

Reporting Body	IT Ministero delle infrastrutture e dei trasporti	ID	IT-1248
----------------	---	----	---------

Occurrence Summary

What		Location	
Date of occurrence	24-09-11	Location name	Open line
Local time	13:14	Latitude	45:38:38 North
Event type	Rolling stock events (Train splitting)	Longitude	10:53:22 East

Description During braking caused by the intervention of the ATP, the train has broken in two parts due to the break of the coupling hook of the penultimate car

Direct Cause descrip Breaking of the draft rod due to the propagation of a pre-existing crack, which has reduced the useful section resistant rod itself until reaching the breaking point.

Final Report

Nam	Desc	Type	Size	Last	Orga	Repo
Repo		appli	1060	1/21	Softe	
rt.pdf		catio	54	/201	co	
		n/pdf		3		
				12:0		
				1:59		
				PM		

Other Attachments

Nam	Desc	Type	Size	Last	Orga	Repo
Rec.	Offici	appli	1627	1/21	Softe	
pdf	al	catio	335	/201	co	
	reco	n/pdf		3		
	mme			12:2		
	ndati			3:28		
	ons			PM		

What

Title Rolling stock events, 24/09/2011, Open line (Italy)

Occurrence type Rolling stock events Occurrence Class Other

Date of occurrence 24-09-11 Local time 13:14

Events Rolling stock events (Train splitting)

Descriptions

Language English Translation provider Information providers own translation

Description During braking caused by the intervention of the ATP, the train has broken in two parts due to the break of the coupling hook of the penultimate car

Reporting Body	IT Ministero delle infrastrutture e dei trasporti	ID	IT-1248
----------------	---	----	---------

Location name	Open line		
Railway System type	Railway	Country	Italy
Location type	Line	Border Country	
Line type	Double track	Line number	
Allowed line speed		Km number	
Latitude	45:38:38 North	Longitude	10:53:22 East
Location description	Open line		
Additional location in			
Location type details	Plain track	Fixed installations	

Occurrence details

Railway vehicles

Movement type	Long distance passenger train	Train number	13468
RU	Italy Trenitalia SpA	Wagons overturned	No
Train speed at mom		Passengers onboard	Yes
Vehicle description	historical cars operated by the company Venice Simplon Orient Express (VSOE)		

Other objects involved in the occurrence

Other objects

Parties involved

IM Involved	Italy - RFI SpA	RU	Italy - Trenitalia SpA
-------------	-----------------	----	------------------------

	Fatalities	Serious injuries	Minor injuries
Passengers	0	0	0
Staff	0	0	0
Level crossing users	0	0	0
Unauthorised persons	0	0	0
Others	0	0	0
Total	0	0	0

Material consequences

Material Damage	Rolling stock	Estimated total mate	< 150 000 €
Damage description			

Reporting Body	IT Ministero delle infrastrutture e dei trasporti	ID	IT-1248
----------------	---	----	---------

Images

Name	Description	Type	Size	Last modified	Organization	Repository
0						

Causation

Causes

Language	English	Translation provider	Information providers own translation
----------	---------	----------------------	---------------------------------------

Direct Cause description

Breaking of the draft rod due to the propagation of a pre-existing crack, which has reduced the useful section resistant rod itself until reaching the breaking point.

Underlying and root causes description

Degradation of characteristics (increased hardness and therefore fragility) of the material constituting the rod which has favored the start of the crack, caused most probably by a trauma that has undergone the rod, in the vicinity of the variation of the base section of the head of the coupling hook.

Causation classification

Rolling stock events (Train splitting)

1 - Coupling system and buffer gear

1 - Design

Recommendations

Recommendation

Issuing information

Recommendation title

Recommendation ID	REC-000059	End implementer	NSA
Status	Sent to addressee	Addressee	ANSF
Issue date	06-11-12		

Recommendation texts

Language	Italian	Translation provider	Original version
----------	---------	----------------------	------------------

Recommendations text

Si raccomanda all'ANSF di curare che vengano svolte indagini generalizzate dalle imprese ferroviarie e/o dai detentori di carri, intesa a verificare, sui rotabili di proprietà di tali enti, circolanti sul territorio nazionale, innanzitutto la consistenza numerica e la distribuzione delle aste di traino del tipo che ha subito sul rotabile incidentato la rottura fragile per disuniformità localizzata della caratteristica di "durezza" del materiale. Da tale indagine ricognitiva complessiva, sia sul piano strettamente numerico, che sul piano distributivo, dovrà prendere le mosse una analisi, a cura ed a carico dei soggetti medesimi, su un ristretto campione, ma significativo in senso statistico, tesa a misurare l'eventuale esistenza e consistenza del fenomeno della disuniformità localizzata di durezza su tali specifiche aste di traino.

Quanto sopra, al fine di verificare, ancora in senso statistico, il potenziale rischio di rottura fragile del materiale, provocato dalla modifica del suo grado di duttilità nelle sezioni più critiche dell'organo.

L'analisi dovrà mettere in evidenza - in particolare - se esistono significative correlazioni fra:

- le eventuali evenienze negative che emergeranno dallo studio

e

- l'utilizzo di tali dispositivi in convogli che viaggiano, come nel caso dell'incidente, in composizione bloccata con la compresenza di dispositivi di altro tipo sullo stesso convoglio.

L'intero studio, coordinato dall'ANSF, dovrà anche evidenziare, sulla base dei risultati, se possa ricorrere la necessità di emanare norme tecniche più specifiche per l'attività manutentiva sui componenti di questa natura nei casi di convogli bloccati (sia per architettura progettuale che per costanza d'uso in tale forma).

Per maggiori dettagli si rimanda alla Relazione disponibile all'indirizzo internet prima indicato.

Language	English	Translation provider	EU Official translation service
----------	---------	----------------------	---------------------------------

Recommendations text

The ANSF is advised to arrange for Railway Undertakings (RUs) and/or waggon holders to conduct a wide-ranging survey of their own rolling stock in use in Italy, with the aim above all of checking the numbers and the distribution of coupling bars of the type which, on the rolling stock involved in the accident, had snapped due to localised distortion.

This wide-ranging numerical and distributive audit should form the basis of an analysis to be conducted by the RUs and holders themselves on a restricted, but statistically significant sample, concentrating on revealing the possible existence of metal fatigue on those specific coupling bars and how widespread the phenomenon is.

The above has the overall aim of ascertaining (statistically) the potential risk of snapping caused by changes to the degree of brittleness in the most critical parts of couplings.

The analysis should, in particular, show whether there is any significant correlation between:

- any negative contingencies which might emerge from the study

and

- the use of such devices in trains travelling, as in the case in point, in fixed formations in which there are such devices, but of a different type, in use on the same train.

The whole study, coordinated by the ANSF, should also show, based on the results obtained, whether there is any need to promulgate more specific technical standards for maintenance work on components of this kind in use on trainsets which cannot be divided (be it for design reasons or habitual use in such formats). For more details, kindly refer to the report available under the internet address indicated above.

Implementation information

Implementation status

Implementation date

Unknown

Reporting Body	IT Ministero delle infrastrutture e dei trasporti	ID	IT-1248
----------------	---	----	---------

NSA Response

NIB Comment

Causation links

Rolling stock events (Train splitting)

Subsystem - Rolling stock - Wagons - Coupling system and buffer gear

Causal factors - Design

Investigation details

Legal Basis National rules imposed by implementing of the Safety Directive 2004/49/EC - in light of Article 19, §2 of SD - (a) the seriousness of the accident or incident

Other reason descrip

ID	IT-1248	Reporting Body	Ministero delle infrastrutture e dei trasporti
----	---------	----------------	---

National investigatio

Occurrence creation	29-09-11 10:28:20	Investigator in charge
---------------------	-------------------	------------------------

Decision to investigate	26-09-12
-------------------------	----------

Declaration date	29-09-11
------------------	----------

Date of IM/RU notific

Report Type	Final report	Workflow Status	Validated
-------------	--------------	-----------------	-----------

Report Version	2	Investigation Status	Closed
----------------	---	----------------------	--------

Other Attachments	Name	Descriptio	Type	Size	Last	Organizati	Repositor
	Rec.pdf	Official recomme ndations	applicatio n/pdf	1627335	1/21/2013 12:23:28 PM	Softeco	

Final Report	Name	Descriptio	Type	Size	Last	Organizati	Repositor
	Report.pdf		applicatio n/pdf	106054	1/21/2013 12:01:59 PM	Softeco	