

IMPLEMENTATION GUIDE

FOR THE

EUROPEAN WHEELSET TRACEABILITY (EWT) FOR FREIGHT WAGON AXLES

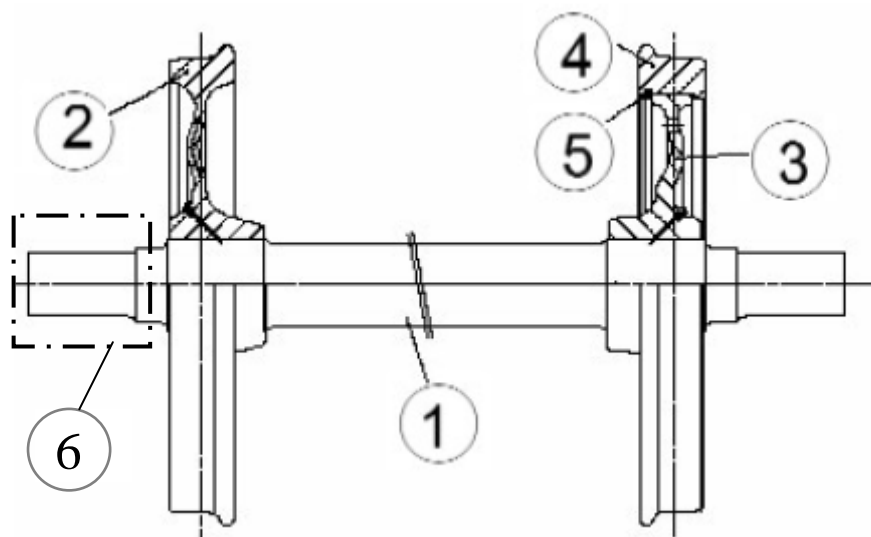
Joint Sector Group for ERA Task Force on wagon/axle maintenance

Table of Contents

1	Definitions	3
2	Reasons for the EWT	4
3	Objectives of the EWT	5
4	Timeframes	5
5	Boundary conditions	6
6	The tasks of the Joint EWT bodies	6
7	The tasks of the keeper	8
8	The tasks of the workshop	8
9	Data to be collected	9
9.1	Wheelset in general	9
9.2	Wheelset axle	10
9.3	Wheels	11
9.4	Bearings	12
9.5	Medium and Heavy Wheelset maintenance	13
9.6	Vehicle in which the wheelset is built in	13
9.7	Irregularities	14
10	Measures resulting from lack of traceability	15

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1 Definitions



Key

- 1 axle
- 2 monobloc wheel
- 3 wheel centre
- 4 tyre (if)
- 5 retaining ring (if)
- 6 axle box with bearing

ECCM	European Common Criteria for Maintenance (of wheelset axles)
EWT	European Wheelset Traceability
ECM	Entity in Charge of Maintenance
GCU	General Contract of Use (CUU, AVV)
NDT	Non Destructive Testing
NSA	National Safety Authority

2 Reasons for the EWT

European wagons keepers have developed since many decades a maintenance system assuring a safety which allowed to become the safest land freight transport.

However, after the tragic accident in Viareggio,

- the European Railway Agency
- the European NSAs and
- the Joint Rail Freight Sector (CER, ERFA, UIP, UIRR, UNIFE)

agreed to investigate in the frame of the ERA Task Force the possibilities for a European approach for harmonised criteria and immediate and mid-term measures ascertaining an even enhanced railway safety in an appropriate way.

The Joint Sector Program worked out in the ERA Task Force was fully adopted in Viareggio in december 2009. The European Action Program consists of a:

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

The Joint Sector program was approved by all EU authorities and NSAs. It is up to the Sector to implement now what has been decided. The implementation of the program (here especially: EWT) is done as a self-commitment in the Sector Association's companies in fulfillment of the Sector's Safety responsibility. There is no legal obligation but a clear commitment of the Sector to the European and National Authorities to implement the Action program. The European Wheelset Traceability will be integrated in the updated version of EN 15313.

The European NSAs are invited to audit the execution of the decided measures.

3 Objectives of the EWT

To improve and to harmonize traceability further, and to reduce the time for analyzing in case of incidents, the sector will collect the data listed in this document.

The aim of the EWT is to:

- √ trace wheelsets in case of incidents and to reduce the risk for further incidents due to similar reasons.
- √ trace in case of incidents the service conditions of a wheelset in the past and also its core item, the axle.
- √ trace the applied maintenance regime and which non destructive tests have been done on the wheelset.

In case wheelset defects will be detected, the keeper is able to select concerned wheelsets by the aid of EWT. This allows the keepers and NSA's to carry out appropriate measures.

4 Timeframes

From August 2010 onwards, the sector will begin to collect the data listed below:

- √ The data of the group "a" have to be collected at the first time the wheelset enters a suitable workshop (the "suitable" workshop will be defined by the ECM) and at the latest at the next reprofiling maintenance level.
- √ The data of the group "b" have to be collected at latest at the next maintenance of the wheelset with overhaul of the bearing.
- √ The data of the group "c" have to be collected at latest at the next mounting and dismounting of the wheelset from the wagon.
- √ For the data of the groups "a" and "b" which couldn't be determined, the notice "not available" has to be entered.
Measures to be taken in this case: according to the adopted ECCM (see chapter 10; later according to EN 15313).

The collection of the data per wheelset has at latest to be completed within the next maintenance with overhaul of the bearing.

For new wheelsets, the collection of all data group a, b, c must start **from 08/2010 onwards** and before the wheelset is in service.

The data must be recorded in a filterable electronic system at **latest from 01.01.2012 onwards**.

5 Boundary conditions

- I. Collected maintenance dynamic data of category “I” of the wheelset must be stored as minimum until the next maintenance operation on the respective component (e. g. bearing overhaul to bearing overhaul).
- II. Data of the category “II” have to be stored over the lifetime of the respective component.
- III. Data of the category “III” have to be stored over the lifetime of the wheelset.

The current keeper has the responsibility to obtain the data from the previous keeper or the manufacturer and store and update the data until the change of the keeper according to the categories.

The existing wheelset data have to be given to the new keeper in case of change of the keeper.

The EWT doesn't replace existing maintenance rules. The data listed in the EWT are the minimum of data to be recorded. It is up to the Entity in Charge of Maintenance (ECM) to decide if it is necessary to record additional data.

6 The tasks of the Joint EWT bodies

The Joint EWT body consists of members nominated by the Railway Associations UIP, CER and ERFA per European country (see table) and is responsible for the issues regarding the EWT in its respective EU Member State (plus Switzerland).

The Joint EWT body will:

- organize the translation of the EWT in the national language
- issue the translated EWT documents to the keepers
- manage all information of all concerned parties (workshops, keepers,...)

The Joint EWT bodies per country:

Country	Lang.	UIP / Rivière	CER / Schachner	ERFA / Heiming
France	FR	David Tillier AFWP dtillier@ermewa.fr evic.france@sncf.fr	Lafaix SNCF bernard.lafaix@sncf.fr evic.france@sncf.fr	
Switzerland	DE, FR, IT	Olga Wisniewska VAP tech@cargorail.ch	Bernet SBB thomas.bernet@sbbcargo.com evic.ch@sbb.ch	Dr. Johannes Nicolin AAE johannes.nicolin@aae.ch
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Denmark	DK		Benny Spangsborg Benny.Spangsborg @dbschenker.com	

The reference is the English language version. All documents (english and translated) will also be published officially on **xxx website** (to be defined by the Joint Sector Group)

The Joint EWT body per country delivers the EWT document in the national language

The Joint EWT body per country issues the EWT document to the countries' keepers (and, for information, to the RUs)

The keepers (ordering the EWT from the workshops) hand over the documents to the executing workshops.

The executing workshop adds required national and local working rules as well as all supporting further instructions to the EWT docs on/for application on the workshop level.

7 The tasks of the keeper

The keeper is responsible to collect, update and keep the data from the workshops **from 08/2010 onwards**.

From 01.01.2012 onwards the keeper has to store the data in a filterable electronic system.

The execution of the EWT must be **mandated to the contracted workshops by the keepers**.

The keeper must take over the costs for executing the EWT.

In case of a replacement according to GCU, the executing workshop has to send the "**Form H_R**" according to the GCU with the information of the wagon number and the wheelset number of the wheelset to be replaced to the keeper.

8 The tasks of the workshop

The workshop has to collect the data.

The workshop has to submit the collected data to the keeper.

Any workshop (light or heavy maintenance) which executes a wheelset change must collect the data of the group "c" and submit them the keeper.

If the workshop is a heavy maintenance workshop which executes a major maintenance / overhaul level on a wheelset, additionally the data of the group "a" and group "b" have to be collected and submitted to the keeper.

9 Data to be collected

9.1 Wheelset in general

No	Time-frame	Designation	Remark	category
1	a	Wheelset number		III
2	a	Wheelset design type or alternative designation		III
3	a	Previous keeper(s) (ECM)	if applicable (if the keeper has changed) Data has to be stored from the last change of the keeper onwards. Remark: Current keeper of the wheelset is the keeper of the wagon (see number 38)	III
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 if available	III
5	a	Maximum authorised axle load (of the entire wheelset)		III
6	a	assembler of wheels (manufacturer if first assembly)	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	III
7	a	Date of first assembly of wheels (month/ year)	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	III
8	a	Date when wheelset is taken out of keepers' fleet (scrapped, selling, etc.)		III

9.2 Wheelset axle

No	Time-frame	Designation	Remark	category
9	a	Wheelset axle serial number (of the manufacturer)	if available	II
10	a	Wheelset axle design type or alternative designation		III
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 if available	II
12	b	Manufacturer	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	II
13	b	Manufacturing date (month/ year)	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	II
14	b	Number of cast iron	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	II
15	b	grade of steel (state of heat treatment)	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	II
16	a	Maximum permissible axle load (regarding the axle)		II
17	b	Manufacturing standard of the axle	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory <p>The manufacturing standard is directly related to the manufacturing date; (UIC; EN)</p>	II

9.3 Wheels

No	Time-frame	Designation	Remark	category
18	A	Design type or alternative designation		III
19	A	Tyred wheels	Yes/ No	II
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 if available	II
21	B	Manufacturer	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	II
22	B	Manufacturing date (month/ year)	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	II
23	B	grade of steel (state of heat treatment)	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	II
24	B	Number of cast iron	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	II
25	A	Maximum authorised axle load (regarding the wheel)		II

9.4 Bearings

No	Time-frame	Designation	Remark	category
26	a	Design type of axle box or alternative designation		II
27	b	Bearing geometrical type (e.g. cylinder roller bearing, ball joint bearing etc...)		II
28	b	Original manufacturer of the bearing (component contains outer ring, cage and rollers)		II
29	b	Converter of the bearing (e.g. on synthetic cage)	If applicable	I
30	b	Date of manufacture of the bearing in clear or coded form	<ul style="list-style-type: none"> for existing wheelsets already in service: if available for new wheelsets: mandatory 	I
31	b	Cage design type (e.g. material polyamide, brass with steel rivet, steel)		I
32	b	Type of grease		I

9.5 Medium and Heavy Wheelset maintenance

No	Time-frame	Designation	Remark	category
33	a	Date of maintenance		II
34	a	Applicable maintenance program (number of the document)		II
35	a	Maintenance level		II
36	a	Maintenance workshop / site		II
37	b	Last maintainer of the bearing (if different from maintenance workshop)		I
38	a	Date of next planned overhaul of the wheelset		I

9.6 Vehicle in which the wheelset is built in

Note: not applicable for bogies with variable gauge

No	Time-frame	Designation	Remark	category
39	c	Keeper of the wagon		III
40	c	Vehicle number		III
41	c	Vehicle UIC letter code (e.g. Shimmns)		III
42	c	Vehicle class (e.g. 708)	if available	III
43	c	Maximal authorised axle load (regarding the vehicle)		III
44	c	Date of wheelset mounting		III
45	c	Date of wheelset dismounting		III
46	c	Mileage of the wheelset respective to the period of use per vehicle if available		III

9.7 Irregularities

Note: since applying the traceability system

No	Time-frame	Designation	Remark	category
47	a	Irregularities	Special examinations in case of remarkable damages (e.g. derailments, overload, short-circuits via the axle-bearing, high water, broken wheels, broken axle, wagon collisions) (description of the cause, execution workshop, date)	III

10 Measures resulting from lack of traceability

1. If in a wheelset maintenance level (with axle boxes opened) one or two of the following information for an individual wheelset is/are missing:

- **manufacturer**
- **manufacturing date**
- **manufacturing standard**

the ECM has to decide according to its experience with its axle population about the measures to be applied. At minimum, the axle has to be subject to immediate NDT (only once).

If no indication at all is given, the axle must be **scrapped**.

2. If the existence of the following data for an individual wheelset cannot be proven on paper, databases, data band... (detected during the acquisition according to the European Wheelset Traceability scheme or on special request):

- **workshop of last maintenance activity**
- **date of last maintenance activity**
- **type of last maintenance activity**

then the axle has to be **subject to immediate NDT (only once)**.

NDT for the axle must be performed in all cases 1. and 2. according to the relevant existing rules and after publication (in 2010) acc. to the ECCM criteria (see below).

3. The ECM/keeper has to decide according to its experience with the operational conditions of the axles if the non traceable axle has been used in accordance with its design or with high performance parameters.

If this is not identifiable, the **most severe** NDT conditions according to the “ECCM Continued High Performance Operation” rules must be applied in the future maintenance of the axle (see below, ECCM clause 5. *special regimes*).

The above mentioned measures are communicated in advance to their publication in the ECCM which are going to be introduced in short term (2010) in the European Sector. In the step after, the measures mentioned here (and the ECCM in a whole) will be integrated in the EN 15313.