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Mr Andrew Hall
Deputy Chief Inspector of Rail Accidents
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Dear Andrew,

RAIB Report: Trains struck platform at Moston, Manchester, 28 January 2015

I write to report¹ on the consideration given and action taken in respect of recommendations 1 and 2 addressed to ORR in the above report, published on 7 October 2015.

The annex to this letter provides details in respect of each recommendation. Recommendation 1 was passed to GB Railfreight, Direct Rail Services, Freightliner, Devon and Cornwall Railways, DB Cargo and Colas Rail. For all but DB Cargo, ORR concluded that the recommendation was either '**not applicable**' or had been '**implemented**'. For DB Cargo, ORR concluded the status was '**Implementation on-going**'. ORR will advise RAIB when further information is available regarding actions being taken by DB Cargo.

The status of recommendation 2 is '**implementation ongoing**' and ORR will advise RAIB when further information is available.

We will publish this response on the ORR website by 10 October 2016.

Yours sincerely,

Tracy Phillips

¹ In accordance with Regulation 12(2)(b) of the Railways (Accident Investigation and Reporting) Regulations 2005

Initial consideration by ORR

1. Both recommendations were addressed to ORR when the report was published on 7 October 2015.
2. After considering the recommendations ORR passed recommendation 1 to GB Railfreight (GBRf), Direct Rail Service (DRS), Freightliner (FL), Devon and Cornwall Railways (DC Rail), DB Cargo, Colas Rail and recommendation 2 to Network Rail asking them to consider and where appropriate act upon them and advise ORR of its conclusions. The consideration given to each recommendation is included below.
3. This annex identifies the correspondence with end implementers on which ORR's decision has been based

Recommendation 1

The intent of this recommendation is to minimise risk from hinged spigots being left in positions where they project beyond the vehicle gauge and thus present a risk of collision with structures. If a paint based solution is adopted, the benefits of painting wagon sides, rather than spigot assemblies, should be considered (paragraph 75).

Operators of container carrying vehicles, liaising where necessary with vehicle owners and entities in charge of maintenance, should:

- ensure hinged spigot assemblies are, where practicable, provided with a physical means preventing them being left in a position where they are out of gauge; or
- if physical prevention is not practicable, ensure out of gauge spigot assemblies are easily recognised by train preparers.

ORR decision

4. ORR acknowledges that this recommendation does not apply to GBRf, DC Rail or Colas Rail as they do not currently operate wagons of the type addressed by the recommendation. Freightliner and DRS have provided appropriate assurance that appropriate measures are in place to either ensure spigot assemblies are easily visible or prevent the risk of a spigot being left in a position which is out of gauge.
5. This leaves the action currently being taken by DB Cargo to implement an engineering solution to mitigate the identified risk.
6. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, freight operators have:
 - taken the recommendation into consideration; and
 - DB Cargo is taking action to implement it by the end of 2016.

Status: Implementation ongoing. ORR will advise RAIB when actions to address this recommendation have been completed.

Information in support of ORR decision

GB Railfreight

7. On 20 November 2015 GBRf provided the following initial response:

GBRf has issued an operating notice to staff drawing attention to this incident and the outward rotating spigot (gauge) issue (Annex B).

Also it has been confirmed by GBRf Engineering Dept. that outward rotating spigot bases are being painted white and this aspect included within the maintenance / inspection regime of the vehicle.

8. On 5 May 2016, in response to a request from ORR to explain how the first bullet point of the recommendation was being addressed, GBRf provided the following update:

GB Railfreight does not operate wagons that have the type of spigot involved in the incident at Moston. All relevant GB Railfreight vehicles have spigots that fold out and then physically drop below sole bar level so that they remain in gauge. It's therefore GB Railfreight's understanding that it already complies with the first bullet point of the recommendation.

As such GB Railfreight has taken no further action to address this point. However this is an area that will be monitored on introduction to new rolling stock via our Engineering Change processes.

Status: Not applicable

Direct Rail Services

9. On 17 November 2015 DRS provided the following initial response:

Attached is the Company Traincrew Information Notice issued to all staff involved in the preparation of these types of vehicles and similar variants including third party Train prep providers on the 9 October 2015.



TIN Notice 15-015
Moston Notice.pdf

The DRS training team has also been tasked to ensure that this topic is covered in DRS train preparation training material. DRS has now included pertinent points raised within the RAIB report to further reduce the risk of an incident of this nature occurring again. This incident was also discussed at the DRS Ops Risk Reduction Meeting in October.

10. On 18 December 2015 DRS provided a further update:

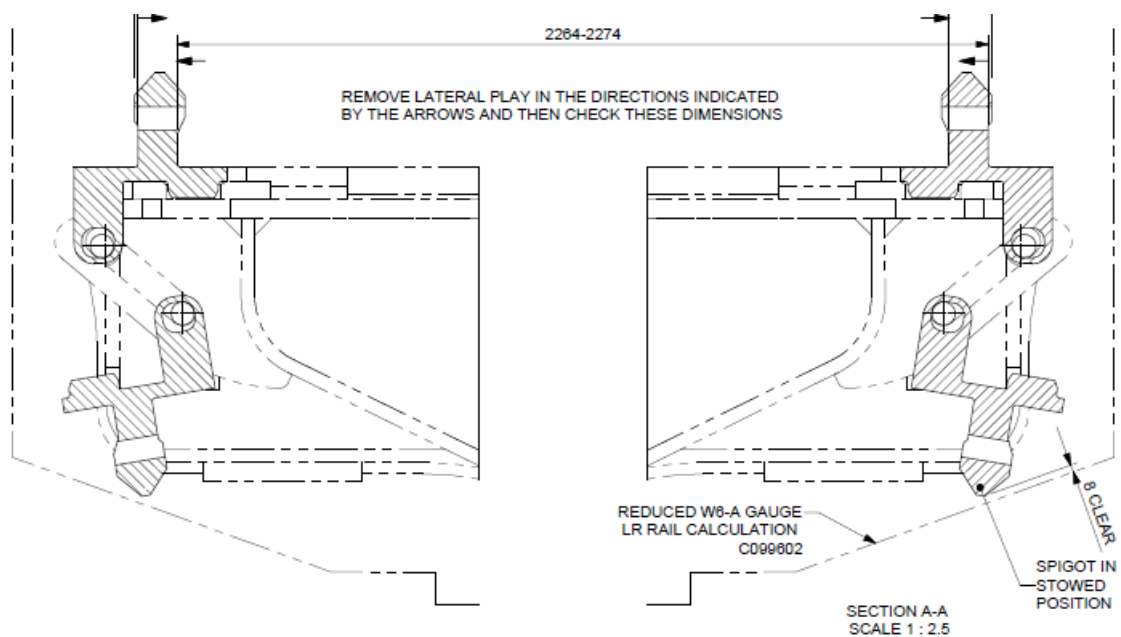
With regard to recommendation 1 of this report, the spigot arrangements on the IKA and IDA wagons operated by DRS are different to those identified on the FKA wagon in the report, and as such its first action is to ascertain whether or not it is possible for IKA or IDA wagon spigots to go out of gauge or not during

the retraction/locating process, hence DRS will know whether it has a problem or not. This will be done in association with the ECM for the IKA fleet as suggested in Rec 1. DRS is the ECM for the IDA fleet.

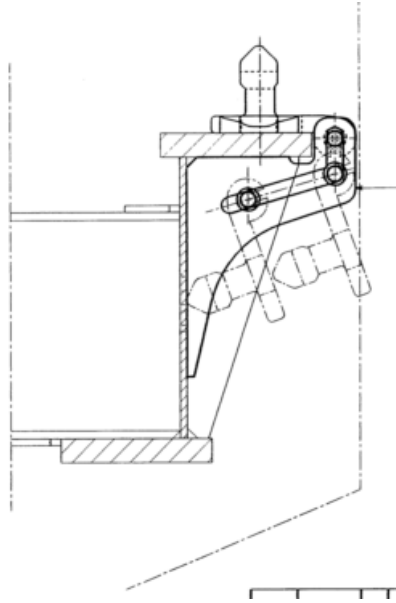
Painting of spigots takes place in accordance with the maintenance plans for both fleets of container flats that DRS operates, and DRS is not aware of any issues with the quality or visibility of the spigots. Any such reports would be monitored via the SPM process and actioned anyway, so DRS is confident that that will continue to happen.

11. On 1 June 2016 DRS provided a further update:

- The DRS owned fleet of IDA wagons have both UIC fixed and folding spigots of which all are painted white for ease of visibility to all personnel.
- The IDA wagon spigots that do fold all fall to the 'storage' position when not in use to within the W6-A gauge as shown on the W H Davis drawing 'RW 2088 – Installation of Flip Over Spigots Super Low (0996) issue C of which the relevant extracted section is as per the below:



- The DRS fleet of IKA wagons of which DRS is the operator have both UIC fixed and folding spigots of which all are painted white for ease of visibility to all personnel.
- The IKA wagon spigots that do fold all fall to the 'storage' position when not in use to within the vehicle static gauge as shown on the Arbel Fauvet Rail drawing '1-612767 – Console Centrale issue D'



- *DRS' Operations Training department have sufficient detail in the briefings given to all train drivers / trainmen and any train preparers to be able to identify if any spigots are not in the correct position to allow for safe movement of the vehicles.*

Status: Implemented

Freightliner

12. On 20 November 2015 Freightliner provided the following initial response:

Freightliner is both an Entity in Charge of Maintenance (ECM) and Operator of container wagons equipped with spigot assemblies.

As a result of the recommendation Freightliner has taken action as follows:

- Freightliner is the ECM for wagon types FEA and FLA that are fitted with spigots. The spigot design has been assessed on these wagon types and we have concluded that there is no risk of a spigot left in position to be out of gauge. FEA wagons have inward folding spigots in all positions, FLAs have fixed spigots at the outer ends with inward folding at the inner positions. All other Freightliner ECM Container carrying wagons are equipped with twistlocks and are therefore not affected by this issue.*
- Freightliner has reviewed the fleets of wagons we operate for which we are not ECM. We operate a fleet of IKA 'Megafret' wagons for which AAE are the ECM. AAE have been contacted and confirmed that the spigot design on these wagons is such that the spigot either folds under the wagon (middle positions) or is restrained from folding outside the loading gauge (outer positions). A spot check has been undertaken of a number of wagons*

and has confirmed the design of the spigot does indeed prevent any risk of an unused spigot being out of gauge.

- c) Freightliner has reviewed the procedures in place for pre-departure checks and it has been confirmed that checking for out of gauge components is a key requirement. Regular routine checks of staff undertaking pre-departure checks confirms this key requirement is being applied.*
- d) The report is due to be tabled at Freight Technical Committee on 26th November where actions taken by other ECMs will be discussed.*

Freightliner is therefore satisfied that it has robust controls in place to prevent any risk from hinged spigots being left in positions where they project beyond the vehicle gauge.

Status: Implemented

Devon and Cornwall Railways

13. On 20 November 2015 DC Rail provided the following initial response:

DC Rail is principally a freight operating company specialising in open box type traffic, DC Rail does not currently operate intermodal / containerised traffic and neither leases or owns vehicles capable of carrying containers. However the operation of containerised traffic is not prohibited and allowance is made in its SMS through its General Operating Appendix for such operation. Therefore DC Rail has reviewed the RAIB report and in particular its recommendation 1.

To ensure that the risks associated with the duty holder's activities in relation to the recommendation are understood, documented and controlled DC Rail has placed the following parts of the SMS into review; GOA Modules A7 Loading of Intermodal Vehicles and A8 Technical Train Examination. These will be updated in relation to reflect the need for greater awareness during Train Preparation and Dispatch and also best practice established for technical solutions prior to the company operating any intermodal service.

Further, the report and recommendations from the RIAB investigation will be taken into account along with any output from the Freight Technical Committee as part of its New Traffic Acceptance process, if and when DC Rail takes on any intermodal / containerised traffic in the future.

Status: Not applicable

DB Cargo

14. On 20 November 2015 DB Cargo provided the following initial response:

DB Cargo has reviewed the risk associated with the operation of the FKA vehicles and taken the decision to engineer out the risk. Initial work was completed by Lloyds Register to design a solution, which was agreed at the DBSR (UK) Engineering Standards team as the ideal solution. The DB Cargo Head of Maintenance then

created a business case for submission at the DB Cargo board. This was submitted in September by the DB Cargo Head of Production and approved at the DB Cargo board. A fitment specification has already been drafted and the vehicles will be modified at their VIBT exams starting in January 2016, therefore the planned completion date is the end of 2016, when the entire fleet will have received a VIBT.

DB Cargo provided the following supporting documentation

- *Lloyds Register FKA Spigot Improvement Paper*



474286R01 FKA
Wagon Spigot Improve

- *DBSR (UK) Board Paper for the modification of the FKA fleet*



Board Paper Spigot
Mods on FKA fleet Ser

- *DBS-EA-0433 - Replacement of the Movable Spigots on the FKA wagon*



DBS-EA-0433 -
Replacement of Movat

The business at our Strategic Safety Group, acknowledged that this will remove the risk in the long term and therefore DB Cargo will have implemented additional short term measures which include:

- *One to one briefing with staff that exam FKA vehicles to explain the current risk, previous incidents and raise awareness. Each member of staff will sign for this brief*
- *A new certificate of readiness to be introduced though the RA and SSOW process for locations that depart the FKA vehicles.*
- *Analysis and introduction of gauging equipment possibilities at locations that depart FKA's, to highlight to ground staff during the departure of trains if anything is out of gauge.*

15. On 5 October ORR received the following update from the Acting Head of Safety and Operations:

DB Cargo had supplier issues and lead times were extended by a number of weeks. The impact lead to the first of class fitment taking place in April, however the new spigots failed our quality checks two times before we were happy with the quality of the product. Fitment commenced in June, so we are around six month behind plan, to ensure an engineering solution removes the

risk.

Status: Implementation ongoing. ORR will advise RAIB when actions to address this recommendation have been completed (expected mid 2017).

Colas Rail

16. On 14 December 2015 Colas Rail provided the following initial response:

Colas Rail Services operates a Strategic Plant Department and a Freight Department where we use flat wagons to convey infrastructure maintenance plant and material and to secure goods to flat wagons. However, Colas Rail Services does not currently hold a contract for the conveyance of containers therefore recommendation one of the RAIB report is not applicable to Colas Rail.

Due to the nature of the rail freight industry in winning and being awarded freight contracts, Colas Rail will ensure that the relevant persons within the business are forwarded a brief on minimising the risk from hinged spigots being left in such a condition that they project beyond the vehicle gauge should it win such a contract in the future.

The company has a freight operating procedure titled "New Freight Traffic Acceptance Procedure" which will be amended to include the use of containerised traffic and hinged spigots being in gauge should such work be undertaken in the future.

Status: Not applicable.

Recommendation 2

The intent of this recommendation is to provide Network Rail staff with clear guidance, and practical methodologies, for recognising long term reductions in clearances at platforms. Where clearances are managed by comparison to a reference datum (eg the position of a platform in January 2009), the process should facilitate this comparison. Documents referenced in Network Rail standard NR/L2/TRK/3201 should be checked to ensure that the current version does not have a potential to mislead staff involved in management of clearances at platforms.

Network Rail should review and improve its process for managing clearances at platforms so that:

- it provides an effective means for identifying long term adverse movement trends, including an effective means of comparing movement data with any relevant datum information; and
- documentation directly related to managing clearances is more clearly presented.

ORR decision

17. ORR is content with the response and will continue to liaise with Network Rail to ensure that it is progressing to stated timescales. ORR considers that, when completed, the status of the recommendation can be reported as 'Implemented by alternative means' as Network Rail's chosen method to address the intent of the recommendation does not rely on the further development or use of datum plates, an explicit element of the first bullet point of the recommendation.

18. After reviewing the information provided ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- is taking action to implement it by 2 September 2016.

Status: Implementation ongoing. ORR will advise RAIB when actions to address this recommendation have been completed.

Information in support of ORR decision

19. On 3 February 2016 Network Rail provided the following initial response:

Network Rail has supported RAIB throughout their investigation of this incident including detailed discussions in respect of the intent of this recommendation.

On publication of the investigation report Network Rail opened discussions with the ORR to agree an action plan to address the intent of Recommendation 2 by alternative means; a joint meeting was held on 10 December 2015 Network Rail.

At the meeting Network Rail stated that it does not agree that trending of datum plate data is the most appropriate method of considering change in risk. Datum plate data records the relative position of the adjacent rail and a datum plate 'block'. This relationship is not sensitive to changes outside of that relationship which may adversely affect clearances and therefore the risk of a strike. Examples of such movements include platform coping stone movement and 'bulging' in tunnels – both of these movements may be independent of the relative position of track and datum plate.

Furthermore, datum plate monitoring is a costly exercise which involves putting staff on track and does not align with our safety by design aspirations. Changes to Railway Group Standards now allow the 'Infrastructure Manager' to manage tight clearances without datum plate monitoring and Network Rail proposes to focus upon other control measures where these are appropriate.

Addressing the specific recommendation bullet points:

- provide an effective means for identifying long term adverse movement trends, including an effective means of comparing movement data with any relevant datum information

Network Rail currently trend clearances for 'Critical Structures' using the 'TiCleD' system which is provided to Route teams to assist them in managing clearances and specifying work.

Network Rail currently compares the measurements being taken with the previous TiCleD data or the original design parameters. This therefore, does not readily provide a 'historic trend' as any older TiCleD data is not routinely provided although it is stored/available.

Nonetheless, Network Rail is, in conjunction with Balfour Beatty Rail, currently developing a new tool called Rolling Stock Clearance (RSC) which gives much more comprehensive clearance data (incl. clearance, cant, curvature, vehicle gauge etc) which when combined can be used to give the worst case scenario. It also has a wider benefit of being able to record and provide historic trending data.

This tool is currently on programme to be rolled out by the end of April 2016 although in closing this aspect of the recommendation a post implementation period is considered appropriate.

Completion 1 June 2016

- documentation directly related to managing clearances is more clearly presented

Track Engineering Form TEF3050, Datum Monitoring Sheet

Network Rail has improved TEF3050 to more clearly align with current standards and have improved the information available; Issue 3 of the form was published on 5th December 2015 and is available on CONNECT.

BowTie for 'Management of Gauging'

Network Rail is developing a BowTie diagram mapping out the process and controls for the management of gauging risk. It is intended that the Bowtie diagram will be developed, peer reviewed and approved by 2nd September 2016.

Completion 2 September 2016

It was concluded that fulfilling these actions will combine to present clearance management information more clearly.

20. An email exchange on 18 July 2016 between an ORR inspector and a Network Rail senior engineer confirmed the proposed actions set out above but advised that the date the recommendation was expected to be closed out was now **30 November 2016**.

MISCELLANEOUS OPERATING NOTICE

Train Preparation Outward rotating Spigots

Your attention is drawn to a recent occurrence where substantial damage was sustained to line side infrastructure due to an outward rotating spigot assembly being left in an 'out of gauge' position in transit.

It is believed this condition was overlooked during train preparation, resulting in the vehicle entering the network in an unsafe condition.

Spigot Recess



Outward rotating spigots are being painted on the underside to enhance visibility of any rotated spigots. Please ensure during train preparation of these vehicles, that spigots not in use are either stowed in position on the bed of the vehicle (in the spigot pocket) or rotated outward and stowed adjacent to a spigot recess to ensure the spigot is then not out of gauge.

All staff are reminded to be extra vigilant during train preparation and departure roll by checks.

This instruction remains in force until further notice.