

**ISSUE DETAILS**

<b>Reference</b>	P&E/342	<b>Issue No.</b>	2	<b>Issue Date:</b>	Apr 2008
<b>Title</b>	Use of Rail Cropper Attachments with RRV's				
<b>Status</b>	Revised				
<b>Compliance Date</b>	Immediate				
<b>Document Owner</b>	Paul Milner – Engineering Manager				

**BRIEFING REQUIREMENTS**

The following table defines how revised issues of this document are briefed to existing employees according to related specific responsibilities.

This is determined using the 'RACI' principle. Those roles identified as 'Responsible' and 'Accountable' should receive a formal awareness briefing facilitated by the Document Owner.

<b>Role</b>	<b>RACI</b>	<b>Type of briefing</b>
Plant Coordinator	Informed	Awareness
Plant Development Engineer	Responsible	Detailed
Reliability Engineer - OTM	Responsible	Detailed
Operations Coordinator - OTM	Responsible	Detailed
Temporary Route Learning Coordinator	Responsible	Detailed
Bowser Driver	Responsible	Detailed
Senior Bowser Driver	Responsible	Detailed
Senior Driver Maintainer Operator	Responsible	Detailed
Trainee Driver Maintainer Operator	Responsible	Detailed
Driver Maintainer Operator	Responsible	Detailed
Driver Operator	Responsible	Detailed
Fitter / Fitter Small Plant - NVQ	Responsible	Detailed
Maintainer Operator OTM/PM/RMC	Responsible	Detailed
Trainee Maintainer Operator	Responsible	Detailed
OTM Operator	Responsible	Detailed
Plant Operator PM	Responsible	Detailed
Crew Manager OTM	Responsible	Detailed
Delivery Supervisor	Responsible	Detailed

**PURPOSE**

The Rail Cropper Miscellaneous Attachment is attached to RRV's and used for the cropping/cutting of sections of rail into manageable lengths, to allow rail or panels to be cut up for removal from site.

There is a high risk when cutting a section of rail that the shear stresses induced by the cropper will result in the rail springing up and injuring personnel or damaging infrastructure. The cropping action may also eject small pieces of rail or trapped ballast some distance from the cropping head.

The purpose of this instruction is to provide instruction for ensuring that a safe working procedure and environment is adopted when the Frag ('Mobile Frag Sales Ltd') Rail Cropper is in use to cut scrap rail.

**SCOPE**

The scope of this instruction is to provide guidance to Project Managers for ensuring that safe working processes are adopted when using a Frag Rail Cropper. Although applicable to civil construction work-sites as well as Network Rail controlled infrastructure work-sites or such rail infrastructure work-sites that may be affected by these operations; this document is deliberately subjective in that it is set out in terms of the Sentinel Machine Controller (MC) being responsible for the organisation & control of the safe systems of work. Any questions related to application of this document in a 'civil working environment' should be passed through the originator for the benefit of the Group with regard to its interpretation and operational use.

**WHAT HAS CHANGED IN THIS LATEST ISSUE AND WHY**

Periodic Review – Significant changes to reflect nationalised training material used in Controller and Operator competency with respect to the organisation and control of operations with RRV Rail Cropper Attachments.

**ISSUE RECORD**

Issue No.	Date	Summary of changes
1	Jun 2005	First Issue
2	Apr 2008	Periodic Review – Significant changes to reflect nationalised training material used in Controller and Operator competency with respect to the organisation and control of operations with RRV Rail Cropper Attachments



## Approval and Authorisation

Prepared by: .....		.....
	Director of Engineering	
Authorised by: .....		.....
	Chief Executive Officer	
<i>(Signatures removed from electronic document – signed original retained by document owner)</i>		

## Revision Details

Issue No.	Revision No.	Issue date	Comments
1	0	Jun 2005	First Issue
2	0	Apr 2008	Periodic Review – Significant changes to reflect nationalised training material used in Controller and Operator competency with respect to the organisation and control of operations with RRV Rail Cropper Attachments

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Published by  
Engineering Department, VolkerRail Group Ltd,  
1 Carolina Court, Lakeside, Doncaster DN4 5RA

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## 1. Introduction

The Rail Cropper Miscellaneous Attachment is attached to RRV's and used for the cropping/cutting of sections of rail into manageable lengths, to allow rail or panels to be cut up for removal from site.

There is a high risk when cutting a section of rail that the shear stresses induced by the cropper will result in the rail springing up and injuring personnel or damaging infrastructure. The cropping action may also eject small pieces of rail or trapped ballast some distance from the cropping head.

The purpose of this instruction is to provide instruction for ensuring that a safe working procedure and environment is adopted when the Frag ('Mobile Frag Sales Ltd') Rail Cropper is in use to cut scrap rail.

## 2. Scope

The scope of this instruction is to provide guidance to **Project Managers** for ensuring that safe working processes are adopted when using a Frag Rail Cropper. Although applicable to civil construction work-sites as well as Network Rail controlled infrastructure work-sites or such rail infrastructure work-sites that may be affected by these operations; this document is deliberately subjective in that it is set out in terms of the Sentinel **Machine Controller (MC)** being responsible for the organisation & control of the safe systems of work. Any questions related to application of this document in a 'civil working environment' should be passed through the originator for the benefit of the Group with regard to its interpretation and operational use.



### 3. Procedure

#### 3.1. Machine Work Plan

'Rail Cropper' is a **Machine Controller (MC)** controlled miscellaneous attachment yet- a Rail Cropper typically weighs 1500kg when at rest within its 300kg cradle or attached to the 250kg host machine quick hitch. This is a very significant weight for the host machine that it is attached to and a Machine Work Plan must be produced by a VolkerRail **Lifting Operations Planner** which documents how the machine will work safely with the Rail Cropper attached.

Weights of the Rail Cropper/s, together with Railway Plant Engineering Acceptance Certificates should be obtained from the Supplier/Hirer to calculate the limitations within which the cropper can safely work with the host machine. Depending on host machine capacity, track cant, (machine in rail mode) the distance from the host machine at which the attachment will be cropping and the complexity of a particular site and operation- the resultant Machine Work Plan MUST set out the safe system of work in accordance with the check list at Appendix A of this document.

#### 3.2. Rail Cropper Attachments Affecting Vehicle Stability in Rail Mode

A Rail Cropper attachment intended for use in rail mode without rated capacity indicators (RCI) (or with the RCI switched off) and which '*adversely affects vehicle stability*' should be identified by make and model number and be recorded on the Host Machine's **Certificate of Engineering Acceptance (EAC)** and a Machine Work Plan MUST be produced by a VolkerRail **Lifting Operations Planner** holding the competence, "Lift Planner – RRV & RMMM".

- **In these circumstances, operations are controlled within known parameters to a machine work plan by a MC RRV with 'Rail Cropper' certification**

*(Adversely affecting stability means where there may be circumstances and configurations where the weight of the attachment, including any possible load, causes the machine's centre of gravity to be displaced to the extent that the machine rail wheels would become unloaded)*

Where a Rail Cropper attachment is to be used that adversely affects stability and/or dynamic performance, where the make and model number is NOT recorded on the Certificate of Engineering Acceptance, it is essential when in service, that the vehicle MUST be used with the RCI switched on and the attachment treated as an operational load. A '**Lifting Operations Plan**' MUST be produced by the VolkerRail **Lifting Operations Planner** and a suitably competent **Crane Controller (CC)** MUST be provided by the **Project Manager** to organise and control the lifting element of the work activity.

- **In these circumstances are to be controlled to a Lifting Plan by a CC RRV with an MC present with 'Rail Cropper' certification.**
- **In these circumstances the machine Owner MUST also supply written approval to the effect that the attachment can be fitted and used.**

#### 3.3. Exclusion Zones

All staff (including the **MC**) must be kept at least **20.0m** from the cropping head and at least **3.0m** from the ends of long welded rail being cropped. As well as ensuring that the personnel exclusion zone is maintained, the **MC** must not allow cropping to take place within **10.0m** of any

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under-bridge unless control measures are in place to account for materials falling into a public place below.

### 3.4. Operations

The MC is responsible for setting up and ensuring that a planned Exclusion Zone is maintained and under no circumstances is anybody permitted to enter these areas whilst rail is being cropped. The MC must have a robust (radio) communication system set up with the machine Operator/s.

All rail lines that will come within 20.0m of the planned cropping head operation must be under possession. If the railway boundary comes within 20.0m, consideration as to the control measures in the public domain within the 20.0m zone must be agreed with the appropriate Business SQE Manager.

Wherever reasonably practicable, cropping of rail should be planned whilst the rail is still in the sleeper housings, and clipped in place. Rail can be cropped either in panels or in an unclipped state. (Shattered cropped ends will not be permitted to be loaded to trains as panels and will require ends dressing with disc-cutter if sharp jagged ends result from cropping). However, scrap rail can be loaded without dressing into open wagons.

Rails can be cropped into pieces while positioned in any of the following locations: -

- Clipped in the running line
- Loose rail in the 4ft
- Loose rail in the 6ft
- Loose rail on the ballast shoulder or in the cess

Where the rail is not clipped into sleepers, the cropping process disturbs the position of the rail during the cut. Before cropping takes place the MC **will survey** the site and confirm that all rails to be cut are on level ground, away from embankments and fixed infrastructure items such as point motors, rail fastenings, axle counters, AWS magnets etc.

The MC **will identify** the points at which the rail is to be cropped. These will be: -

- Cropped into pieces not less than 1.0m long - due to the potential for shorter rail to be 'flung' by the cropping action
- Not cropped within 1.5m of a weld - due to the potential of uncontrolled induced material stresses to shatter or split the rail at the weld position

In addition the MC should adhere to the following restrictions: -

- New rail will not be cropped
- Conductor rail will only be cropped using a specially designed cropper
- Untied bull-head rail will be supported in the upright position



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- Rail will not be lifted or moved with a rail cropper
- Rail will not be cropped within **10.0m** of an under-bridge in case any disturbed material falls in a public place below. Unless control measures are in place to account for materials falling into a public place below

#### 4. Training, Competency and Certification

The **Project Manager** will provide an RRV **MC** who holds competency certification for controlling the use of the 'Rail Cropper' attachment – in circumstances where the attachment is identified by make and model number and recorded on the Host Machine's EAC. (See 3.2)

The **Project Manager** will further provide an RRV **CC** to complement the **MC** OR a **CC** who also holds competency certification for controlling the use of the 'Rail Cropper' attachment – in circumstances where the make and model number of the attachment is NOT recorded on the Host Machine's EAC; And in addition supply a copy of the **Owner's** written approval to the effect that the attachment can be fitted and used. (See 3.2)

The **MC** will ensure that the Rail Cropper attachment has a valid current Engineering Acceptance Certificate and that the RRV **Operator** holds competency certification for operating the 'Rail Cropper' attachment.

#### 5. References/Cross references/Further Information

<a href="http://www.mobilefragsales.com/railindustry">www.mobilefragsales.com/railindustry</a>	Key manufacturer web-site
<b>GE/RT8000 Rule Book</b>	Module OTP & OTM
<b>VolkerRail Engineering Instruction, EI/P&amp;E/326</b>	Management of Lifting Operations Using Cranes and Excavators used for Lifting Purposes
<b>RSSB- RIS-1530-PLT</b>	Engineering Acceptance of Possession-only Rail Vehicles and Associated Equipment
<b>GM/RT1300 Issue 4</b> (Superseded by 1530-PLT but still valid for machines accepted under the scope of this document)	Engineering Acceptance of Road-Rail Vehicles and Associated Equipment
<b>RSSB- RIS-1700-PLT</b>	Safe Use of Plant for Infrastructure Work
<b>VolkerRail Safety Standard 15</b>	Safe Use of Plant and Work Equipment
<b>VolkerRail Safety Quality Environment Standard 049</b>	Operational Management of Engineering Worksites
<b>VolkerRail Engineering Instruction, GEI/P&amp;E/315</b>	Plant Working Adjacent to Operational Lines

## Checklist for Planning Site Working of Frag (or other) Rail Croppers

1. The Machine **Operator** must hold competency certification to operate the cropper and this shall be checked by the **MC**.
2. The **MC** must hold competency certification to control the use of the cropper
3. The Machine must have Engineering Acceptance Certificate which identifies the make and model number of the Rail Cropper OR there must be **Owner's** written approval for its fitting and use.
4. The Cropper must have an approval certificate to work on the particular infrastructure.
5. A robust (radio) communication system must be set up between the MC and Machine Operator/s.
6. There must be a Machine Work Plan, which has been produced by a VolkerRail **Lifting Operations Planner** that prescribes the limitations to which the cropper can safely work
7. Cropping should be planned to take place whilst the rail is still in the sleeper housings, and clipped in place wherever reasonably practicable
8. No cropping to take place within **10.0m** of any under-bridge unless control measures are in place to account for materials falling into a public place below
9. Rail will not be cropped into pieces not less than **1.0m** long
10. Rail will not be cropped within **1.5m** of a weld
11. There shall be an exclusion zone for **20.0m** all round the cropper head including:
  - Adjacent lines
  - Stations
  - Public areas outside fence
12. All rail lines that will come within **20.0m** of the planned cropping head operation must be under possession. If the railway boundary comes within **20.0m**, consideration as to the control measures in the public domain within the **20.0m** zone must be agreed with the appropriate **Business SQE Manager**.