WORKING ON OR AROUND OTR EQUIPMENT WITH DAMAGED OR LOW PRESSURE TIRES

Rev	Status	Rev. Date	Status Description	Prepared by	Reviewed by	Approved by
3	APP	Dec 18, 2023	Approved	T. Siver	S. Stephen	T. Siver
2	APP	Dec 21, 2020	Approved	T. Siver	G. Schreyer	G. Schreyer
1	APP	Aug 22, 2018	Approved	T. Siver	S. Miller	G. Schreyer

The following is a step by step procedure on how to complete a specific task or meet a facility specific requirement. Standard Operating Procedures (SOPs) are written for all identified critical tasks. By virtue of the hazard or complexity associated with critical tasks it is paramount that the SOP be followed as written. SOPs contain a listing of high-level hazards associated with the task, for detailed hazard analysis reference the applicable Task Hazard Assessments. SOPs do not replace the requirements contained in the company Standards, Codes, and Processes nor does it replace the need to comply with required legislation. Section 8.0 references documentation that the worker shall understand before work commences.

1.0 PURPOSE

- To establish a company standard to safely and effectively carry out work as it applies to working on or around off the road (OTR) equipment with damaged tires.

2.0 SCOPE AND APPLICATION

- This document applies to all company Heavy Construction Mining operations. Ensure all site-specific requirements are being met or exceeded before performing the task.

3.0 HAZARDS AND CONTROLS

- Rapid tire deflation causing personal injury and or equipment damage.
    - Before working on or around off the road (OTR) equipment, visually inspect all tires for damages and low pressure.
        - (a) If a tire appears damaged with a medium or medium to high risk of failure, notify supervision, tire technician or tire competent person to determine next steps. Reference Tire Damage – Risk of Tire Failure Guideline (Appendix A) to determine risk of failure. Note: only a competent person is permitted to deflate or inflate OTR equipment tires.
        - (b) If a tire appears to be low pressure, notify supervision, tire technician or tire competent person for further inspection. A tire competent person will use the Low Tire Pressure Flowchart (Appendix B) to determine if and when a tire is safe to return to service or work around. Note: only a competent person is permitted to deflate or inflate OTR equipment tires.
    - Damaged tires should not be positioned on the front of haul trucks. As tire damage increases, the tires will be moved to appropriate rear positions.
    - Operators will complete pre-operation equipment inspections. If a tire appears damaged, operators will notify supervision and record damage in inspection book. Maintenance will complete a follow up inspection of tire to determine risk of failure.
    - Prior to bringing equipment to maintenance yards, facilities or other areas where personnel are working, ensure tires have been inspected to determine if damage is present.

General Note:

The risk of tire failure due to damage may increase based on operating conditions such as long hauls, high payloads and wet road conditions. If for any reason, a worker is unsure of the safety of the tire they must notify their supervisor immediately for inspection and follow up.

4.0 CHECKLIST

- ☐ Attend all preparatory meetings (IE: daily PSI; job scope; review of JSA's and SOP's for the job).
- ☐ Complete FLRA cards before starting the work.
- ☐ Ensure all personnel involved in the task are aware of the hazards and the controls to be used, as identified in the SOP's; JSA's; and FLRA's.
- ☐ Conduct a pre-job inspection of all equipment to be worked on and tools to be used.
- ☐ **Standard of Training required for working on this job: On-the job training.**

5.0 DEFINITIONS

5.1 Company

Means North American Construction Group Ltd. (NACG) and all directly or indirectly owned subsidiary companies, including joint ventures.

5.2 Company Personnel

Includes the Company's employees, officers, directors, agents, associates, consultants/contractors, temporary employees, and third-party processors.

5.3 HSE

Refers to the Health, Safety & Environment department.

6.0 PROCEDURE

1) Inspect all off the road (OTR) tires before working on or around equipment.
2) If tire pressure appears to be low or tire appears to be damaged with a medium to high risk of failure, notify supervision or tire technician for further inspection and action.
3) If tire(s) appear to be damaged, reference Tire Damage – Risk of Tire Failure Guideline (Appendix A) and determine risk of failure. If tire pressure appears to be low, follow steps outlined in Low Tire Pressure Flow Chart (Appendix B). Note: only a competent person is permitted to inflate or deflate OTR equipment tires.
4) Operators will notify supervision of all tire damages on equipment. Maintenance will complete a follow up inspection of tire to determine risk of failure.

7.0 NOTES

If this task is to be done by a method different than described in this SOP, the work must **STOP** and the alternate method must be **DOCUMENTED** with an adequate hazard assessment tool such as a JSA. The document must be **APPROVED** by a supervisor before such procedures are implemented.

8.0 REFERENCES

- Kal Tire – Tire & Wheel Inspection Criteria Guide
- Alberta Occupational Health and Safety Act, Regulation and Code – {Part 2, Hazard Assessment, Elimination and Control}
- Health, Safety and Reclamation Code for Mines in British Columbia – {Part 4.9.14 Tires and Rims}

9.0 APPENDICES

- Appendix A – Tire Damage – Risk of Tire Failure Guideline
- Appendix B – Low Tire Pressure Flow Chart

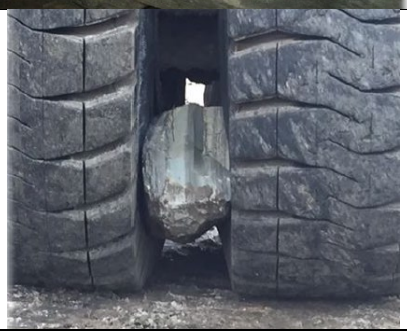
Appendix A Tire Damage – Risk of Tire Failure Guideline

NOTE: This **guideline** is to be used in consultation with supervision, Tire Technician or other competent person knowledgeable of tire hazards and safety prior to determining the actual or potential risk of tire failure.

LOCATION	DAMAGE DESCRIPTION	PICTURE	RISK OF FAILURE	ACTIONS
TREAD	Tread separation with visual deformation of casing		**Medium to High**	Notify supervision or tire technician. Competent person to deflate to 10 psi.
	Tread cut separation, three lugs or less.	**No picture.**	**Medium**	Notify supervision or tire technician for further inspection.
	Tread cut separation, four lugs and more.	**No picture.**	**Medium to High**	Notify supervision or tire technician. Competent person to deflate to 10 psi.
	Tread lug missing, no visible steel (cosmetic).		**Low**	No action, tire is safe to work around.
	Tread lug missing, visible steel no cords broken.		**Medium**	Notify supervision or tire technician for further inspection.

LOCATION	DAMAGE DESCRIPTION	PICTURE	RISK OF FAILURE	ACTIONS
TREAD	Tread lug missing, visible steel cords broken, second layer exposed 12 inches in length or greater.		**Medium to High**	Notify supervision or tire technician. Competent person to deflate to 10 psi.
	"Puffer"	**No Picture.** Damage may not always be visible and may present itself as a "puffer" or rapid loss of air with each tire revolution.	**Medium**	Notify supervision or tire technician for further inspection.
SIDEWALL	Sidewall bulge in any area.		**Medium to High**	Notify supervision or tire technician. Competent person to deflate to 10 psi.
	Cut reaching any visible sign of casing ply cable exposure (steel visible).		**Medium to High**	Notify supervision or tire technician. Competent person to deflate to 10 psi.
	Cut clusture (spider cuts) no cords visible in turn up area.		**Medium**	Notify supervision or tire technician for further inspection.

SIDEWALL	Cut clusture (spider cuts) no cords visible NOT in turn up area.		**Low**	No action, tire is safe to work around.
	Cut migrating to the flange and bead area (steel visible).	**No picture.**	**Medium to High**	Notify supervision or tire technician. Competent person to deflate to 10 psi.
	Cut migrating to the flange and bead area (NO steel visible).	**No picture.**	**Medium**	Notify supervision or tire technician for further inspection.
	Cut breeching the casing ply cables.	**No picture.**	**Medium to High**	Notify supervision or tire technician. Competent person to deflate to 10 psi.
LOCATION	**DAMAGE DESCRIPTION**	**PICTURE**	**RISK OF FAILURE**	**ACTIONS**
SIDEWALL	Sidewall turn up separation if larger than two (2) inches.		**Medium to High**	Notify supervision or tire technician. Competent person to deflate to 10 psi.

SIDEWALL	Sidewall turn up separation if SMALLER than two (2) inches.		**Medium**	Notify supervision or tire technician for further inspection.
SIDEWALL	Cut five (5) inches plus.		**Low**	No action, tire is safe to work around.
SIDEWALL	Rock stuck between duals.		**Medium to High**	Notify supervision or tire technician for rock removal following appropriate SOP and JSA.

Appendix B Low Tire Pressure Flow Chart