European Action Programme: EVIC inspections – harmonised European Criteria

EUROPEAN VISUAL INSPECTION CATALOGUE (EVIC) FOR FREIGHT WAGON AXLES V 2.11

example

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:

CER ERFA UIP unife

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The 1st element of the European Action Program: Impressions of the National EVIC trainings

ASSOFERR

JSG 1st “train the trainers”

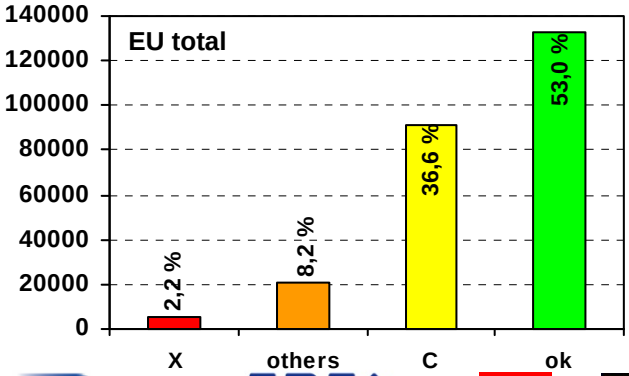
ZSSK Cargo

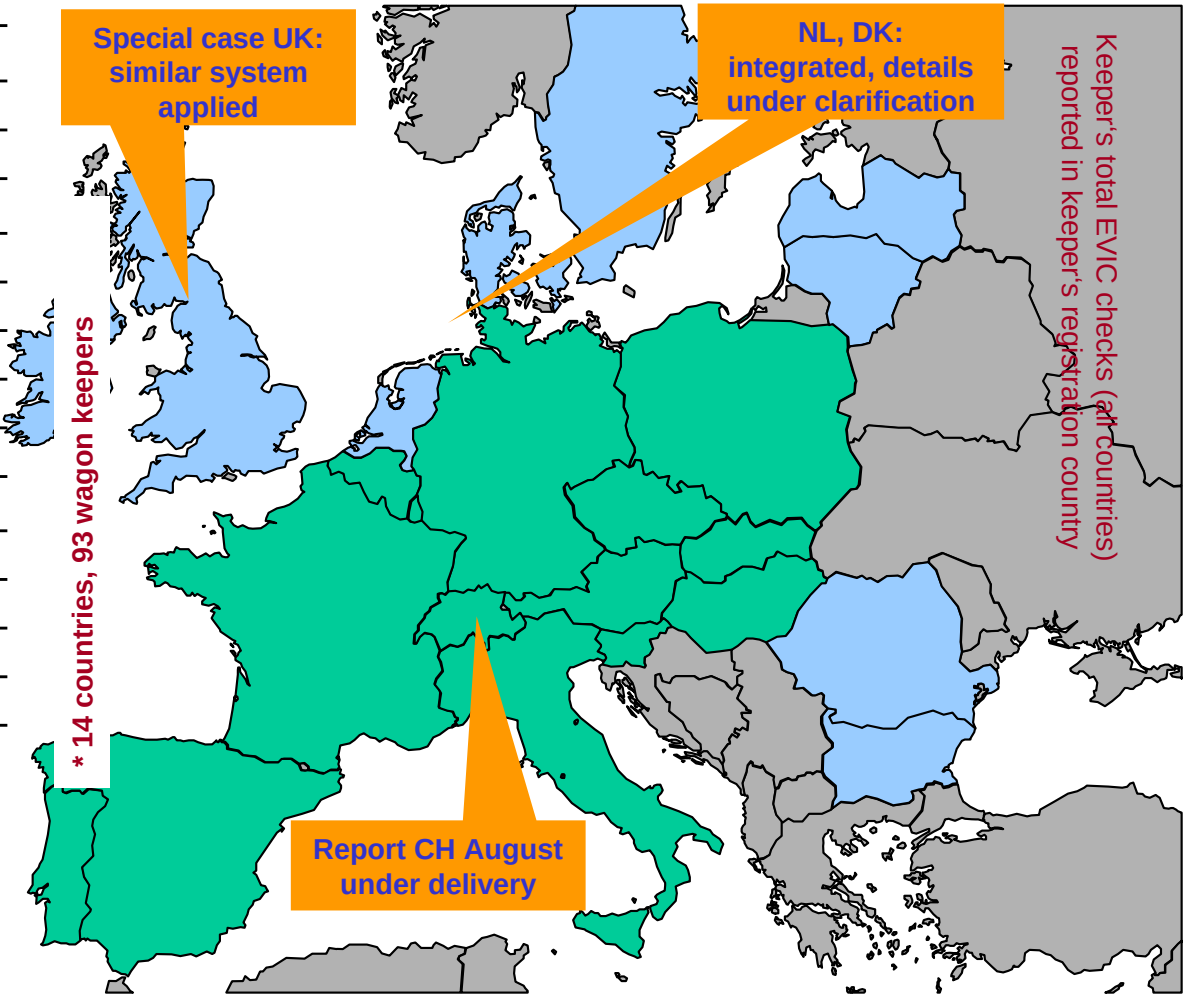
ASSOFERR

Joint EVIC Germany

The 1st element of the European Action Programme: EVIC inspections (EU total) as per August 2010

	No. of wg checks	Axles total	others	„ok“	„X“	„C“
EU total *	64.664	249.986	20.601	132.423	5.379	91.583
AT	1.856	7.142	2.988	2.499	412	1.243
BE	1.237	4.914	0	4.855	39	20
CH	3.118	10.453	593	4.329	255	5.276
CZ	48	192	0	192	0	0
DE	44.841	175.871	13.430	85.797	3.973	72.671
ES	150	463	0	207	96	160
FR	5.570	21.131	3.213	16.125	165	1.628
HU	635	2.367	14	1.444	4	905
LU	15	60	0	34	1	25
IT	2.582	9.814	186	5.284	334	4.010
PL	2.192	8.540	89	7.075	92	1.284
PT	88	221	2	0	0	219
SK	2.287	8.664	21	4.504	5	4.134
SI	45	154	65	78	3	8

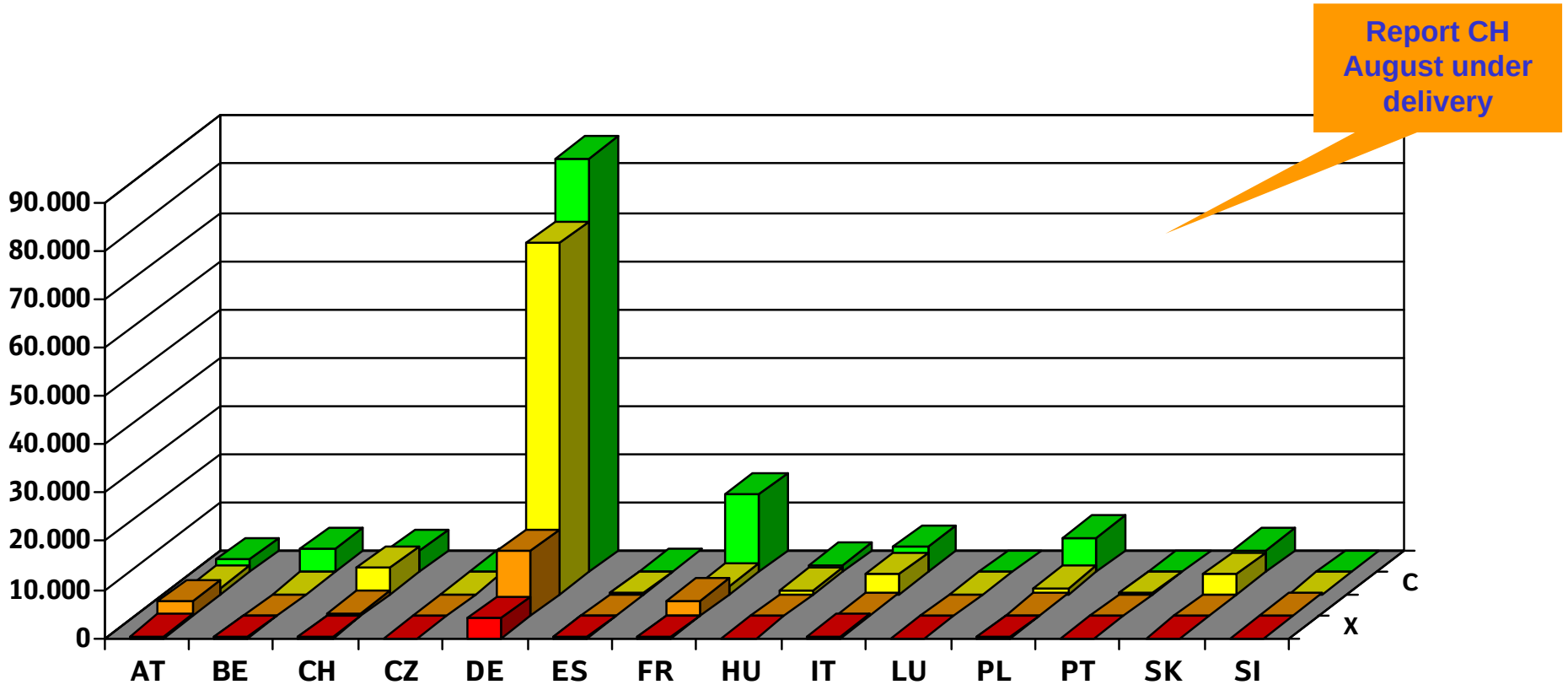




X: Remove from service without delay **others:** sorted out for other reasons, e.g. GCU criteria

C: Leave in service until the next EVIC check **ok:** no defects, leave in service

The 1st element of the European Action Programme: EVIC inspections (EU total) as per August 2010



X: Remove from service without delay **others:** sorted out for other reasons, e.g. GCU criteria

C: Leave in service until the next EVIC check **ok:** no defects, leave in service

Keeper's total EVIC checks (all countries) reported in keeper's registration country

The 2nd element of the European Action Programme: Sampling and analysis programme of wheelsets from defined operating areas

- Programme started Mai/June 2010
- 24.000 axles
- Duration: 12 months
- Intermediate report after 6 months
- **Critical for success!**

Workshop	Risk Domain	Wheelset type	Wheelset number	Date	Wheel dismounted	Bearing ring dismounted
TERGNIER	DG	9052	12345	24 / 02 / 2010	Yes / No	Yes / No

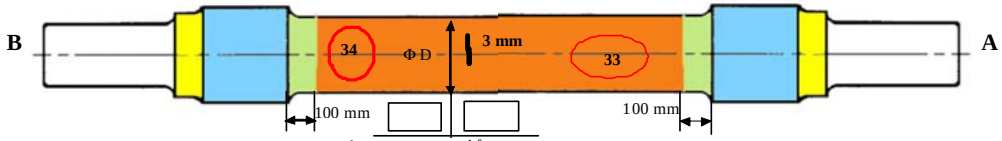
Previous axle maintenance with NDT

Date	Level	NDT System	Workshop
15 /01/ 2001	COP	MT	Rennes

EVIC APPLICATION

Zone	B journal	B abutment	B wheel seat	B transition radius (100 mm)	Shaft	A transition radius (100 mm)	A wheel seat	A abutment	A journal
EVIC defect category				33,34					

Roughness or UIC surface categories



NDT before treatment

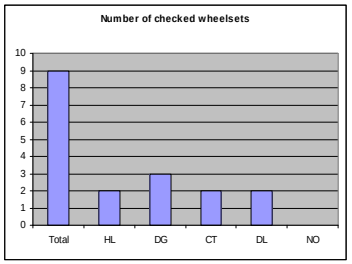
Zone	B journal	B abutment	B wheel seat	B transition radius (100 mm length)	Shaft	A transition radius (100 mm length)	A wheel seat	A abutment	A journal
NDT System									
MT	No	No	No	No	Yes	No	No	No	No
Man UT Auto UT Eddy Current									
Defect in EVIC zone		Yes / No		Yes / No	Yes / No	Yes / No		Yes / No	

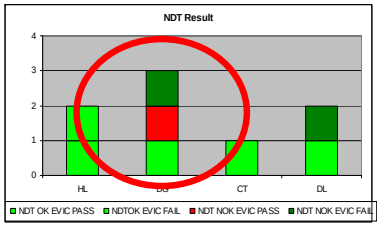
Treatment

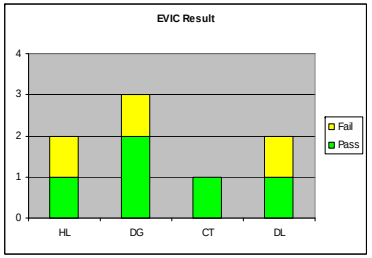
Grinding the shaft central part 0,5 mm depth.

NDT after treatment

MT man ☑ UT auto ☐ Axle scraped Yes / No







The 3rd element of the European Action Programme: European-wide systematic traceability of wheelset maintenance data

- European Wheelset traceability (EWT) adopted
- **Implementation in the Sector from 08/2010 onwards**
- **Self obligation (as for EVIC)**
- Later integration in EN 15 313
- Mainly compliant with german NSA (EBA) general order on documentation (12/09).
  EBA checks potential for amending general order
- ANSF will check if national measures could be removed after in-field verification of traceability in 2010

No	timeframe	Designation	Remark
		Wheelset in general	
1	a	Wheelset number	
2	a	Wheelset design type or alternative designation	
3	a	Previous keeper(s) (ECM)	if applicable (if the keeper has changed) Data has to be stored from the last wheel change on *Remark:* Current keeper of the wheelset is the keeper of the wagon (see number 38)
4	a	Certificate number and notified body from EC-declaration of conformity (TSI compliant wheelsets) Homologation number and authorising or certifying body (other wheelsets)	 if available
5	a	Maximum authorised axle load (of the entire wheelset)	
6	a	assembler of wheels (manufacturer if first assembly)	for wheelsets from service: if available
7	a	Date of first assembly of wheels (month/ year)	for wheelsets from service: if available
8	a	Date when wheelset is taken out of keepers' fleet (scrapped, selling, etc.)	
		Wheelset axle	
9	a	Wheelset axle serial number	
10	a	Wheelset axle design type or alternative designation	
11	a	Certificate number and notified body from EC-declaration of conformity (TSI compliant axles) Homologation number and authorising or certifying body (other axles)	 if available
12	b	Manufacturer	for wheelsets from service: if available
13	b	Manufacturing date (month/ year)	for wheelsets from service: if available
14	b	Number of cast iron	for wheelsets from service: if available
15	b	grade of steel (state of heat treatment)	for wheelsets from service: if available
16	a	Maximum permissible axle load (regarding the axle)	
17	b	Manufacturing standard of the axle	for wheelsets from service: if available The manufacturing standard is directly related to the manufacturing date; (UIC; EN)
		Wheels	
18	a	Design type or alternative designation	
19	a	Tyred wheels	Yes/ No
20	a	Certificate number and notified body from EC-declaration of conformity (TSI compliant wheels) Homologation number and authorising or certifying body (other wheels)	 if available
21	b	Manufacturer	for wheelsets from service: if available
22	b	Manufacturing date (month/ year)	for wheelsets from service: if available
23	b	grade of steel (state of heat treatment)	for wheelsets from service: if available
24	b	Number of cast iron	for wheelsets from service: if available
25	a	Maximum authorised axle load (regarding the wheel)	

excerpt

The integrating element:
European Common Criteria for Maintenance

Axle surface status after overhaul (in medium and heavy maintenance)

Traceability

.....

All to be integrated in EN 15 313

before: implementation by self obligation

which NDT and where?

Maintenance rules for high performance operation

What is to be done now: the Sector must fulfil its safety responsibilities!

- The Joint Sector Programme was agreed by all EU authorities and NSAs

- **It is up to the Sector to implement now what has been decided**
- **Implementation must be done as a self-commitment in the Sector Association‘s companies – there is no legal obligation!**

- All results will enter soon in European Standard (EN 15 313)

- NSAs to audit the decided measures

Outlook: Further European technical harmonisation for European Rail Freight

- **Task Force to continue (“Freight Platform”). JSG approach (wagon) to expand first to:**
  Bearings, (Tyred wheels, Trapezoidal springs,…)
- **Procedure:**
  1) Joint European **situation/effect analysis** and evaluation (Sector, ERA, NSAs)
  2) Only thereafter eventual and coordinated (joint European) measures
- **The target system:**
  - **Joint Sector solutions, agreed with NSAs and ERA, laid down in EN / GCU**
  - **Harmonised European base for freight wagon ECMs (in consequence: for SMS)**
  - **National safety standards must disappear in perspective**

Lessons learned

1. Act only European: technically (Sector side) and legally (NSA side)

2. Analyse the situation and take the appropriate maeasures –
   do not exagerate, do not underestimate

3. Learn from the analyses and install the right corrections

4. Act as a Joint Sector and better rule and manage yourself

5. Act before you are driven to act

Thank you for your attention!