CODE OF PRACTICE NO. 29

Code of practice for the safe operation of machinery, plant and equipment and instructions regarding the examination, testing and logging procedures for machinery, plant and equipment.

Compiled by:

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GRM Standard – E 8

Date	Approved by	Modification
2002	S. Macozoma	Initial Issue

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PREFACE TO THIS NEW ISSUE

Transnet regards the proper use of its plant and equipment and the maintenance thereof in a proper and sound manner, as extremely important.

General Machinery Regulation 4 of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) requires that an employer (Transnet) shall ensure that every person authorised to operate machinery is fully aware of the dangers attached thereto, and is conversant with the precautionary measures to be taken or observed to obviate such dangers.

This Code of Practice was compiled to assist and advise the line managers / supervisors and employees on the safe and proper use and maintenance of the relevant machinery, plant and equipment (mainly in use for lifting purposes), based on the principles of best engineering practices.

Your commitment is essential and all well conceived actions to achieve these objectives have my full approval.

MANAGING DIRECTOR
TRANSNET LIMITED

TABLE OF CONTENTS

Part 1. Policy

Part 2. Administrative Instructions

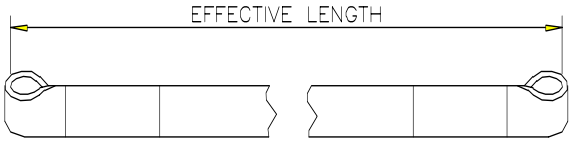
Part 3 : Equipment Instructions

AMENDMENT INFORMATION

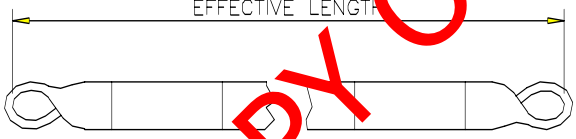
DATE	SCOPE	ISSUE(Am)	BRIEF DESCRIPTION OF AMENDMENT
1997-01-05	Complete Code of Practice	1(0)	Initial release of Issue 96/1 of Code of Practice No. 29

AMENDMENT INFORMATION (Cont.…)

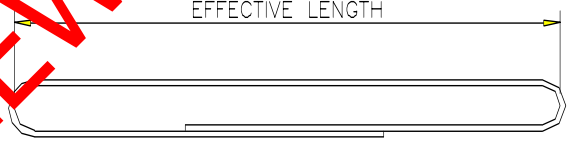
DATE	SCOPE	ISSUE(Am)	BRIEF DESCRIPTION OF AMENDMENT



SINGLE SLING WITH SOFT EYE. FLAT SEWN

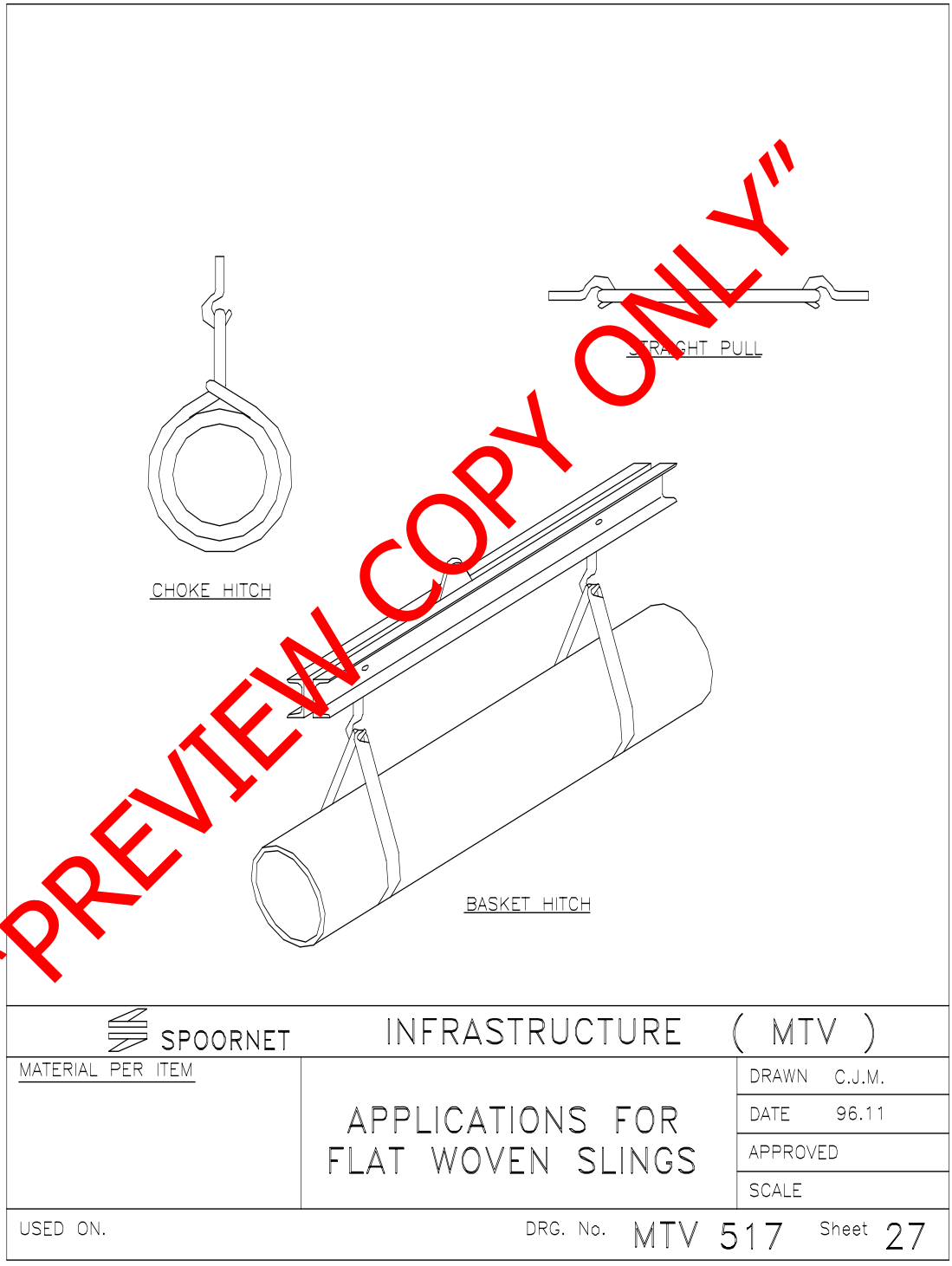


SINGLE LEG SLING WITH SOFT EYE. FOLDED AND SEWN. (BECKETED)

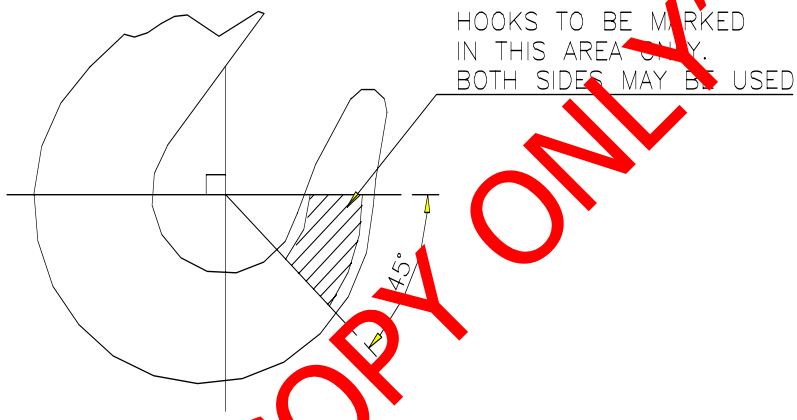


ENDLESS SLING

SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	TYPES OF FLAT WOVEN SLINGS	DRAWN C.J.M. DATE 96.11 APPROVED SCALE
USED ON.	DRG. No. MTV 517	Sheet 26

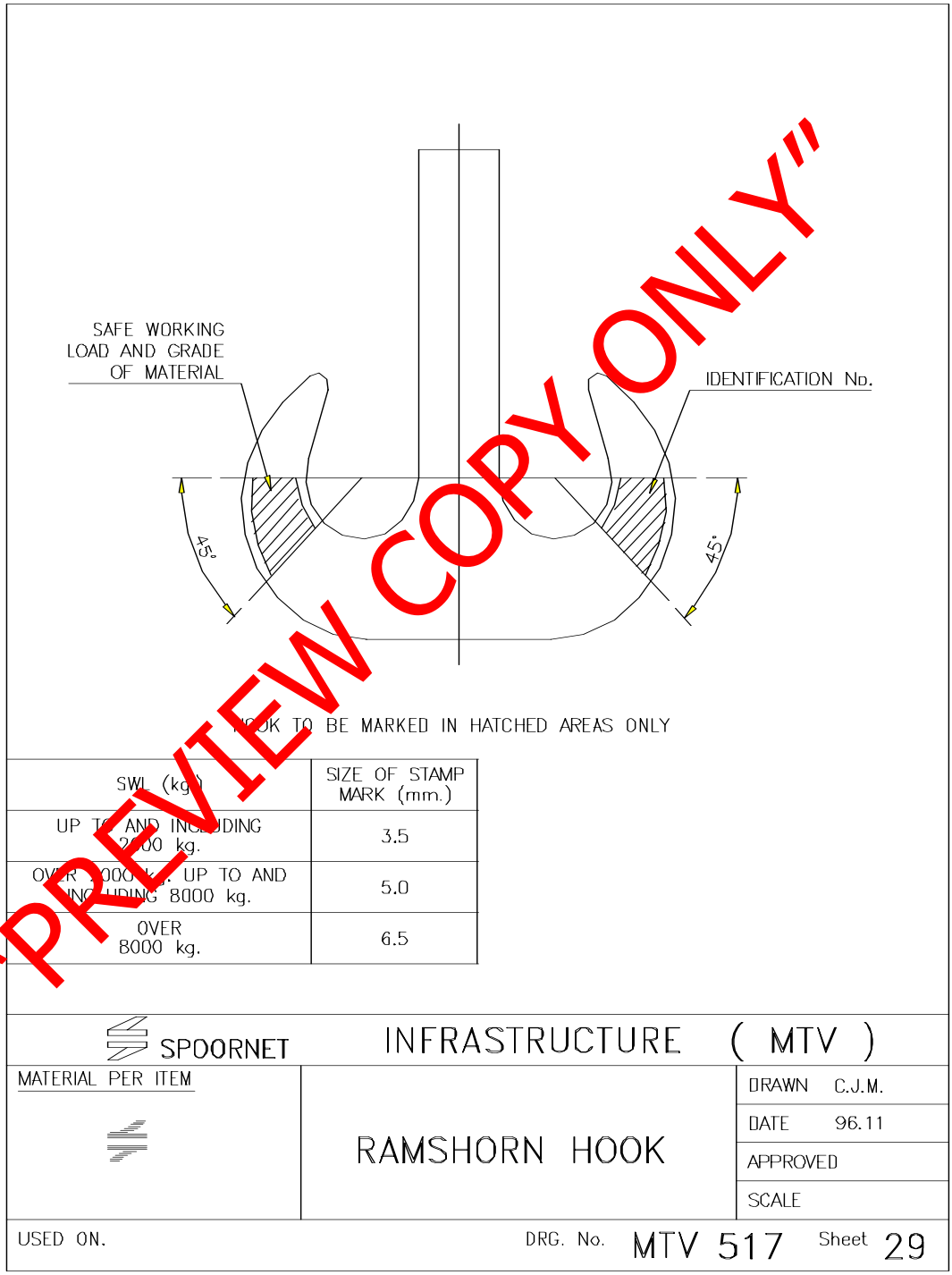


SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	APPLICATIONS FOR FLAT WOVEN SLINGS	DRAWN C.J.M. DATE 96.11 APPROVED SCALE
USED ON.	DRG. No. MTV 517	Sheet 27



SWL (kg.)	SIZE OF STAMP MARK (mm.)
UP TO AND INCLUDING 2000 kg.	3.5
OVER 2000 kg. UP TO AND INCLUDING 8000 kg.	5.0
OVER 8000 kg.	6.5

SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	HOOK	DRAWN C.J.M.
		DATE 96.11
		APPROVED
		SCALE
USED ON.	DRG. No. MTV 517	Sheet 28



HOOK TO BE MARKED IN HATCHED AREAS ONLY

SWL (kg.)	SIZE OF STAMP MARK (mm.)
UP TO AND INCLUDING 2000 kg.	3.5
OVER 2000 kg. UP TO AND INCLUDING 8000 kg.	5.0
OVER 8000 kg.	6.5

SPOORNET INFRASTRUCTURE (MTV)

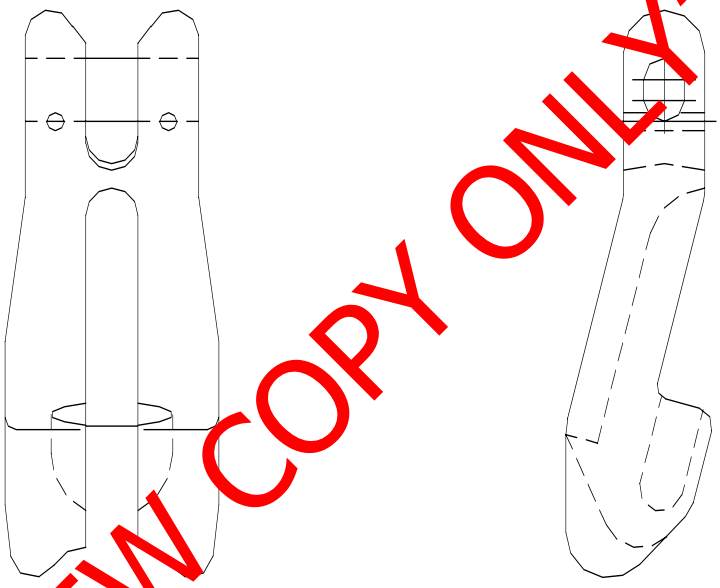
MATERIAL PER ITEM

RAMSHORN HOOK

DRAWN C.J.M.
DATE 96.11
APPROVED
SCALE

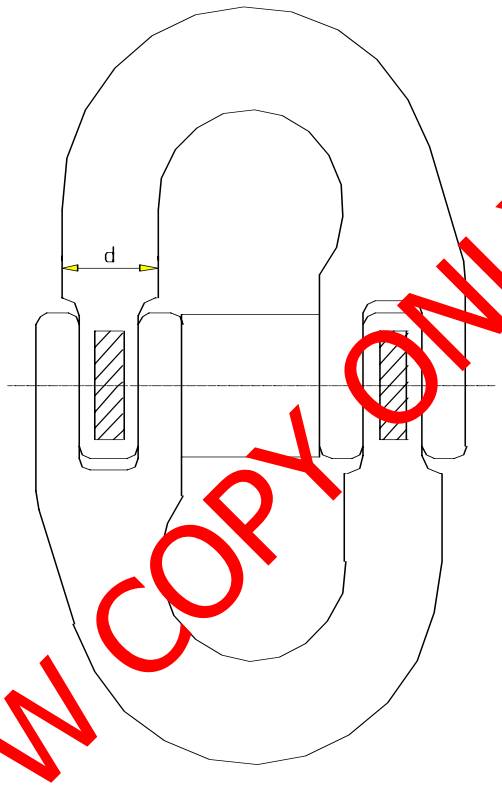
USED ON.

DRG. No. MTV 517 Sheet 29



NO MARKING ALLOWED

SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	SHORTENING CLUTCH	DRAWN C.J.M.
		DATE 96.12
		APPROVED
		SCALE
USED ON.	DRG. No. MTV 517	Sheet 30



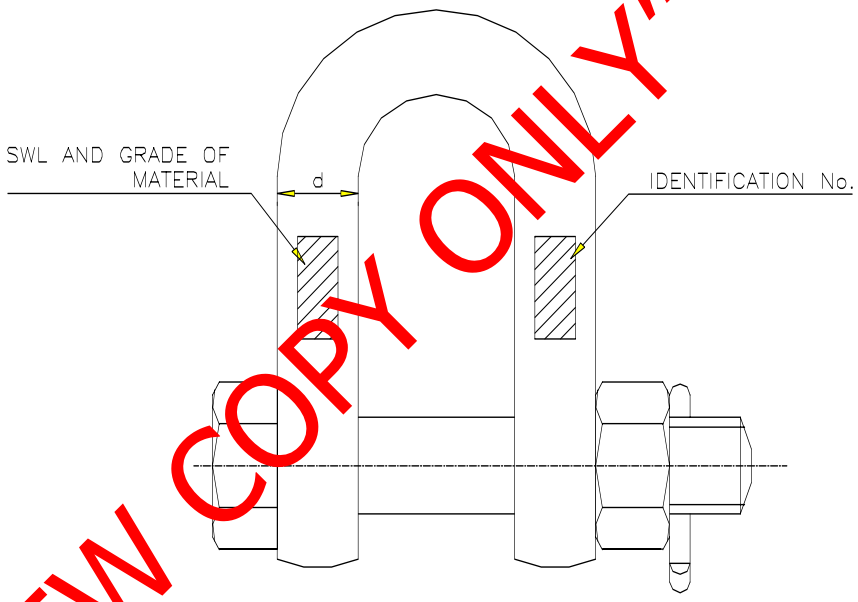
CONNECTING LINK TO BE MARKED IN HATCHED AREAS ONLY

DIAMETER "d" (mm.)	SIZE OF STAMP MARK (mm.)
FROM 8 mm. UP TO AND INCLUDING 16 mm.	3 mm.
OVER 16 mm. UP TO AND INCLUDING 22 mm.	4 mm.
OVER 22 mm. UP TO AND INCLUDING 31 mm.	6 mm.
OVER 31 mm.	8 mm.

SPOORNET INFRASTRUCTURE (MTV)

MATERIAL PER ITEM	CONNECTING LINK	DRAWN C.J.M.
		DATE 97.01
		APPROVED
		SCALE

USED ON. DRG. No. MTV 517 Sheet 32



SHACKLE TO BE MARKED IN HATCHED AREAS ONLY

DIAMETER "d" (mm.)	SIZE OF STAMP MARK (mm.)
UP TO AND INCLUDING 12.5 mm.	3.5 mm.
OVER 12.5 mm. UP TO AND INCLUDING 25 mm.	5 mm.
OVER 25 mm.	6.5 mm.

SPOORNET INFRASTRUCTURE (MTV)

MATERIAL PER ITEM

DEE SHACKLE

DRAWN C.J.M.

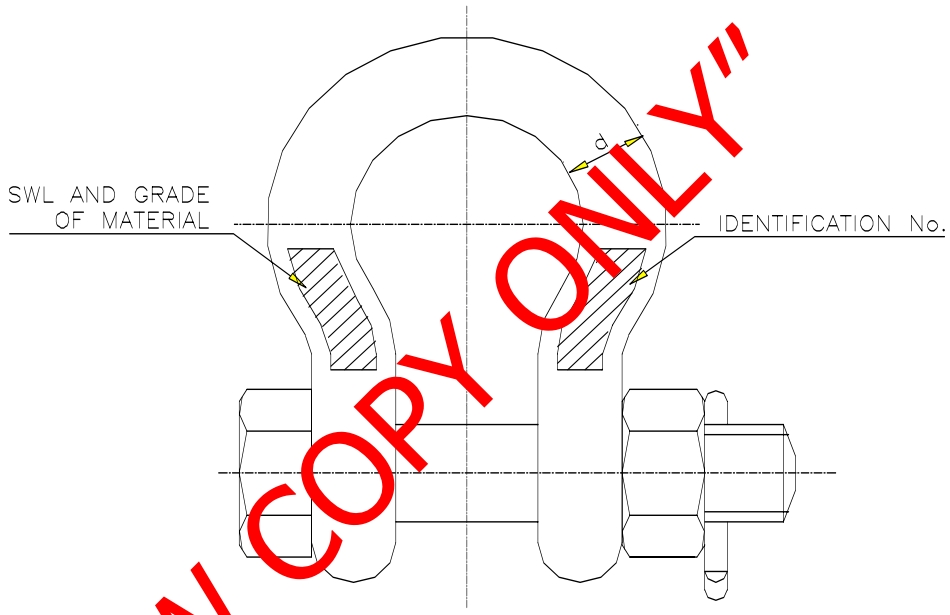
DATE 97.01

APPROVED

SCALE

USED ON.

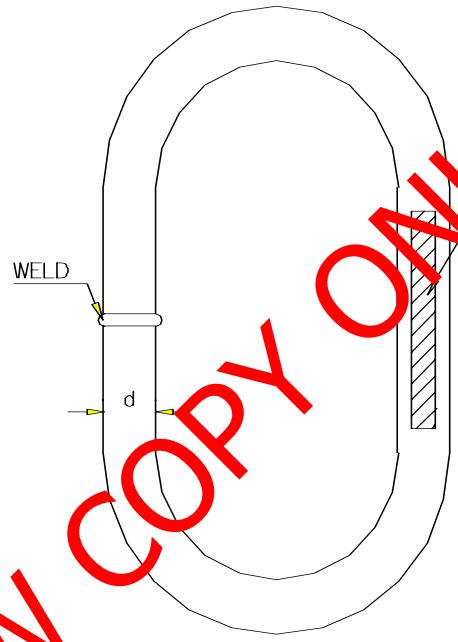
DRG. No. MTV 517 Sheet 33



SHACKLE TO BE MARKED IN HATCHED AREAS ONLY

DIAMETER "d" (mm.)	SIZE OF STAMP MARK (mm.)
UP TO AND INCLUDING 12.5 mm.	3.5 mm.
OVER 12.5 mm. UP TO AND INCLUDING 25 mm.	5 mm.
OVER 25 mm.	6.5 mm.

SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	BOW SHACKLE	DRAWN C.J.M. DATE 97.01 APPROVED SCALE
USED ON.	DRG. No. MTV 517	Sheet 34

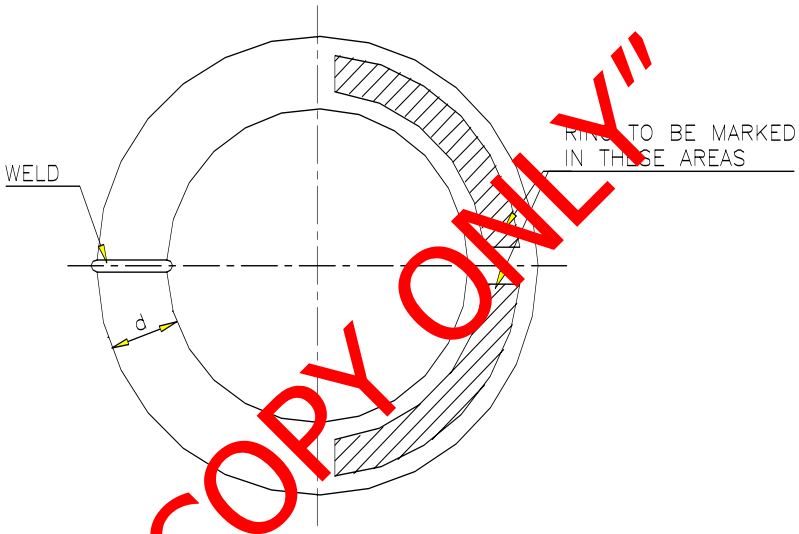


STAMPING MARKS ON OR NEAR WELDING JOINT SHOULD BE AVOIDED

DIAMETER "d" (mm.)	SIZE OF STAMP MARK (mm.)
UP TO AND INCLUDING 12.5 mm.	3.5 mm.
OVER 12.5 mm. UP TO AND INCLUDING 25 mm.	5 mm.
OVER 25 mm.	6.5 mm.

SPOORNET INFRASTRUCTURE (MTV)

MATERIAL PER ITEM	OVAL LINK	DRAWN C.J.M.
		DATE 97.01
		APPROVED
		SCALE
USED ON.	DRG. No. MTV 517	Sheet 35



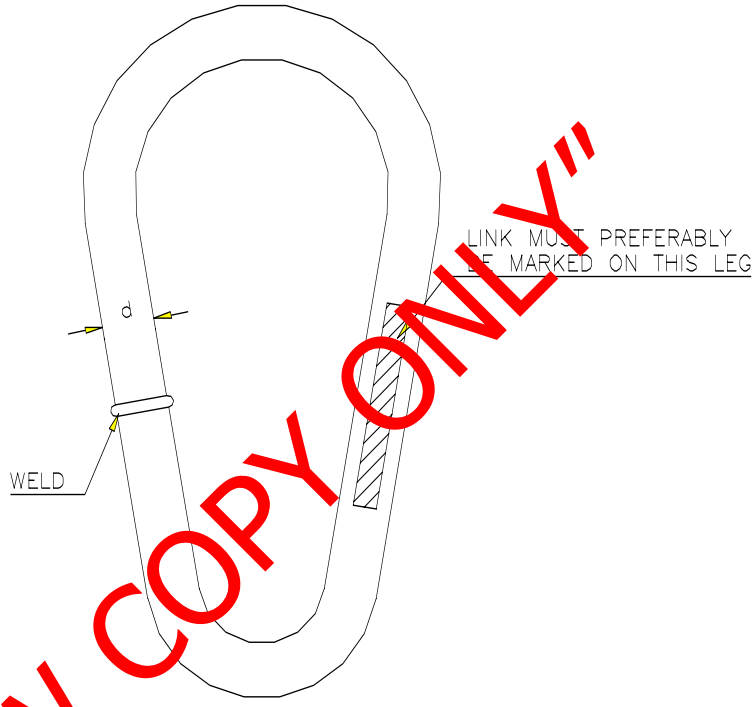
STAMP MARKING OF THE RING SHALL NOT BE ON OR NEAR THE WELD

DIAMETER "d" (mm.)	SIZE OF STAMP MARK (mm.)
UP TO AND INCLUDING 12.5 mm.	3.5 mm.
OVER 12.5 mm. UP TO AND INCLUDING 25 mm.	5 mm.
OVER 25 mm.	6.5 mm.

SPOORNET INFRASTRUCTURE (MTV)

MATERIAL PER ITEM	RING	DRAWN C.J.M.
		DATE 97.01
		APPROVED
		SCALE

USED ON. DRG. No. MTV 517 Sheet 36



STAMPING MARKS ON OR NEAR WELDING JOINT SHOULD BE AVOIDED

DIAMETER "d" (mm.)	SIZE OF STAMP MARK (mm.)
UP TO AND INCLUDING 12.5 mm.	3.5 mm.
OVER 12.5 mm. UP TO AND INCLUDING 25 mm.	5 mm.
OVER 25 mm.	6.5 mm.

SPOORNET INFRASTRUCTURE (MTV)

MATERIAL PER ITEM

EGG LINK

DRAWN C.J.M.

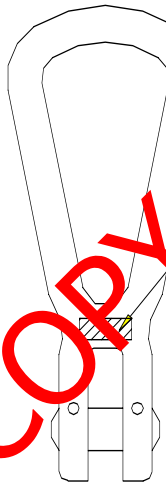
DATE 97.01

APPROVED

SCALE

USED ON.

DRG. No. MTV 517 Sheet 37



SIZE OF STAMP MARK – 3.5 mm.

SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	REEVABLE EGG LINK	DRAWN C.J.M.
		DATE 97.01
		APPROVED
		SCALE
USED ON.	DRG. No. MTV 517	Sheet 38

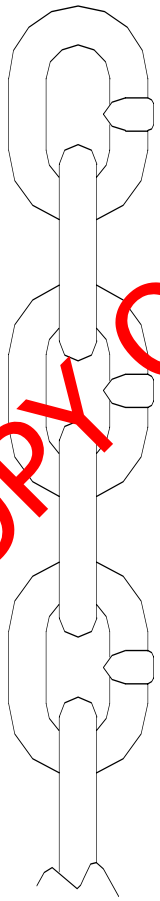
BOLT TO BE MARKED IN HATCHED AREAS ONLY

SWL (kg.)	SIZE OF STAMP MARK (mm.)
UP TO AND INCLUDING 500 kg.	3.5 mm.
OVER 500 kg. UP TO AND INCLUDING 1000 kg.	5 mm.
OVER 1000 kg.	6.5 mm.

SPOORNET INFRASTRUCTURE (MTV)

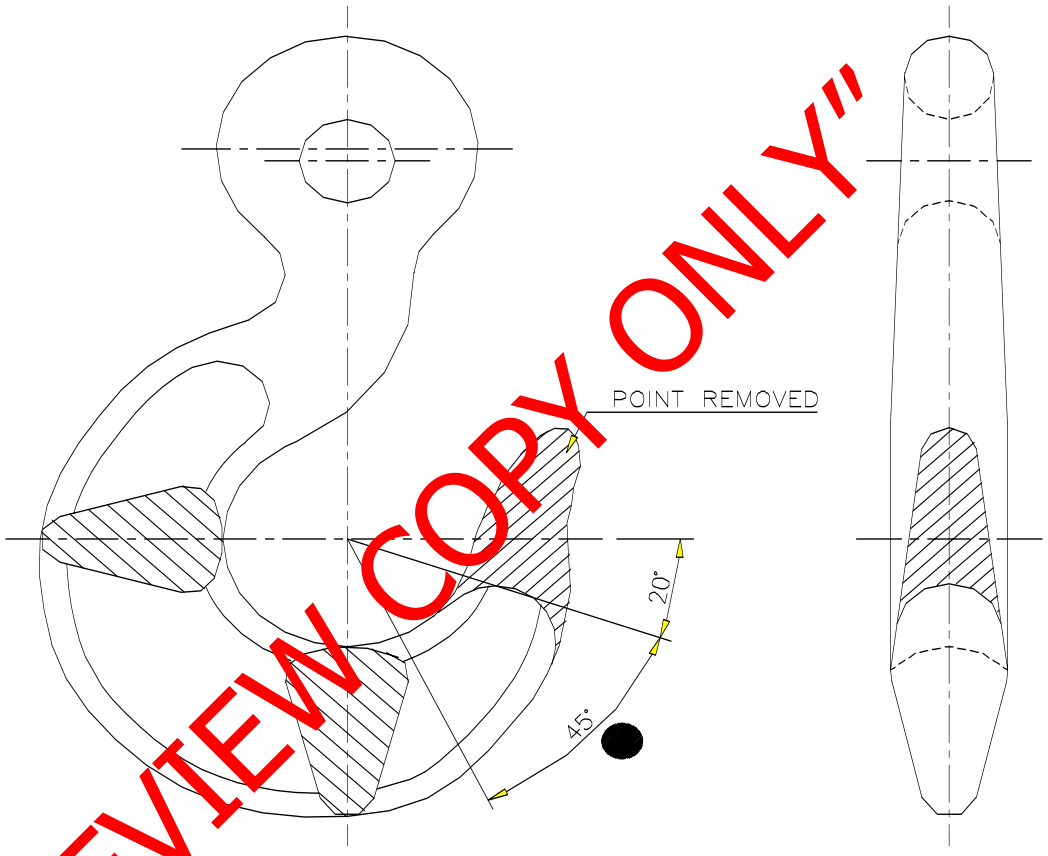
MATERIAL PER ITEM	EYE BOLT	DRAWN C.J.M.
		DATE 97.01
		APPROVED
		SCALE

USED ON. DRG. No. MTV 517 Sheet 39



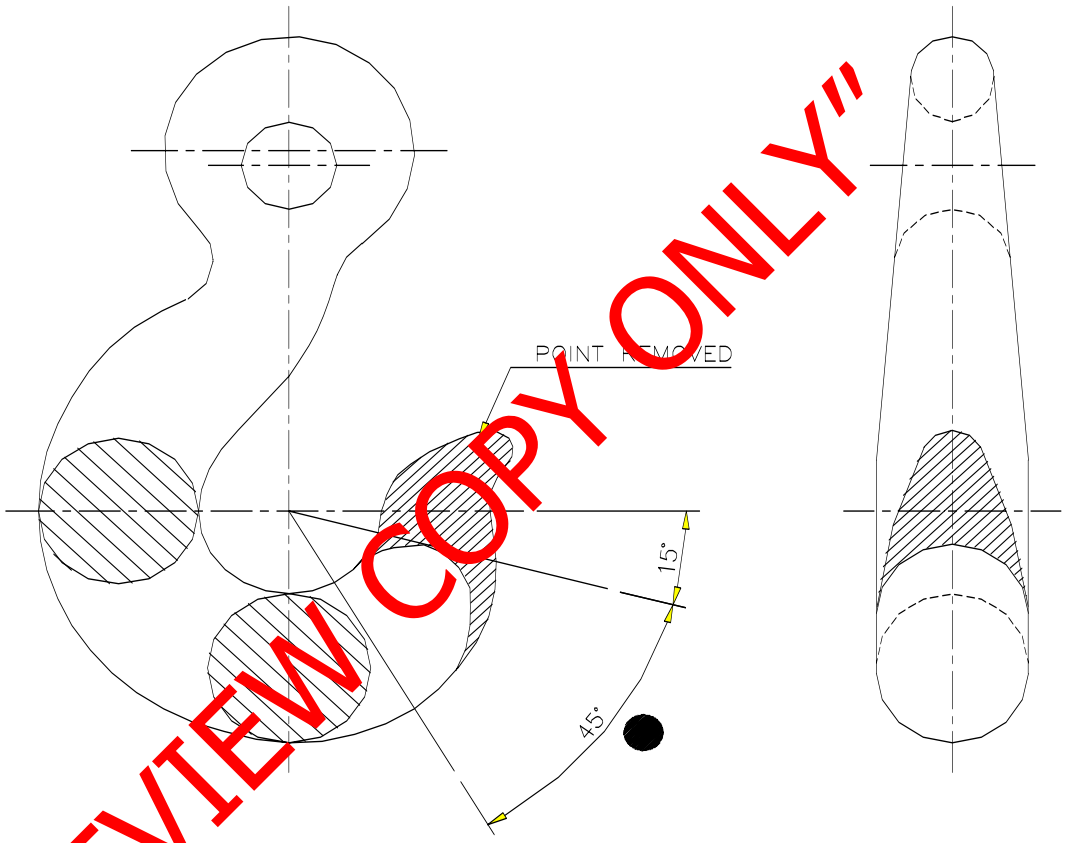
NO MARKING ALLOWED

SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	CHAIN	DRAWN C.J.M.
		DATE 97.01
		APPROVED
		SCALE
USED ON.	DRG. No. MTV 517	Sheet 40



● HOOKS TO BE MARKED IN THIS AREA ONLY.
BOTH SIDES MAY BE USED
SIZE OF STAMP MARK AS INDICATED ON
DRG. No. MTV 517 SHEET 28

SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	MODIFICATION TO HOOK FOR BREAKDOWN PURPOSES	DRAWN C.J.M. DATE 97.01 APPROVED SCALE
USED ON.	DRG. No. MTV 517	Sheet 41



● HOOKS TO BE MARKED IN THIS AREA ONLY.
BOTH SIDES MAY BE USED
SIZE OF STAMP MARK AS INDICATED ON
DRG. No. MTV 517 SHEET 28

SPOORNET	INFRASTRUCTURE (MTV)	
MATERIAL PER ITEM	MODIFICATION TO HOOK FOR BREAKDOWN PURPOSES	DRAWN C.J.M. DATE 97.01 APPROVED SCALE
USED ON.	DRG. No. MTV 517	Sheet 42

FORM A-1 **AMENDMENT PROPOSAL** **Register no: _____**

1. **Document to be changed**:

1.1 **Number, Page, Subject, Section, Title, etc. (in any order)**

2. **Proposal:**

_____
_____

_____
_____

_____
_____

3. **Proposed by:**

_____
_____

4. **Date:** _____/_____/_____

5. **Signature:** _____

6. **Date acted** _____/_____/_____

7. **Signature:** _____

FORM A-2 **EQUIPMENT CENSUS FORM** **Register no:** _____

1. Asset no. _____

2. Brief description _____

_____

_____

3. Category e.g. Overhead Electric crane, sling etc.

_____

4. Manufacturer _____

5. Serial No. _____

6. Year of manufacture _____

7. Capacity _____

8. Centre _____

9. Owner _____

10.Maintenance dept. address _____

_____

11.Date of last logsheet entry _____

_____

12.Date of last performance test _____

_____

13.Other relevant information _____

_____

_____

_____

_____

14.Rough sketch of equipment

_____	_____	_____	
Signature	Name	Pension No.	Telephone No.

CODE OF PRACTICE No.29

TRANSNET

FORM A-3 DEFECT REPORT Register no: _____

TO : General Manager
Spoornet
Engineering
JOHANNESBURG

FROM _____
_____
_____
_____

REF.: _____

DATE _____

REPORT ON DEFECT OCCURING ON NEW PLANT/MOTOR VEHICLES OR UNSATISFACTORY DEALER SERVICE (INCLUDING SUPPLY OF SPARE PARTS)

VEHICLE
OR MACHINE NO. _____ SERIAL NO. ENGINE _____ CHASSIS _____
MAKE _____ TYPE _____ MODEL _____
NAME OF SUPPLIER _____
CONTRACT ORDER NO. _____ VEHICLE OR MACHINE HOURS OR KILOMETRES DISTANCE TO
DATE OF FAILURE _____

DATE RECEIVED	DATE FAILED	DATE REPORTED TO LOCAL AGENT	DATE WITHDRWN FROM SERVICE	DTE RETURNED TO SERICE
Y Y M M D D	Y Y M M D D	Y Y M M D D	Y Y M M D D	Y Y M M D D

DEPOT OR LOCATION
OF MACHINE _____ NUMBER OF DAY OUT OF SERVICE _____
DETAILS OF FAILURE OR DEALERS SERVICE _____
_____
LOCAL AGENTS NAME _____
ACTION TAKEN BY LOCAL AGENTS _____
_____
HAS DEFECTIVE PART BEEN REPLACED OR MODIFIED IN ANY WAY _____
_____
IF REPAIRED DEPARTMENTALLY STATE : WORKS ORDER NO. _____
LABOUR R _____ MATERIAL R _____ INDIRECTS R _____
WHERE CAN DEFECTIVE PARTS BE INSPECTED _____
==========

SUPERVISOR'S SUGGESTIONS _____
_____

---------- TECHNICAL SUPERVISOR

WORKSHOP
==========

Comments _____
_____

GENERAL MANAGER (ENGINEERING)

CODE OF PRACTICE No.29

TRANSNET

FORM A-4 TRANSNET LOGSHEET No. 9

Certificate and logsheet for machinery, plant and equipment TRANSNET

Depot _____ Place _____ Description _____ Logsheet No. 9/ _____

Date of Examination	Examiners remarks on condition	Initialled by Examiner	Initialled by User	Work performed or reasons why work held in abeyance	Date	Initialled by Work done by	Initialled by Supervisor	Initialled by User

Expiry date

CODE OF PRACTICE No.29

TRANSNET

FORM A-5 **TRANSNET LOGSHEET No. 10**

Certificate and logsheet for wire and fibre ropes and slings TRANSNET

Logsheet No. 10/

Depot Place Certificate no. and date of new rope

Manufacturers name

Type (Material)	Rope symbol number	Size of sling (diameter)	Length of sling	SWL in Kilograms	No. of legs	Number of sling and suffixes of components

Date of Examination	Examiners Remarks on condition	Initialled by Examiner	Initialled by User	Date of Examination	Examiners remarks on condition	Initialled by Examiner	Initialled by User

CODE OF PRACTICE No.29

TRANSNET

FORM A-6 **TRANSNET LOGSHEET No. 66**

Certificate and logsheet for crane hoist chains, chain slings, hooks, rings, links, shackles, etc.

TRANSNET

Logsheet No. **66/**

Depot	Place	Description of unit	Safe working load in kg	Total number of components	Number of unit

Description of components	Quantity	Suffixes of components	Safe Working Load (kg)	Material	Chains - Length x diameter	Other components - Drawing number or specification

FOR USE OF SUPERVISOR'S EXAMINER				FOR USE OF DEPARTMENT CONDUCTING TEST				
Date of examination	Condition of unit and nature of repairs	Examiner	User	Date	Safe working load(kg)	Test load	Examined by	User
							Expiry date	

CODE OF PRACTICE No.29

FORM A-7 DAILY TASK FOR LIFTING EQUIPMENT (Logsheet No. 385)

Mechanical lifting and handling appliances TRANSNET

Logsheet No. 385/ _____

Date _____

Machine No. _____ Shift commenced _____

Type of machine _____

Drivers surname and initials _____

I have checked or tested the following:

	Yes	No	N/A	Comments
All lights				
All limit switches				
All warning devices				
Communication system				
Fire extinguishers				
All brakes / Emergency brakes				
All wires / chains				
Hook assembly				
Spreader				
Grab				
All conveyor belts				
Electrical equipment				
Escape rope				
Machine in general				
Daily task				
Lubrication				
Hour / km reading				
Other				

Drivers signature _____

Defects during shift	Defects repaired

Artisan's signature _____ Date _____

The machine was / was not in a good condition at the end of my shift Time _____

Drivers signature _____ Date _____

Asst. crane foreman/ supervisor's signature _____ Date _____

Visitor's signature, grade, purpose of visit

_____

_____

_____

Crane foreman/ supervisor's signature _____ Date _____

TRANSNET

FORM A-8 INDIVIDUAL EXEMPTION AUTHORISATION

1	**Equipment Details:**	
	1.1 Census register No.	
	1.2 Asset No.	
	1.3 Description	
	1.4 Centre	
2	**Details of operations manager:**	
	2.1 Business unit	
	2.2 Controlling officer	
	2.3 Maintenance supervisor	
3	**Details of exemption request**	
	3.1 Date required	
	3.2 Nature of exemption	
4	**Details of exemption authority**	
	4.1 Granted by:	

4.2 Concurred by:	
4.3 Pr Eng. No:	

Signatures

Manager	Professional Engineer

FORM A-9 REQUEST FOR INDIVIDUAL EXEMPTION AUTHORISATION

1	**Equipment Details:**	
	1.1 Census register No.	
	1.2 Asset No.	
	1.3 Description	
	1.4 Place	
2	**Details of operations manager:**	
	2.1 Business unit	
	2.2 Controlling officer	
	2.3 Maintenance supervisor	
3	**Details of exemption request**	
	3.1 Date required	
	3.2 Nature of exemption	
	3.3 Reasons exemption is required	
4	**Possible alternatives**	
	4.1 Other equipment at depot.	

4.2 Other handling alternatives	
Signatures	

Operations Manager	Maintenance Supervisor

FORM A-10 STOP CERTIFICATE

1	**Equipment Details:**	
	1.1 Census register No.	
	1.2 Asset No.	
	1.3 Description	
	1.4 Place	
2	**Details of operations manager:**	
	2.1 Business unit	
	2.2 Operations Manager	
	2.3 Maintenance supervisor	
3	**Reasons for issuing of stop certificate**	

Signatures	
Operations Manager	**Issuing officer**

CODE OF PRACTICE No.29

TRANSNET

FORM A-11 INCIDENT AND ANALYSIS REPORT

INCIDENT AND ANALYSIS REPORT

UNIQUE INCIDENT NUMBER: | | | | | | | | | | | | | | | | | | | | | |
X1 HEAD | Y | Y | M | M | CONSECUTIVE | CENTRE OR LOCALITY CODE

DEFINITION: AN UNDESIRED EVENT WHICH COULD OR DOES RESULT IN A LOSS TO PROPERTY, HARM TO PEOPLE OR LOSS TO PROCESS

DETAILS OF PERSON INVOLVED OR INJURED

1 TRANSPORT BUSINESS
2 RELATED / OTHER BUSINESS
3 CENTRE
4 SECTION
5 SUBSECTION
6 DATE OF INCIDENT (Y Y Y Y M M D D)
7 TIME OF INCIDENT :
8 TIME REPORTED :
9 LOCATION OF INCIDENT
10 WITNESS OF INCIDENT
11 MAIN INCIDENT CLASSIFICATION
12 DESCRIPTION OF INCIDENT
13 CODE OF INCIDENT DESCRIPTION (WHERE APPLICABLE)
14 COMMODITY CODE (WHERE APPLICABLE)
14.1 PACKING CODE (WHERE APPLICABLE)

15 INITIAL AND SURNAME
16 EMPLOYEE No. and ID No.
17 GENDER OF PERSON MALE FEMALE
18 DATE OF BIRTH (Y Y Y Y M M D D)
19 EXPERIENCE IN MONTHS IN CURRENT POSITION
20 GRADE
21 NATURE OF INJURY (if any)
22 PART OF BODY AFFECTED
23 NAME OF SUPERVISOR

24 LOSS SEVERITY POTENTIAL OF INCIDENT	HIGH		MEDIUM		LOW	
25 PROBABLE RECURRENCE OF INCIDENT	HIGH		MEDIUM		LOW	
26 NUMBER OF DAYS LOST	ESTIMATED		ACTUAL			
27 LEGALLY REPORTABLE (Act 85 of 1993)	YES		NO		POSSIBLE	
28 WORKMENS COMPENSATION CLAIM	YES		NO			
29 INSURANCE CLAIM (property)	YES		NO			
30 INSURANCE CLAIM (motor)	YES		NO			
31 INSURANCE CLAIM (3rd party)	YES		NO		POSSIBLE	
32 INSURANCE CLAIM (freight)	YES		NO		POSSIBLE	
33 MAJOR LOSS ANNOUNCEMENT	YES		NO			

COMPLETED BY (print) TEL No. DATE
DETAILED SCAT ANALISYS DONE YES NO BY (NAME) TARGET DATE
DESIGNATED CONTROLLING OFFICER

FORM A-12 REGISTRATION CERTIFICATE FOR EXAMINERS

_____
Number

TRANSNET

Code 29

Registration Certificate

For

Examiners

of Machinery, Plant and Equipment

Name

Trade Qualification

The examiner has the responsibility to report all defects that he/she may find during the examination/testing of any particular piece of machinery, plant and equipment and note it in the relevant logsheet.

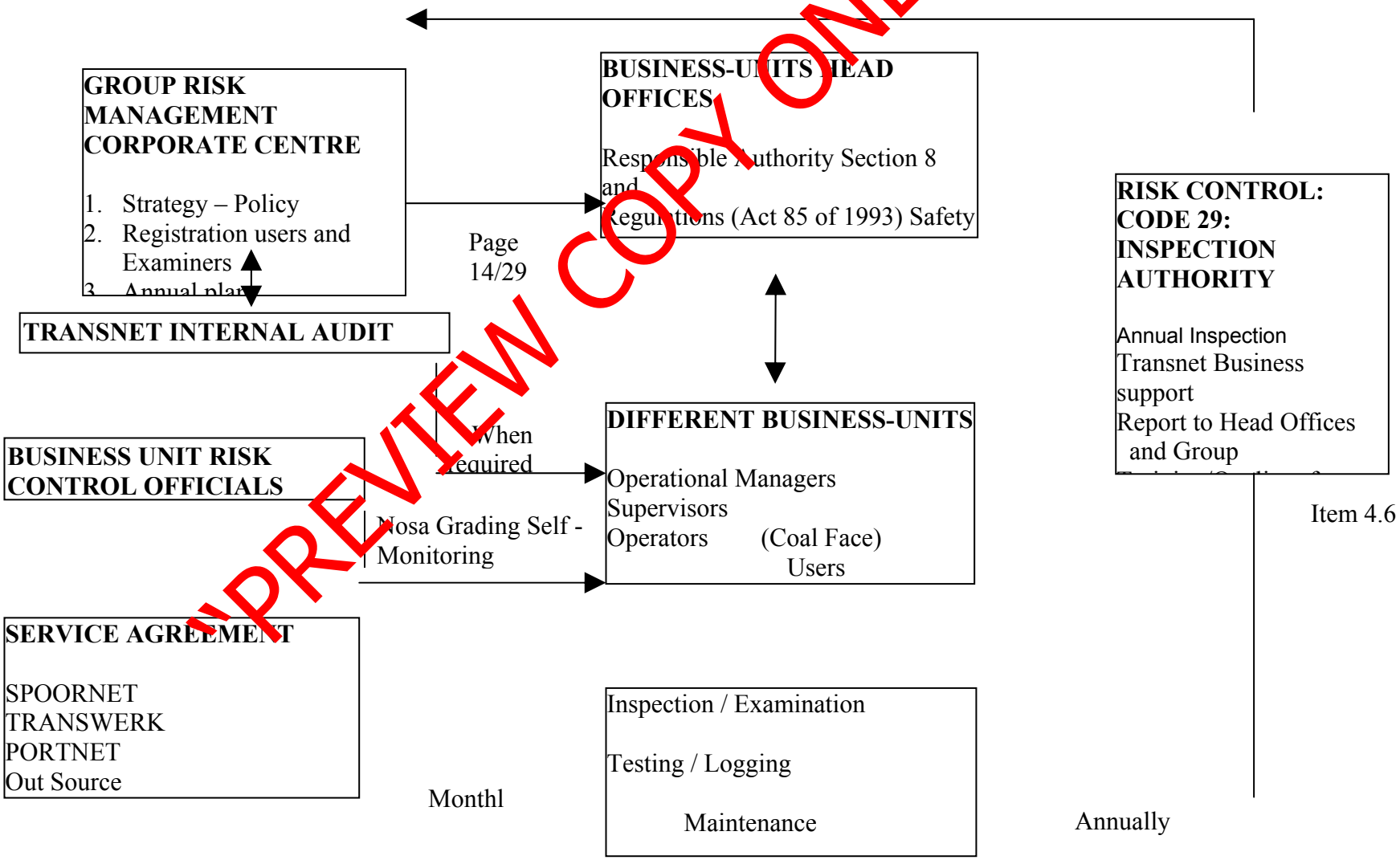
Group Risk Manager
Transnet

CODE OF PRACTICE No.29

TRANSNET

FORM A-13 MANAGEMENT SYSTEM

RESPONSIBILITY CHART



CODE OF PRACTICE No.29

TRANSNET

Important = Arrangements for Regular Examinations/ Testing/ Logging/ maintenance
= Database of Lifting Equipment Form A – 2
= Reporting / Logging of Incidents. Transnet's RB 1 A (Blue Book)

Acknowledge Receipt of Code 29 and commitment

To adhere there-to

Name	Emp.No.	Centre	Tel. No.	Fax No.

Code 29 number received: ……

Signature: ……..

Date: ……..

CODE OF PRACTICE NO. 29

Part 1: Policy

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Part 1: Policy

1 PURPOSE

1.1 The purpose of this policy manual is to lay down the basis for safe operation of machinery as well as the philosophy for the examination, testing and logging related to machinery, plant and equipment and thereby reducing the liability exposure of Transnet.

2 INTRODUCTION

2.1 Transnet requires that all fixed assets of which the Company is the owner or user be kept in a good and safe condition, reducing Transnet's risk related to the above mentioned assets as well as optimising its life expectancy. It is therefore necessary that all machinery, plant and equipment periodically be examined to ensure the safe and proper use and maintenance thereof.

2.2 Examinations must be well ordered as it is necessary that these periodic examinations be recorded to ensure that all machinery, plant and equipment is covered, and reports be submitted to the Supervisor for remedial action.

2.3 Care has been taken to ensure that the documentation required by this Code of Practice leaves a proper audit trail for later reference.

2.4 It was endeavoured to compile this code as detailed and yet as generic as possible, so that it can be used by all business divisions/units of Transnet.

3 POLICY

3.1 No piece of machinery, plant or equipment, covered by this Code of Practice, may be used unless it complies with the certification requirements of this Code of Practice and the user of the machinery, plant or equipment is in possession of a valid certificate in terms of this Code of Practice.

3.2 This code shall be supplementary to the Occupational Health and Safety Act (Act 85 of 1993) and without prejudice to the above mentioned act, provide more specific guidelines to promote safety in circumstances applicable to Transnet.

3.3 All machinery plant or equipment owned and/or operated by Transnet must at all times be kept in a serviceable and safe state. This means that regular maintenance and inspections must be done according to

the instructions of this Code of Practice.

3.4 In the case of machinery, plant or equipment not being used or in the case where it is desirable that equipment not be maintained or inspected and tested, such machinery, plant or equipment must be mothballed or scrapped and may not be used until the appropriate instructions of this Code of Practice have been complied with.

3.5 In the case of maintenance done by a private contractor to machinery, plant or equipment owned and/or operated by Transnet, the regular inspections must either be done by an examiner employed by Transnet or by an Independent Inspection Authority acceptable to the General Manager Engineering as well as the Department of Labour.

3.6 Regular inspections of the condition of and audits of the associated documentation of machinery, plant or equipment owned and/or operated by Transnet, will be done.

3.7 Proper records of all incidents, modifications, maintenance and inspections will be kept of all machinery, plant or equipment owned and/or operated by Transnet.

3.8 A central database will be established and maintained by the General Manager Engineering, Spoornet, of all machinery, plant or equipment owned and/or operated by Transnet.

3.9 All examiners and inspectors appointed in terms of this Code of Practice will be independent of the operating as well as maintenance legs of any particular business unit of Transnet. Should this prove to be impossible, impracticable or uneconomic examiners may be placed within the maintenance legs of a business unit but must have a separate reporting line for the inspection function. Further the examiner may not be responsible for examining any equipment where he/she was directly involved with maintenance.

3.10 The user will ensure through the necessary controls and appropriate management techniques that all machinery, plant or equipment owned and/or operated by Transnet and under his control are operated safely and responsibly.

3.11 When this Code of Practice, or parts thereof, is accepted and implemented by the different business divisions/units, the responsibility rests on the relevant business divisions/units to supply the Code of Practice or parts thereof to employees and to ensure that the Code of Practice or parts thereof are understood, applied and adhered to.

3.12 Exemptions from the requirements of any instruction will not necessarily need to be granted only by the General Manager Engineering,

Spoornet, but copies of the exemption authorisations and details of the particular situations, obtained from a ***Professional Engineer***, acceptable to the General Manager Engineering, Spoornet, *(See Definition 2.13 and the associated note in The Administrative Instructions - Page 2-4)*, must be sent to both the General Manager Engineering, Spoornet and the Group Risk Manager, Transnet.

3.13 All exceptional repairs (including welding) or modifications must be authorised by a Professional Engineer. In the case of ***OEM*** approved repairs or modifications the authorisation must be supplied by a ***Professional Engineer*** employed or contracted by the ***OEM***.

3.14 The **General Manager Engineering, Spoornet** is responsible for the **maintenance** of this Code of Practice and **The Group Risk Manager** is responsible for the **administration** of this Code of Practice in terms of it's implementation in Transnet.

3.15 All proposed updates or improvements must be sent to the Group Risk Manager Transnet, who shall refer the matter to the General Manager Engineering, Spoornet. An individual exemption authorisation (Form A8) or an amendment to the Code of Practice will then be issued, if deemed necessary. It must be noted that the particular Business Unit may not work according to their proposed update or improvement until they are in possession of the above mentioned individual exemption authorisation or an amendment to the Code of Practice giving them the permission to do so.

CODE OF PRACTICE NO. 29

Part 2: Administrative Instructions

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Part 2 : Administrative Instructions

1. PURPOSE

1.1 The purpose of the Administrative Instructions is to confirm and regulate all administrative matters regarding the periodical as well as extraordinary (after commissioning repairs, modification, overloads etc.) inspection and testing of equipment within Transnet.

1.2 It also serves to ensure uniformity of action regarding lifting equipment throughout Transnet.

1.3 Finally it serves as a supplement to the Occupational Health and Safety Act, Act 85 of 1993 as well as highlighting and simplifying of pertinent sections and regulations of the OHS Act.

1.4 An additional purpose is to bring this Code of Practice in line with SABS ISO 9000 guidelines.

2. DEFINITIONS/ DESCRIPTIONS (GRAPHICAL AND WRITTEN)

2.1 USER *(Act 85 of 1993)*

"***User***", in relation to plant or machinery, means the person who uses plant or machinery for his own benefit or who has the right of control over the use of plant or machinery, but does not include a lessor of, or any person employed in connection with that plant or machinery.

- *Note: In a Transnet context the **user** could be any of the following :*
  - *The CEO of Transnet;*
  - *The CEO of the particular business unit;*
  - *The particular regional or corridor manager;*
  - *The manager of the particular workshop or depot;*
  - *The **operations manager**;*
  - *The **supervisor***

2.2 OPERATOR

For the purpose of this instruction, and in terms of the Act, the "***Operator***" shall be the person physically operating the plant, equipment or machinery.

An "***Operator***" must be, certified to operate the equipment, physically able to do so and of sound mind. These requirements will be included in the 2 yearly re-testing program.

2.3 SUPERVISOR *(Ref. Old Code 29 Clause B.1,1)*

For the purpose of this instruction, and in terms of the Act, the "Supervisor" shall be the supervisor responsible for the maintenance or examination of the equipment.

2.4 OPERATIONS MANAGER

For the purpose of this instruction, and in terms of the Act, the "Operations Manager" shall be the person with the authority to control the day to day operations of any particular piece of plant, machinery or equipment.

2.5 EXAMINER *(Ref. Old Code 29 Clause B.2,1)*

The ***examiner*** shall be an artisan or similarly ***competent person*** in terms of the Act to undertake the duties as set out in clause 4.3 of the Administrative Instructions of this Code of Practice. He/she will be appointed as such. *(General Machinery Regulation1.(a),(b),(c) and (d)).*

2.6 INSPECTOR

The ***inspector*** shall be a ***competent person*** appointed with the authority, responsibility and duty to determine the safety and condition of all machinery, plant and equipment, audit the related documentation and records as well as the ability of all the personnel involved with operating, maintaining, examining and managing it.

2.7 CHAINBLOCK or BLOCK AND TACKLE *(Act 85 of 1993)*

This is a lifting device consisting of one or more pulley blocks reeved with chains, wire or fibre ropes used solely for the raising and lowering of a load or moving a load horizontally;

2.8 JIB-CRANE *(Act 85 of 1993)*

This is any crane of which the load is supported by a projecting horizontal or inclined member, known as a jib;

- **Note**: *This definition also includes truck mounted cranes e.g. Hiab.*

2.9 LIFTING MACHINE *(Act 85 of 1993)*

This is a power driven machine which is designed and constructed for the purpose of raising or lowering a load or moving it in suspension, and includes a block and tackle, hoist, crane, lift truck or jib-crane, but does not include an elevator, escalator, goods hoist or builder's hoist;

2.10 LIFTING TACKLE *(Act 85 of 1993)*

Lifting tackle means chain slings, rope slings, rings, hooks, shackles, swivels, spreaders or similar appliances;

2.11 LIFT TRUCK *(Act 85 of 1993)*

It means a mobile lifting machine, but does not include-

2.11.1 a vehicle designed solely for the purpose of lifting or towing another vehicle;
2.11.2 a mobile earth-moving machine; or
2.11.3 a vehicle designed solely for the removal of a waste bin;

2.12 CERTIFICATED ENGINEER *(Act 85 of 1993)*

This is any person to whom a certificate of competency referred to in regulation E1 (1) of the Regulations, published under Government Notice R.929 of 28 June 1963, has been granted and includes any person who is the holder of a certificate of competency in mechanical or electro-technical engineering issued before 1 January 1966 under the Mines and Works Act, 1956 (Act 27 of 1956);

- **Note**: *For the purpose of this Code of Practice only certificates of competency as mechanical engineers will be recognised.*

2.13 COMPETENT PERSON (Act 85 of 1993)

This is any person who -

2.13.1 has served an apprenticeship in an engineering trade which included the operation and maintenance of machinery, or has had at least five years' practical experience in the operation and maintenance of machinery, and who during or subsequent to such apprenticeship or period of practical experience, as the case may be, has had not less than one year's experience in the operation and maintenance appropriate to the class of machinery he is required to supervise;

2.13.2 has obtained an engineering diploma in either the mechanical or electro-technical (heavy current) fields with an academic qualification of at least T3 or N5, or of an equivalent level, and who subsequent to achieving such qualification has had not less than two year's practical experience in the operation and maintenance appropriate to the class of machinery he is required to supervise;

2.13.3 is a graduate engineer who has had not less than two years post graduate practical experience in the operation and maintenance appropriate to the class of machinery he is required to supervise and who has passed the examination on the Act and the regulations made thereunder, held by the Commission of Examiners in terms of regulation E5 (2) of the regulations published under Government Notice R.929 of 28 June 1963; or

2.13.4 is a certificated engineer;

2.14 GRADUATE ENGINEER *(Act 85 of 1993)*

This is any person who has obtained a degree in mechanical or electrical engineering at a South African university, or a degree recognised by the Department of National Education as equivalent to any such degree;

- **Note**: *A Graduate Engineer is only considered such by this Code Of Practice within the scope of his or her particular discipline.*

2.15 ***PROFESSIONAL ENGINEER*** *(Act 114 of 1990)*

This is any person that has been registered with the Engineering Council of South Africa as a ***Professional Engineer*** in terms of the Engineering Profession of South Africa Act (Act 114 of 1990)

- **Note**: *A **Professional Engineer** is only considered such by this Code Of Practice within the scope of his or her particular discipline.*

2.16 LOAD ATTACHMENT DEVICE

Any device or system of devices that connects the load with the lifting appliance i.e. slings, hooks, twist locks or spreaders etc. etc.

2.17 REACHSTACKER

A reachstacker is a lift truck with the following characteristics:

2.17.1 It is generally driven by some kind of internal combustion engine;

2.17.2 It is fitted with rubber tyres on two axles with steering located on the rear axle.

2.17.3 It has an extendible lifting boom usually attached and hinged above the rear wheels or rear half of the chassis and which is supported by one or more hydraulic cylinders mounted on the front half of the chassis;

2.17.4 It carries most of the load, when laden, on its front wheels;

2.17.5 It is generally fitted with a container spreader;

2.17.6 It has the ability to stack several containers high in the second or third rows; and

2.17.7 It is generally able to lift, rotate horizontally, tilt, side shift and move around with a load without the use of outriggers, though outriggers may be fitted.

2.18 *REPORTABLE INCIDENT (Act 85 of 1993)*

Each incident occurring at work or arising out of or in connection with the activities of persons at work or in connection with the use of plant or machinery in which, or in consequence of which -

2.18.1 any person dies, becomes unconscious, suffers the loss of a limb or part of a limb or is otherwise injured or becomes ill to such a degree that he is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or to continue with the activity for which he was employed or is usually employed;

2.18.2 a major incident occurred; or

2.18.3 the health or safety of any person was endangered and where

2.18.3.1 a dangerous substance was spilled;

2.18.3.2 the uncontrolled release of any substance under pressure took place;

2.18.3.3 machinery or any part thereof fractured or failed resulting in flying, falling or uncontrolled moving objects; or

2.18.3.4 machinery ran out of control,

2.19 INCIDENTS WHERE INVESTIGATION IS MANDATORY

Any incident during which one of the following occurred:

2.19.1 any of the criteria for a ***Reportable Incident*** was met;

2.19.2 a person was injured or could potentially have been injured;
2.19.3 equipment, plant or machinery was damaged;
2.19.4 a load was damaged during handling or operation of the equipment, plant or machinery and which could possibly result in a claim;
2.19.5 any unlawful action in connection with equipment, plant or machinery;
2.19.6 Transnet suffered a loss or disadvantage due to the improper operation, maintenance or control of equipment, plant or machinery; or
2.19.7 If in the opinion of the General Manager Engineering, Spoornet, The Group Risk Manager or the ***supervisor***, such an investigation is necessary.
2.19.8 If an examiner finds that a piece of equipment, plant or machinery was used without certification.
2.19.9 If an examiner finds that a piece of equipment, plant or machinery was used without indicated repairs being completed.

2.20 OEM

The original Equipment Manufacturer.

3. REFERENCES

3.1 Occupational Health and Safety Act (Act 85 of 1993) and its Regulations

3.2 The Engineering Profession of South Africa Act and it's Regulations (Act 114 of 1990)

3.3 The National Road Traffic Act and it's Regulations (Act 93 of 1996)

3.4 User and Maintenance Manuals of Original Equipment Manufacturers (***OEM***'s)

3.5 Relevant SABS Standards and Codes of Practice

4. DUTIES

4.1 GENERAL DUTIES OF EMPLOYERS AND *USERS* OF MACHINERY. *(Act 85 of 1993)*

Every employer shall provide and maintain, as far as is reasonably practicable, a working environment that is safe and without risk to the health of his employees.

Without derogating from the generality of an employer's duties the matters to which these duties refer include in particular-

4.1.1 The **provision and maintenance of systems** of work, plant and machinery that, as far as is reasonably practicable, are **safe and without risks to health**;

4.1.2 **Taking such steps** as may be reasonably practicable **to eliminate or mitigate any hazard or potential hazard** to the safety or health of employees before resorting to personal protective equipment;

4.1.3 **Making arrangements for ensuring**, as far as reasonably practicable**, the safety and absence of risks** to health in connection with the production, processing, use, handling, storage or transport of articles or substances;

4.1.4 **Establishing**, as far as reasonably practicable, what **hazards to the health or safety** of persons are attached to any work which is performed, any article or substance which is produced, processed, used ,handled, stored or transported and any plant or machinery which is used in his business, and he shall , as far as reasonably practicable, **further establish what precautionary measures should be taken** with respect to such work article, substance, plant or machinery in order to protect the health and safety of persons, and he shall **provide necessary means to apply such precautionary measures**;

4.1.5 **Providing such information, instructions, training, and supervision** as may be necessary **to ensure,** as far as reasonably practicable, **the health and safety** at work of his employees;

4.1.6 As far as reasonably practicable, **not permitting any employee to do any work** or produce process, use ,handle, store or transport any article or substance or to operate any plant or machinery, **unless the precautionary measures** contemplated in paragraphs 4.3.2 and 4.3.4, or any other precautionary measures which may have been prescribed, **have been taken**;

4.1.7 **taking all necessary measures to ensure that all the requirements of this Act are complied with** by every person in his employment or on premises under his control where plant or machinery is used;

4.1.8 **Enforcing such measures as may be necessary** in the interest of health and safety;

4.1.9 **Ensuring that work is performed** and that plant or machinery is used **under the general supervision** of a person trained to understand the hazards associated with it **and who have the**

authority to ensure that precautionary measures taken by the employer are implemented; and

4.1.10 causing all employees to be informed regarding the scope **of their authority as contemplated in section 37(1)(b) of Act 85 of 1993.**

4.2 DUTIES OF THE *SUPERVISOR* *(Ref. Old Code 29 Clause B.3)*

4.2.1 The ***supervisor*** must first and foremost act as the **person responsible for maintenance and safety of equipment plant or machinery** under his jurisdiction and thus act as representative of the ***user*** in this regard.

- **Note:** *The only way in which the **Supervisor** can remove this responsibility from himself is if the **user** understands and still disregards his written warnings or instructions regarding the safety of the relevant equipment plant or machinery*.

4.2.2 The ***Supervisor*** must further at all times be **aware** of the condition of the equipment maintained by his staff and **ensure that the equipment is kept in a good and safe condition**. He must withdraw from service any equipment which will prejudice safe working or endanger staff under his jurisdiction or members of the public.

4.2.3 The ***Supervisor*** must ensure that **all the machinery, plant and equipment under his jurisdiction is examined** in terms of extant instructions and that the findings of these examinations are **recorded on the logsheet** pertaining to the plant concerned. (See clause 10.1 - Administrative Instructions)

4.2.4 The ***Supervisor*** must **scrutinise, date and initial all logsheets** under his jurisdiction immediately after the ***Operations Manager*** has examined and signed the log-sheets. Where the examiner's report on the logsheet requires that **remedial or other action must be taken,** the ***Supervisor*** must take the action required as soon as possible **in conjunction with the particular *Operations Manager***. The ***Supervisor*** must endorse the logsheets with particulars of the action taken. Such endorsements must be made directly below the last remarks made by the ***examiner***.

4.2.5 The ***Supervisor*** must **arrange for the periodic annealing** (where applicable) and testing of lifting tackle components, such as chains, hooks, shackles, etc., the **periodic de-carbonising of air compressors** and **the cleaning of air receivers**.

4.2.6 When equipment is due for routine attention the ***Supervisor*** **must not wait until it is logged by the *examiner***, but **must take the necessary action without delay in conjunction with the particular *Operations Manager***.

4.2.7 Any plant or **equipment** covered by a logsheet, when **loaned** to another business division, business unit or station, must be accompanied by the logsheet or logsheets and it is the duty of the owner to arrange for the logsheets to be forwarded to the new ***Supervisor*****. The borrower must have the equipment examined** and scrutinise the logsheet or logsheets prior to placing the equipment in service. The new ***Supervisor*** must arrange for the necessary examination and testing during the period the plant or equipment is on loan.

4.2.8 The ***Supervisor*** must arrange that, **when plant or equipment** covered by a logsheet or logsheets, **is transferred** to another business division, business unit or station**, the logsheet or logsheets accompanies the plant or equipment concerned**. The ***Supervisor*** who receives such transferred plant must have the equipment examined and scrutinise the logsheet or logsheets prior to placing the plant or equipment in service. Where applicable the ***Supervisor*** must arrange to re-stamp slings, etc., with the station and depot code mark and identification number applicable to the new centre.

4.2.9 ***Supervisors*** must **retain a record of local identification numbers** with particulars of lifting tackle components and assemblies under their jurisdiction.

4.2.10 The ***Supervisor*** must arrange to **file all logsheets, defect reports, modification and repair authorisations**, pertaining to plant and equipment under his jurisdiction in such a manner that they are **readily available for inspection**. Such documentation should be kept in the proximity of the equipment they cover, so that the logsheets can be referred to, should circumstances warrant it.

- **Note:** *In the case of a depot or terminal where several pieces of equipment are being used throughout the terminal a centralised point should be established where all records are kept and made available*.

4.2.11 When the ***examiner*** reports that some of the **equipment is not available for examination** the ***Supervisor*** must **take immediate action in conjunction with the particular *Operations Manager* to try and find the missing equipment**. If it cannot be found within a period of one month **he must advise the *Operations Manager* in writing** that the equipment must not be used and when found, that it must be reported to the ***Supervisor*** who will

then have it be examined**. A notice to the effect that the item of equipment is missing and is considered unsafe must also be displayed on a conspicuous notice board.** The equipment must be **withdrawn from service** with the necessary endorsement on the applicable logsheet. **The Equipment must** then **be reported stolen** and a copy of the Police report and the reference No. must be placed on the equipment file. A copy of the above documents must also be sent to the Group Risk Manager as well as the census authority.

4.2.12 **Should a item** of equipment, plant or machinery that previously was considered untraceable **be found**, the fact **must immediately be reported** to the **SAPS, *Operations Manager*, Risk Manager** as well as the **Census authority**. An **investigation must then be made of the circumstances** regarding the temporary loss of the item of equipment, plant or machinery. **The report with details of the action taken** must be filed in the equipment file and copies sent to the Risk Manager, Census authority and if necessary the SAPS.

4.2.13 Where **lifting equipment bearing a code mark foreign to the centre or depot is found** and where no arrangements have been made regarding the loan of such equipment, the **lifting equipment must be returned to the department and/or centre to whom it belongs**, i.e. as indicated by the code mark stamped or stencilled on the lifting equipment.

4.3 DUTIES OF THE *EXAMINER* *(Ref. Old Code 29 Clause B.4)*

4.3.1 The ***examiner*** must **thoroughly examine** all machinery, plant and equipment situated within his defined area of examination, **for defects, deficiencies or wear that affect, or could affect, the safe operation** of the machinery, plant and equipment. He must also **ensure** that the **provisions of regulations** promulgated to ensure the safe operation of machinery, plant and equipment **are met**.

- **Note :** *Where steel structures form part of machinery or plant, the **examiner** must also thoroughly examine the structure for damage, cracks, corrosion or other defects which could affect the safe operation of the machinery or plant concerned*.

4.3.2 **The findings of each examination must be entered on the logsheet** (or logbook) applicable to the item examined. The date of the examination and the ***examiners*** signature must be endorsed on the logsheet.

- **Note :** *Where no defects, deficiencies, etc., are apparent the* ***examiner*** *must endorse the logsheet, "In good order".* ***The use of ditto or similar inscription marks on logsheets is not permitted.***

4.3.3 The ***examiner*** and the ***Supervisor*** must ensure that **logsheets are kept in a good order** and arrange for replacement or repair of any torn or damaged logsheets. If logsheets are replaced the torn or full logsheets must be filed in the equipment file.

4.3.4 The ***Examiner*** must have in his **possession a complete list** showing clearly each item of machinery, plant and equipment examined by him. This list must be updated after every inspection regarding new, withdrawn or transferred equipment.

4.3.5 ***Examiners*** must ensure that machinery, plant **or equipment which they consider unsafe for use**, after examination, **is not used**. In all instances where unsafe machinery, plant or equipment is found during the examination **the *examiner* must endorse the logsheet "UNSAFE - NOT TO BE USED"** and must advise the ***operator*** that the machinery, plant or equipment must not be used until repairs are affected.

4.3.6 The ***examiner*** must directly after this examination **inform both the *Operations Manager* and the *Supervisor* about his remarks on the logsheet** and retain their signatures as acknowledgement. The ***Operations Manager* in conjunction with the particular *Supervisor*** must then ensure that the machinery, plant or equipment is repaired or disposed of **as scrap**.

4.3.7 Where **equipment is not available for examination** the ***examiner*** must **endorse the relevant logsheet** accordingly, stating the reasons, and **advise the *Supervisor*** that he has not examined the said equipment. **The *Supervisor*** must then **immediately inform** the ***Operations Manager*** in his capacity **as *user* of the unavailability of the equipment**. **The responsibility then rests with the *Operations Manager*** in his capacity **as *user* to** take the necessary action to **ensure the safety of the relevant equipment**.

4.4 DUTIES OF THE *OPERATIONS MANAGER*

4.4.1 The ***Operations Manager*** is firstly responsible for **ensuring that his staff complies with the minimum standard *(knowledge, ability and certification)* before allowing them to operate** any

piece or item of plant, machinery or equipment covered by this code of practice.

4.4.2 The ***Operations Manager*** must further at all times be **aware** of the condition of the equipment used by his staff and **ensure that the equipment is kept in a good, safe, clean and neat condition**. He must withdraw from service any equipment which will prejudice safe working or endanger staff under his control or members of the public.

4.4.3 The ***Operations Manager*** must also **ensure** that any piece or item of plant, machinery or **equipment being used by staff** under his control **complies with** the requirements of The **Occupational Health and Safety Act**.

4.4.4 The ***Operations Manager*** must **ensure that** any piece or item of plant, machinery or **equipment being used by staff** under his **control is regularly inspected and tested** according the guidelines of this code of practice.

4.4.5 The ***Operations Manager*** must **co-ordinate with the *supervisor*** and **make the equipment available for inspection and testing** as required by this code of practice.

4.4.6 The ***Operations Manager*** must ensure that **no equipment**, which is **not numbered**, or **not covered by a certificate**, or is not in accordance with extant instructions, **be used.**

4.4.7 The ***Operations Manager*** must **scrutinise, date and initial all logsheets** of equipment under his control immediately after the ***examiner*** has examined the equipment and endorsed the log-sheets. Where the examiner's report on the logsheet requires that **remedial or other appropriate action must be taken,** the ***Operations Manager* must arrange** with the ***Supervisor* for the necessary remedial action to be taken** and **ensure that the equipment is not used** until such a time that the abovementioned remedial action has been taken.

4.4.8 The ***Operations Manager* must inform the *Supervisor*** of any **transfer scrapping or delivery of equipment** whether new, hired, borrowed or transferred. He is also responsible to inform the census authority of the above changes.

4.4.9 Should any piece or item of plant, machinery or **equipment being used by staff** under his control be lost or untraceable the ***Operations Manager*** must firstly **investigate the circumstances of the loss**. Should the item still not be traceable he/she must then **immediately report the situation to The Risk Manager,**

S.A Police Services as well as the census authority. The **SAPS case No. must be included** in the correspondence to the Risk Manager and Census authority. **All documentation**, whether original or copies, must also be **filed in the equipment file**.

4.4.10 **Should a item** of equipment, plant or machinery that previously was considered untraceable **be found**, the fact **must immediately be reported** to the **SAPS, *Supervisor*, Risk Manager** as well as the **Census authority**. An **investigation must then be made of the circumstances** regarding the temporary loss of the item of equipment, plant or machinery. **The report with details of the action taken** must be filed in the equipment file and copies sent to the Risk Manager, Census authority and if necessary the SAPS.

4.5 DUTIES OF THE *OPERATOR*

The ***operator*** of equipment must ensure that:

4.5.1 he/she is **certified to operate the particular piece of equipment** (in the case of a lift truck with a lifting capacity of 750 kg or more or in the case of a jib crane with a lifting capacity of 5000kg or more the ***operator*** should be in possession of a valid certificate issued by TNTB [Transnet training board]) ;

4.5.2 the equipment or plant that he/she **operates is in a safe condition before use**, by doing a **general visual inspection** and if applicable, complete the **daily logbook** and/or check-sheet for that piece of equipment.

4.5.3 he/she **reports any defect or dangerous situation** in connection with the equipment immediately to the ***supervisor***;

4.5.4 he/she **operates the equipment safely** and within it's designed limits;

4.5.5 he/she **ensures that the equipment is in a safe condition** when he/she leaves or stores it.

4.6 DUTIES OF THE *INSPECTOR*

4.6.1 The ***inspector*** is the enforcer of this Code of Practice, and as such must always be on the lookout for possible transgressions of this Code of Practice.

4.6.2 The ***inspector*** must do regular spot checks on the condition of machinery plant and equipment in his area of responsibility and the related documentation.

4.6.3 The ***inspector*** must do a systematic inspection on the condition of all the machinery plant and equipment in his area of responsibility and the related documentation at least once a year.

4.6.4 The ***inspector*** must give a full report of an 'inspection' to the person responsible for the equipment and forward a copy of the report to the Group Risk Manager, Transnet. The report must contain among other items at least the following:

4.6.4.1 Equipment status report.
4.6.4.2 Report on the quality and status of documentation.
4.6.4.3 Report on the standard and quality of examination.
4.6.4.4 Report on the standard and quality of maintenance.
4.6.4.5 Report on the standard of operating.
4.6.4.6 Report on the environment in which the particular piece of machinery, plant or equipment is used.

5. DATABASE OF LIFTING EQUIPMENT

5.1 In order to properly manage the equipment falling under the scope of this code of practice a database will be created and maintained by The General Manager Engineering, Spoornet.

5.2 The following information will be required for every piece of equipment (Form A.2):

5.2.1 Asset no.
5.2.2 Description.
5.2.3 Category e.g. Overhead Electric crane, sling etc.
5.2.4 Manufacturer
5.2.5 Serial No
5.2.6 Year of manufacture
5.2.7 Capacity
5.2.8 Centre
5.2.9 Owner
5.2.10 Date of last logsheet entry
5.2.11 Date of last performance test.

5.3 A yearly census of the equipment will be done by ***supervisors*** and ***users*** at the beginning of each financial year. The census requires that all involved parties resubmit the information required by clause 5.2 on form to the database maintainer.

6. AUTHORITY AND RESPONSIBILITY

6.1 GENERAL DELEGATION OF AUTHORITY AND RESPONSIBILITY

6.1.1 The Managing Director of Transnet has delegated the authority to ensure the safe operation of the various types of equipment covered by this code of practice to the relevant executive directors who in their turn delegated the authority to the CEO.'s of the business units under their control. These CEO.'s have delegated the authority down their company structure in regulated and documented ways to the individual ***users*** and ***operators*** of the equipment.

6.1.2 The delegation of authority and the connected responsibility must be done in writing by any line manager but **can only be done to the extent that he has received authority to delegate from his superiors**. A copy of the letter of delegation must be forwarded to the Group Risk Manager for record keeping.

6.2 RECORD OF DELEGATED AUTHORITY AND RESPONSIBILITY

6.2.1 The Group Risk Manager is responsible to create and update a record of the structure of all delegated responsibilities and authorities related to this Code of Practice.

6.2.2 At the beginning of each financial year the Group Risk Manager is responsible for sending to each person, that it has record of, a detailed statement of his responsibility and authority. This has to be connected to an audit of all responsibilities to ensure that all the areas of exposure of Transnet has been adequately covered.

6.3 DELEGATED AUTHORITY AND RESPONSIBILITY OF *OPERATIONS MANAGERS*

6.3.1 The ***Operations Manager*** is responsible for ensuring the safe use of machinery, plant and equipment under his control.

6.3.2 The ***Operations Manager*** is responsible for ensuring that only machinery, plant and equipment under his control which are properly certified and for which the proper documentation has been issued are used.

6.3.3 The ***Operations Manager*** is responsible for ensuring that the ***operators*** operating the machinery, plant and equipment under his control are qualified, capable and duly certified to do so.

6.3.4 The ***Operations Manager*** has the responsibility and authority to suspend the certification of any ***operator*** that he deems not capable of competently operating a particular piece of machinery, plant or equipment under his control. The operator's operators card must be endorsed "**Suspended pending re-certification by the TNTB**".

6.3.5 The ***Operations Manager*** has the responsibility and authority to have any particular piece of machinery, plant or equipment under his control repaired and made safe to operate.

6.3.6 The ***Operations Manager*** has the responsibility to report any defects on a particular piece of machinery, plant or equipment which becomes apparent either to him or the operator before or during operation as soon as possible to the ***Supervisor***.

6.3.7 The ***Operations Manager*** has the responsibility and authority to withdraw any particular piece of machinery, plant or equipment under his control from service

6.3.8 The ***Operations Manager*** is responsible for ensuring that the ***Supervisor*** as well as the Census authority is informed of any scrapping, transfer or procurement of new machinery, plant and equipment under his control.

6.3.9 The ***Operations Manager*** is responsible for ensuring that all ***Reportable Incidents*** in connection with any particular piece of machinery, plant and equipment under his control is duly reported as required in Clause 7.1 of the Administrative Instructions of this Code of Practice.

6.3.10 The ***Operations Manager*** is responsible for ensuring that all ***Incidents With Mandatory Investigations*** in connection with any particular piece of machinery, plant and equipment under his control are duly reported and investigated as required in Clause 7.4 of the Administrative Instructions of this Code of Practice.

6.3.11 The ***Operations Manager*** has the responsibility and authority to institute disciplinary action against ***operators*** that he deems to have acted negligently or irresponsibly in connection with any particular piece of machinery, plant or equipment.

6.3.12 The ***Operations Manager*** has the responsibility and authority to recommend in writing to the controlling officer of any other person that he deems to have acted negligently or irresponsibly in connection with any particular piece of machinery, plant or equipment that disciplinary action must instituted against the

particular person. A copy of such written recommendation must be filed on the equipment file. Details of any action or inaction of the particular controlling officer must also be filed in the equipment file.

6.4 DELEGATED AUTHORITY AND RESPONSIBILITY OF *SUPERVISORS*

6.4.1 The ***Supervisor*** is responsible for ensuring that machinery, plant and equipment which he is responsible for and are in service are safe to use

6.4.2 The ***Supervisor*** is responsible for ensuring that only machinery, plant and equipment under his jurisdiction which are safe to use are issued with proper certification and documentation.

6.4.3 The ***Supervisor*** has the responsibility to recommend in writing to the ***Operations Manager*** to suspend the certification of any ***operator*** that he deems not capable of competently operating a particular piece of machinery, plant or equipment. The recommendation and details of the action or inaction of the ***Operations Manager*** must be filed in the equipment file of the particular piece of equipment, plant or machinery.

6.4.4 The ***Supervisor*** has the responsibility and authority to have any particular piece of machinery, plant or equipment under his jurisdiction repaired and made safe to operate.

6.4.5 The ***Supervisor*** has the responsibility and authority to withdraw the certification of any particular piece of machinery, plant or equipment that he deems to be unsafe or likely to sustain major consequential damage due to it's condition.

6.4.6 The ***Supervisor*** has the authority to use his discretion in allowing the ***Operations Manager*** limited use of a particular piece of machinery, plant or equipment, mentioned in clause 6.4.5, should the situation require it..

6.4.7 The ***Supervisor*** however has the authority to issue a ***stop certificate*** for any particular piece of machinery, plant or equipment, mentioned in clauses 6.4.5 and 6.4.6, that he deems to be unsafe or likely to sustain major consequential damage due to it's condition even if the situation is critical.

6.4.8 The ***Supervisor*** has the authority to serve any person, performing actions in connection with any particular piece of machinery, plant or equipment, that he deems to be unsafe with a ***warning notice***. A copy of such notice has to forwarded to the person's controlling

officer who then has to investigate whether disciplinary action can be taken against such person. Another copy of such notice must be filed in the equipment file.

6.4.9 The ***Supervisor*** has the responsibility and authority to declare any incident that he deems to have been dangerous, potentially dangerous or unnecessarily damaging to equipment, as "***an incident where investigation is mandatory***"

6.4.10 The ***Supervisor*** is responsible for ensuring that all ***Guarantee defects*** in connection with any particular piece of machinery, plant and equipment under his jurisdiction is duly reported as required in Clause 7.2 of the Administrative Instructions of this Code of Practice.

6.4.11 The ***Supervisor*** is responsible for ensuring that all ***Recurring defects*** in connection with any particular piece of machinery, plant and equipment under his jurisdiction is duly reported and dealt with as required in Clause 7.3 of the Administrative Instructions of this Code of Practice.

6.4.12 The ***Supervisor*** has the responsibility and authority to institute disciplinary action against ***examiners*** that he deems to have acted negligently or irresponsibly in connection with any particular piece of machinery, plant or equipment.

6.5 DELEGATED AUTHORITY AND RESPONSIBILITY OF *EXAMINERS*

6.5.1 The ***Examiner*** is responsible for ensuring that all machinery, plant and equipment, which he examines and certifies, are safe to use and properly maintained.

6.5.2 The ***Examiner*** has the responsibility to report all defects that he may find during his examination of any particular piece of machinery, plant or equipment and note it down on the relevant logsheet.

6.5.3 The ***Examiner*** is responsible for issuing machinery, plant and equipment, which he examined and found to comply with the requirements, with proper certification and documentation.

6.5.4 The ***Examiner*** has the responsibility to report any ***operator*** that he deems not capable of competently operating a particular piece of machinery, plant or equipment to the ***Supervisor*** for appropriate action by him/her.

6.5.5 The ***Examiner*** has the responsibility and authority to withdraw the certification of any particular piece of machinery, plant or equipment that he deems to be unsafe or likely to sustain major consequential damage due to it's condition. In such a case a stop certificate (Form A10) must be issued by him/her.

6.5.6 The ***Examiner*** has the responsibility to report any person, performing actions in connection with any particular piece of machinery, plant or equipment, that he deems to be unsafe to the ***Supervisor*** for appropriate action by him/her.

6.5.7 The ***Examiner*** has the responsibility to report any incident that he deems to have been dangerous, potentially dangerous or unnecessarily damaging to equipment to the ***Supervisor*** for appropriate action by him/her.

6.5.8 The ***Examiner*** has the authority to enter any premises where any particular piece of machinery, plant or equipment that he is responsible for examining is operated, situated or stored.

6.6 DELEGATED AUTHORITY AND RESPONSIBILITY OF *INSPECTORS*

6.6.1 The ***Inspector*** has the authority to enter any premises where any particular piece of machinery, plant or equipment that is owned by Transnet is operated, situated or stored.

6.6.2 The ***Inspector*** has the authority to request any information data or logsheet of any particular piece of machinery, plant or equipment that is owned by Transnet

6.6.3 The ***Inspector*** has the responsibility and authority to withdraw the certification of any particular piece of machinery, plant or equipment that he deems to be unsafe or likely to sustain major consequential damage due to it's condition.

6.6.4 The ***Inspector*** has the responsibility to investigate the competency of either or both the ***Supervisor*** and the ***Examiner*** in the instance that he had to enact clause 6.6.3 with out a request from either of the previously mentioned parties.

6.6.5 The ***Inspector*** has the responsibility and authority to declare any incident that he deems to have been dangerous, potentially dangerous or unnecessarily damaging to equipment, as "***an incident where investigation is mandatory***"

6.7 DELEGATED AUTHORITY AND RESPONSIBILITY OF *OPERATORS*

6.7.1 The ***Operator*** has the responsibility to operate any particular piece of machinery, plant or equipment safely, and only if certified to do so.

6.7.2 The ***Operator*** has the responsibility not to operate any particular piece of machinery, plant or equipment if it is not safe to be operated.

6.7.3 The ***Operator*** has the responsibility to report any defects on a particular piece of machinery, plant or equipment which becomes apparent before or during operation as soon as possible to the ***Operations Manager***.

6.7.4 The ***Operator*** has the authority and responsibility to refuse to operate any particular piece of machinery, plant or equipment should it be:

6.7.4.1 Unsafe to operate due to the condition of the equipment;
6.7.4.2 Over the rated limits of the particular piece of machinery, plant or equipment.
6.7.4.3 Unsafe to operate due to environmental conditions;
6.7.4.4 Illegal to operate that particular piece of machinery, plant or equipment.

7. FEEDBACK / REPORTING

7.1 *REPORTABLE INCIDENTS*

7.1.1 All ***Reportable Incidents*** must immediately be reported to the Department of Labour on the form prescribed by the OHS Act. This form would also be available at local Risk Management officers.

7.1.2 Copies of these reports should also be sent to the local Risk Management officer, the Executive Manager whose staff maintains the particular piece of machinery, plant or equipment as well as to the Executive Manager whose staff operates the particular piece of machinery, plant or equipment.

7.2 GUARANTEE DEFECTS

7.2.1 All defects on a particular piece of machinery, plant or equipment still under guarantee have to be logged on the logsheet with details about the action taken.

7.2.2 A report on the defect has to be sent to the Executive Manager whose staff maintains the particular piece of machinery, plant or equipment. (Form A-3)

7.2.3 A copy of each guarantee defect report must be filed in the equipment file.

7.3 RECURRING DEFECTS

7.3.1 All similar or identical defects which occur more than three times within a reasonable time on the same particular piece of machinery, plant or equipment being maintained or used by Transnet must be investigated by a competent third party independent from both the maintenance and operational staff.

7.3.2 Copies of the report on the defect investigation has to be sent to:
7.3.2.1 the Executive Manager whose staff maintains the particular piece of machinery, plant or equipment;
7.3.2.2 the Executive manager whose staff operates the particular piece of machinery, plant or equipment;
7.3.2.3 The Risk Manager of the particular Business Unit; and
7.3.2.4 Group Risk Manager, Transnet.

7.3.3 The Managers of the maintenance and operational sections must decide in which sphere the cause of the defect falls. Should this be impossible the services of a independent third party must be used.. Appropriate action (disciplinary or preventative etc.) must then be decided upon and implemented.

7.3.4 Transnet Risk Management will monitor trends for equipment Transnet wide, and if the occurrence of a particular defect on a particular piece of equipment has too high a risk attached to it, the local Risk Manager is responsible to take appropriate measures to prevent or reduce the risk of it reoccurring.

7.3.5 A copy of recurring defect report and details of the action taken must be filed in the equipment file.

7.4 INCIDENTS WITH MANDATORY INVESTIGATIONS

7.4.1 All the investigations for the above type of incidents must be performed by a competent third party independent from both the maintenance and operational staff

7.4.2 Copies of the report on the investigation has to be sent to:
7.4.2.1 the Manager whose staff maintains the equipment;
7.4.2.2 the manager whose staff operates the equipment; and
7.4.2.3 Transnet Risk Management.

7.4.3 The Managers of the maintenance and operational sections must decide in which sphere the cause of the incident falls. Appropriate

action (corrective or preventative measures etc.) must then be decided upon and implemented.

8. EQUIPMENT UPDATES / INSTRUCTIONS / SERVICE BULLETINS

8.1 Should a manufacturer of a particular piece of machinery, plant or equipment issue an equipment update, instruction or - service bulletin, copies will be forwarded to all the ***users***, owners and maintenance staff for that particular series or type of equipment. The database of equipment will be used to determine to whom copies should be sent.

8.2 The ***user*** and ***supervisors*** must then ensure that the equipment update, instruction or - service bulletin is then acted upon.

8.3 A copy of the equipment update, instruction or - service bulletin as well as details of the actions take in regards of it must be placed on the equipment file.

8.4 Should the particular piece of equipment not be at the centre the ***supervisor*** will then be responsible to ensure that the bulletin reaches the relevant persons and that it is filed appropriately.

9. SAFETY DEVICES / OPERATIONS

9.1 REQUIREMENTS

9.1.1 All power driven lifting machines with a capacity of more than 5 ton must have a device in one form or another to prevent the ***operator*** from lifting a load higher than the rated capacity of the machine. (Act 85, Driven Machinery regulations 18.2.b.ii)

9.1.2 These safety devices must be mounted such that they do not have to be re-calibrated after regular maintenance both to the machine as well as to the device.

9.2 INSPECTIONS

9.2.1 The safety devices must specifically be examined during the regular examinations of the machinery and all examinations must be individually noted and signed off on the equipment logsheet.

9.3 CALIBRATION

9.3.1 The devices must be calibrated yearly or more often if necessary and a program for these calibrations must be filed in the equipment file. All calibrations must be individually noted and signed off on the equipment logsheet.

10. ROUTINE

10.1 GENERAL EXAMINATION PROCEDURES OF MACHINERY, PLANT AND EQUIPMENT

10.1.1 Logsheets, numbers 9, 10 and 66, must be used by ***examiners*** to record the results of periodic examinations with a view to report and attend to all defects, wear or malfunction, which may affect the safe operation of the equipment or the safety of the ***operator*** or other persons.

10.1.2 ***Supervisors*** must arrange the following for all new machinery, plant and equipment under their jurisdiction before the item concerned is placed in service:

10.1.2.1 the issue of initial logsheets, except where the equipment has been manufactured by a Transnet workshop and logsheets and certification has been issued by them;

10.1.2.2 open an equipment file for it;

10.1.2.3 ensure that logsheets, valid load test and material certificates, contracts and other relevant certificates, documentation and information from the manufacturing centre are filed in the equipment file as required by clause No. 16.1

10.1.2.4 complete and send a census form (Form A-2) to the census authority according to the instructions in clause 5 of these instructions.

10.1.3 The last date of certification or testing shown on a completely filled logsheet and the date of manufacture, if known, must be endorsed prominently on the new logsheet. Where equipment is subject to periodic testing, the expiry date for the valid test certificate must be endorsed in red on the bottom right hand corner of the relevant logsheet.

10.1.4 Where the last date of test is unknown, or if any doubt exist when the last test was carried out, the new logsheet must be endorsed : "To be Tested". The particular piece of machinery, plant or equipment must be withdrawn from service and only placed back in service when it has successfully been tested.

10.1.5 In the event of a logsheet for a particular piece of machinery, plant or equipment being lost (See also Clause 16.1.4 of these instructions):

10.1.5.1 Every effort must be made to trace the missing logsheet and/or establish how the logsheet was lost.

10.1.5.2 The ***Supervisor*** must advise all concerned that the logsheet has been lost, including:
10.1.5.2.1 The ***Examiner*** of the particular piece of machinery, plant or equipment;
10.1.5.2.2 The ***Operations Manager***;
10.1.5.2.3 The Risk Manager of the Business Unit;
10.1.5.2.4 The Group risk Manager; and
10.1.5.2.5 The census authority

10.1.5.3 Details as to how the logsheet was lost, or presumed lost, must be recorded in one or more affidavits by the ***Supervisor*** and/or relevant parties.

10.1.5.4 The ***Examiner*** must issue a new logsheet endorsed with the following : "Duplicate logsheet original lost - See letter ..... of ..... ".

10.1.5.5 The affidavit/s must be filed in the equipment file.

10.1.6 When it is necessary due to new specifications to alter existing information appearing in the heading of a logsheet, the existing information must be crossed out in such a manner that it remains legible and the new information must be inserted. Letters, reports or other documentation explaining the changes must be filed in the equipment file.

10.1.7 The identification number appearing on the logsheet may not be altered under any circumstances. Where the identification number is changed a new logsheet must be issued and the existing logsheet including letters, reports or other documentation explaining the changes must be filed by the ***Supervisor*** in the equipment file.

10.1.8 Under no circumstances may correction fluid be used to obliterate any information or entries on a logsheet.

10.2 DAILY / SHIFT TASKS

10.2.1 The ***operator*** of the piece of equipment must ensure that the equipment is safe to operate before he/she starts to operate it. For this purpose the ***operator*** must perform a daily task. The ***operator*** must complete the relevant daily task form(Form A7 - Logsheet No. 385) - should there be no form for that particular piece of equipment a visual as well as a functional check of the piece of equipment must be made by the ***operator*** before he/she starts to operate it.

10.2.2 In the case of multiple users during a shift, the user must assign one person to do the above mentioned shift task.

11. AUTHORITY FOR EXEMPTIONS / REPAIR / MANUFACTURE.

11.1 EXEMPTIONS FROM AND EXTENSIONS TO EXAMINATION AND/OR TESTING PERIODS

11.1.1 If exceptional circumstances exist and all other alternatives have been considered, and the only solution is the exemption or extension in respect of the examination and/or testing of equipment for a maximum of **one regular inspection**, the ***Supervisor*** can make this decision provided that the maximum safety is ensured at all times. **Should an immediate second or permanent exemption be necessary the exemption may only be granted by a *Professional Engineer*.**

11.1.2 In each case where an exemption or extension in respect of the examination and/or testing has been granted, the relevant logsheets must be endorsed accordingly with the amended periods for examination and/or testing, and will only be valid while conditions exist that led to the application as described in Clause 11.1.1.

11.1.3 If the exemption or extension in respect of the examination and/or testing are withdrawn because of changed circumstances, the prescribed examination and test periods must be restored.

11.1.4 If ***examiners*** and other authorised officers consider it necessary in the interest of safety, they shall at all times have the right to cancel an exemption or extension in respect of the examination and/or testing periods. The person concerned must endorse the relevant logsheet accordingly.

11.1.5 If ***examiners*** and other authorised officers consider it necessary in the interest of safety, they shall at all times have the right to required the immediate examination and/or testing of any particular piece of equipment even if it has a valid exemption certificate. The person concerned must endorse the relevant logsheet accordingly including the reasons for the particular action.

11.2 WELDING ON LIFTING TACKLE AND LIFTING EQUIPMENT

11.2.1 No electric arc or oxyacetylene welding or flame cutting is permitted on lifting tackle components and lifting appliances without prior written authority from a ***Professional Engineer***. All requests to undertake such welding or cutting must indicate the proposed method of welding or cutting and other relevant information. (Where possible drawings must be provided).

11.2.2 After completion of the welding or cutting an examination and performance test must be done by a ***competent person*** and the Logsheet must be endorsed as such.

11.2.3 The written authorisation for the welding or cutting as well as inspection reports, X-ray photos etc. must be filed in the equipment file and a copy of the authorisation must be attached to the Logsheet.

11.3 MODIFICATION TO EXISTING LIFTING EQUIPMENT

11.3.1 Proposed modifications to load bearing parts of existing lifting appliances (e.g. cranes, chain blocks, straddle-carriers, etc.) must be referred to a ***Professional Engineer*** for approval before the modification work is commenced and the drawings for existing lifting equipment must be amended whenever modifications to such equipment are effected.

11.3.2 After completion of the modification an examination and performance test must be done by a ***competent person*** and the Logsheet must be endorsed as such.

11.3.3 The written authorisation for the modification, new drawings as well as inspection reports, X-ray photos etc. must be filed in the equipment file and a copy of the authorisation must be attached to the Logsheet.

11.4 COMBINING LIFTING APPLIANCES OF DIFFERENT CAPACITIES

11.4.1 The practice of combining lifting equipment of different capacities (i.e. a 3 ton chain block on a 500 kilogram runway) should be avoided wherever possible but where combinations of unequal capacity in use for a relatively short period, e.g. while chain blocks are removed for testing, the ***Supervisor*** must ensure that the capacity of the equipment which can safely accept the lesser load is not exceeded during the period the lifting equipment safe working loads are at variance.

11.4.2 Where combinations of unequal capacity are permanent, the equipment which has the higher capacity must be de-rated to that of the equipment with the lower capacity and may not be upgraded again without the written authority of a ***Professional Engineer***.

11.4.3 In the case of gantries, runways, swing jibs, etc., the reduced safe working load must be stencilled on the girder or jib and in the case of electric or pneumatic hoists, chain blocks, etc., a brass plate must be fitted in such a manner that it, as far as possible,

obscures any maker's capacity markings. The brass plate must bear the identification number and the reduced safe working load.

11.4.4 In cases where the safe working load is typed on the hook, the existing safe working load markings must be peened out and the de-rated safe working load typed onto the hook.

- **Note:** *The safe working load of the hook may never be upgraded again.*

11.4.5 Maker's capacity markings, cast or forged in relief on the hook must be ground off, in such a manner that the main body of the hook is neither damaged or reduced in cross-section.

11.4.6 The relevant logsheets must be endorsed accordingly, the reduced safe working load must be indicated and all documentation detailing the reasons for the change must be filed in the equipment file.

11.5 LIFTING EQUIPMENT WORKING IN TANDEM

11.5.1 When it is necessary to use lifting equipment of equal capacity in tandem, the load to be lifted must not exceed 90% of double the safe working load of both items of such equipment used in this combination.

11.5.2 When it is necessary to use lifting equipment of **unequal capacity** in tandem, the load to be lifted **must not exceed 90% of double the safe working load** of the item of equipment with the **smaller load capacity** used in this combination.

11.5.3 Two cranes working in tandem and employing a compensating device, the design of which has been approved by a ***Professional Engineer***, may lift a single load provided that the **load does not exceed ninety per cent of double the safe working capacity of the smaller capacity crane** used in the combination.

11.5.4 **Both the cranes used for a tandem operation must be of the positive power lowering type**. Cranes with "free-barrelling" features may only be used if this feature can be positively excluded. Cranes which, due to the electrical wiring, require the controller to be passed through the "free-barrelling" position of the controller before entering the power lowering condition, may under no circumstances be used for tandem working.

11.5.5 The Engineer or Manager, whose staff maintains the cranes, **(with the concurrence of a *Professional Engineer* in the instance that he/she does not have a suitable qualification and/or suitable experience)** must agree in writing that the

selected cranes are suitable for this method of working and is satisfied that the selected cranes are in good safe working order.

11.5.6 All lifts undertaken using the compensating device must be personally supervised by the ***Supervisor*** or any other responsible person appointed by the ***Supervisor*** and the lifting of loads must be avoided while strong winds prevail.

11.5.7 **It must not be presumed that because it was previously agreed upon to work in tandem, future tandem working may be undertaken without requesting and receiving authorisation for it**. Each case will be considered and decided on it's merits.

11.5.8 The written authorisation for the lift as well as any relevant inspection reports must be filed in the equipment file and a copy of the authorisation must be attached to the Logsheet.

11.6 AUTHORISATION TO OVERLOAD CRANES

11.6.1 Cranes may not be loaded in excess of their safe working load, but should circumstances arise where an exception is necessary, full particulars must be referred to the relevant manager or engineer who may authorise**, with the concurrence of a *Professional Engineer* in the instance that he/she does not have the necessary qualification and enough suitable experience**, an overload in writing of up to twenty five per cent above the safe working load on cranes which are maintained by staff under their control.

11.6.2 Overloads, which are above the safe working load plus twenty five per cent of the safe working load, will not be permissible under any circumstances.

11.6.3 On receipt of an application the manager must arrange for an examination of the crane and ensure that all aspects of the crane are in good working order.

11.6.4 In all cases of overloads the manager must keep a permanent record indicating :

11.6.4.1By whom the overload was authorised.
11.6.4.2Crane number.
11.6.4.3Full details of the load lifted (including mass).
11.6.4.4Date load was lifted.
11.6.4.5Details of ***Professional Engineer's*** concurrence

11.6.5 Every possible alternative must be examined before seeking authority to overload a crane. For instance, the division of the load, or the assistance of other cranes may overcome the difficulty.

11.6.6 When an overload has been authorised, **it must not be presumed that future similar overloads may be lifted without prior authority**. Each case will be considered and decided on it's merits.

11.6.7 The operation of lifting an overload must be supervised by an Artisan (Millwright work), or other competent employee and must be avoided while strong winds prevail.

11.6.8 After completion of the overload an examination of the crane must be done and the ***examiner*** must be satisfied that all aspects of the crane are still in good working order.

11.6.9 The written authorisation for the overload and written reports of the lift as well as inspection reports before and after the lift must be filed in the equipment file and a copy of the authorisation must be attached to the logsheet.

12. STORAGE OF EQUIPMENT (MOTHBALL)

12.1 STORAGE OF SURPLUS OR REDUNDANT SLINGS, LIFTING TACKLE AND/OR EQUIPMENT

12.1.1 Where slings, lifting tackle and/or equipment become redundant or surplus because of changed conditions or methods and the condition of the slings, lifting tackle and/or equipment is such that scrapping cannot be justified, the ***Supervisor*** can store the above mentioned equipment until required, or until disposal is arranged.

12.1.2 The slings, lifting tackle and/or equipment must be placed in storage in an area which can be securely locked to prevent the entry of unauthorised persons and which is so constructed that material stored therein cannot be removed without consent of the ***Supervisor***. This place of storage should not be such that other staff are required to regularly enter the area to obtain other materials stored therein.

12.1.3 The ***Supervisor*** must accept full responsibility for slings, lifting tackle and/or equipment held in storage under his jurisdiction and must take reasonable care that deterioration will not easily occur.

12.1.4 The relevant logsheets must be endorsed, "PLACED IN STORAGE", and while the equipment remain in storage the examination, annealing, (where applicable) and testing may be suspended.

12.1.5 Where it is necessary to withdraw a item from storage for further use, the item concerned must be thoroughly examined, and if applicable, annealed and tested irrespective of the last date of examination and/or testing and the relevant logsheet endorsed accordingly.

13. PROHIBITIONS

13.1 LIFTING EQUIPMENT OF RAIL CONSTRUCTION

13.1.1 Under no circumstances must rails be used for future lifting equipment or lifting appliances and all existing lifting appliances or equipment of rail construction may not be used in future. ***Examiners*** and Supervisors must cancel all logsheets and/or logbooks for lifting appliances or equipment of rail construction.

- **Note :** *Where self supporting jib cranes, constructed in accordance with drawing CME 2531/15-000 have been reinforced in accordance with letter NHH.B. 1365 of 26 August 1975, this equipment may be retained in service*.

13.1.2 In all cases where it is essential that rails be used, e.g. the track on overhead crane structures these must not be taken into account in the way of load bearing, for design purposes.

13.2 LIFTING EQUIPMENT : BOILER TUBES AND SIMILAR STEEL TUBING

13.2.1 Second-hand boiler tubes and similar steel tubing must not be used in the manufacture of lifting equipment or scaffolding, nor for lifting purposes.

14. DERATING LIFTING EQUIPMENT

14.1 When it is necessary to de-rate lifting equipment (i.e. reduce the safe working load) the ***Supervisor*** and the ***Operations Manager*** must concur that the lifting equipment be de-rated.

14.2 The ***Supervisor*** must advise the head of the business division or the business unit concerned, in writing, that the lifting equipment has been de-rated and the reasons therefore.

14.3 All load/radius indicators, load diagrams or charts, etc., fitted to or provided with the lifting equipment, must be changed to the de-rated safe working load.

14.4 The existing safe working load stencilled on the lifting equipment must be obliterated and the new de-rated safe working load must be stencilled on in place thereof.

14.5 The existing safe working load stamped on the lifting equipment components eg. hook/s etc., must be obliterated and the new de-rated safe working load stamped on in place thereof and any other existing load marks which are contrary to the de-rated safe working load must be obliterated.

14.6 All logsheets/logbooks appertaining to the lifting equipment, including those for components e.g. hooks, etc., must be endorsed to show that the safe working load has been de-rated and the reasons therefore.

15. STENCILING OF LIFTING EQUIPMENT

15.1 Every crane must be stencilled with the following particulars :

15.1.1 Number.
15.1.2 Safe working load (in kilograms below 1 000 kilograms and in tons and decimals thereof for 1 000 kilograms and over) and where applicable:
15.1.3 The maximum radius at which the safe working load can be lifted.

15.2 When stencilling the safe working load on cranes the abbreviation SWL must be used.

15.3 The stencilling must be maintained in a legible condition. Where necessary, i.e. in locomotive sheds, the stencilling must be cleaned of dirt, soot, etc., at regular intervals.

15.4 A notice bearing the wording : "This crane may only be operated by staff who have been certified competent in terms of Code of Practice No. 30 and are in possession of a valid TNTB operators card.." must be displayed in a prominent place in crane cabs.

15.5 This information must be stencilled, under competent supervision, in a prominent position on the crane, as follows :

TYPE OF CRANE	POSITION IN WHICH INFORMATION MUST BE STENCILLED
Overhead electric and hand operated overhead travelling cranes, "Goliath" type cranes, etc.	On both sides of the overhead cross girder of the crane.
Hand, steam, petrol or diesel powered travelling jib	On both sides of the crane jib.

cranes (including break down cranes). Monorail jib cranes, Morgan and scotch derricks, self supporting and wall mounted swing jibs. Truck mounted jib cranes, etc.	
Portal and wharf cranes, "Titan" type cranes. Container handling cranes, etc.	On both sides of the portal structure facing the direction of travel.
Runways, of the single longitudinal girder type, etc..	At suitable intervals on both sides of the longitudinal girder.

- **Note** : *On runways over tracks used by steam locomotives the safe working load may be stencilled on both ends of the girder or in some other prominent position outside the area affected by smoke. The logsheet for the runway concerned must be endorsed accordingly*.

Gantries (consisting of two uprights and a fixed cross member).	On both sides of the cross member or prominently on both sides of one of the uprights.

- **Note :** *A suitable board, securely attached to the appliance, may be used instead of stencilling in some applications.*

16 RECORDS

16.1 EQUIPMENT FILE

16.1.1 Each piece or set of equipment subject to this Code of Practice shall have a file.

16.1.2 This file will be the responsibility of the ***user***.

16.1.3 The file shall contain the following for the particular piece of equipment if applicable:

16.1.3.1 A copy of the initial contract for the procurement.
16.1.3.2 The initial Load test certificates.
16.1.3.3 All defect reports during the warranty period.
16.1.3.4 All jobcards for maintenance work done.
16.1.3.5 All accident reports related to the equipment.
16.1.3.6 All service bulletins and equipment updates.
16.1.3.7 All authorisations for repairs including drawings.
16.1.3.8 All authorisations for modifications including drawings.
16.1.3.9 All authorisations for welding including drawings.
16.1.3.10 All authorisations for special lifts e.g. overloads etc..
16.1.3.11 All authorisations for exemptions of this Code of Practice.
16.1.3.12 All logsheets older than one year.

16.1.4 Should there not be such a file for that piece of equipment or if it got lost or destroyed the fist items in the new equipment file should be affidavits by both the ***supervisor*** and the ***user*** as well as other relevant parties, explaining the reasons for the creation of a new file. Copies of these affidavits must also be sent to the Group Risk Manager, Transnet with all the details of the equipment.

16.1.5 This equipment file must be kept by the ***user*** for at least five years after the equipment has been scrapped.

16.1.6 If equipment is transferred from one ***user*** to another the equipment file must be transferred with the equipment to the new ***user***.

16.2 LOGSHEETS

16.2.1 All load tests, inspections maintenance work etc. must be noted and signed off on the logsheet by a ***competent person*** or the ***examiner***.

16.2.2 The logsheet must serve as permanent record of all incidents related to the particular piece of equipment. All incidents related to it must be individually noted on the logsheet.

16.2.3 The correct logsheet must be used for the correct type of equipment.

17 PROCUREMENT

All procurement of equipment, plant and machinery for Transnet which falls under the jurisdiction of this Code of Practice must be done according to the following requirements:

17.1 The instructions of the Transnet Tender Rules must be followed as far as the particular business unit is bound by them.

17.2 The equipment must be procured and supplied according to specifications approved by a ***Professional Engineer*** acting within the scope of his/her discipline.

- **Note:** *If specifications does not exist for the particular equipment required, it must be drawn up.*

17.3 The specifications mentioned above must as a minimum in general contain the following requirements and information:

17.3.1 Description of the general requirements.
17.3.2 Operating Conditions.
17.3.3 Performance requirements including requirements for:
17.3.3.1Capacity.
17.3.3.2Expected economical life.
17.3.3.3Safety standards.
17.3.4 Quality Standards required (Generally along ISO 9001 lines)
17.3.5 Legal requirements.
17.3.6 Ergonomical requirements
17.3.7 Documentation requirements including:
17.3.7.1Material certificates.
17.3.7.2Load test certificates.
17.3.7.3Operations and maintenance manuals.
17.3.7.4Spares lists.
17.3.8 Training requirements.
17.3.9 Warranty requirements.
17.3.10 Service and back up requirements.
17.3.11 Requirements for delivery and commissioning.

17.4 The technical recommendation for the equipment must be approved by a ***Professional Engineer***.

17.5 It is advisable not to buy any equipment from a supplier who is not willing to supply his/her equipment with adequate and proper certification, documentation, training, warranty and after sales service.

18 HIRED EQUIPMENT

18.1 All machinery, plant and equipment which would fall under the jurisdiction of this code of practice must be supplied with the necessary certification.

18.2 The above mentioned machinery, plant and equipment must be treated as Transnet property and the necessary documentation must be issued for it.

18.3 All the stipulations such as regular examinations and the required performance tests as required by this Code of Practice must be complied with as the user is still responsible for the safety of the equipment.

- **Note:** *The responsibility for regular inspections may contractually rest with the lessor. However if the period of inspection is more than that prescribed by this Code of Practice, parallel inspections according to the requirements of this Code of Practice must be carried out.*

19 RENTING OUT OF TRANSNET EQUIPMENT

19.1 All machinery, plant and equipment which would fall under the jurisdiction of this code of practice and is rented out to any private concern must be supplied to the lessee with the necessary certification.

19.2 These above mentioned machinery, plant and equipment stays the property of Transnet and it must be ensured that the equipment is maintained in a proper and safe condition.

19.3 Thus regular inspections must be done on the equipment according to the stipulations of this Code of Practice.

- **Note:** *It must be ensured that the lessee is contractually bound to the stipulations of this Code of Practice. Should this not be possible or practical the business unit that is renting out the machinery, plant and equipment must carry the responsibility and cost for ensuring that the relevant examinations and performance testing is done,*

20 AMENDMENTS

20.1 This Code of Practice will be amended from time to time as it will need to change in order to stay relevant and practical.

20.2 The reasons for amendments can be placed the following categories :

20.2.1 Statutory environment changes.
20.2.2 Changes in the company structure
20.2.3 Practicality changes.
20.2.4 Changes in technology.

20.3 Any ***user*** of this Code of Practice may propose changes to it be it business units or employees of the Transnet group. Proposed amendments must be sent to the Group Risk Manager, Transnet on Form A-1.

20.4 Each proposal will be considered on its own merits as well as on the impact it will have on the company.

20.5 Changes in legislation that directly affects this Code of Practice will force a mandatory amendment to it.

20.6 Each amendment will be approved by Transnet's CEO, or someone delegated by him in writing, before issue.

20.7 Amendments will only be sent to registered holders of copies of this Code of Practice.

20.8 Each amendment will be entered by the holder into the amendment register in the front of the Code of Practice.

20.9 Each amendment will come with instructions about the removal and destroying and replacement of certain pages. These instructions must be followed as failure to do so will out date the particular copy of the Code of Practice.

20.10 When the amount of amendments become impractical a complete new issue of this Code of Practice will be issued.

21 DISTRIBUTION

21.1 In order to ensure that all holders of this Code of Practice receives amendments, a distribution list for this Code of Practice will be held by the issuer - The Group Risk Manager, Transnet.

21.2 Each distributed copy will have an unique number.

21.3 Each holder of a copy of this Code of Practice will be personally responsible to inform the Group Risk Manager, on the provided tear off forms, of:

21.3.1 A change of address;
21.3.2 A change of owner ship of the code
21.3.3 Receipt of amendments.

21.4 Any requests for copies of this Code of Practice must be addressed to The Group Risk Manager Transnet, Transnet Park, Parktown.

22 RELEVANT ADRESSES

The Group Risk Manager Transnet,
Transnet Park,
PARKTOWN

The Lifting Equipment Census Authority
Room 420
27 Hoek street
BRAAMFONTEIN

The Director (Mechanical)
Occupational Safety
Dept of Labour
Private bag X117
PRETORIA
0001

The Transnet Lifting Equipment Inspection Authority (TLEIA)
c/o The Group Risk Manager
Transnet Park,
PARKTOWN

Mr A S le Roux
Chief Executive
(Spoornet)
Room 1104
Umjantshi House
JOHANNESBURG

Mr C A Möller
Chief Executive
(Petronet)
Room 107
202 Smith Street
DURBAN

Mr I Funnell
Chief Executive
(Portnet)
Room 603
101 De Korte Street
BRAAMFONTEIN

Mr N P Mageza
Chief Executive
(Autonet)
Room 313
Autonet Building
2 Carse O'Gowrie Road
PARKTOWN

Me. Hazel Ralefeta
Managing Director
Viamax (Pty) Ltd
Ground Floor
Cradock Place

Mr M F Myburgh
Chief Executive
(Airways)
6th Floor
Airways Park

10 Arnold Road
ROSEBANK

Jones Street
JOHANNESBURG INTERNATIONAL AIRPORT

Mr L R Raath
Acting Chief Executive
(Promat)
11th Floor
Promat Centre
27 Stiemens Street
BRAAMFONTEIN

Mr van Jaarsveld
Chief Executive Officer
Room 100
Apron Handling Building
JOHANNESBURG INTERNATIONAL AIRPORT

Mr D W Janisch
Chief Executive Manager
(Protekon)
Room 800
Union Square Building
80 Plein Street
JOHANNESBURG

Mr A M E Schultze
Chief Executive
(Transtel)
Level 4
FORUM III
Braampark
BRAAMFONTEIN

Mr C Smit
Chief Executive Manager
(Transwerk)
Room 1, Transwerk Park
Lynette Street
Kilnerpark
PRETORIA

Mr M G S Mackintosh
General Manager
(Property) 12th Floor
Room 1200
Total House
209 Smit Street
BRAAMFONTEIN

Mr A Strauss
Executive Manager
Transnet Heritage Foundation
South Station Building
Cnr. Eloff and De Villiers Streets
JOHANNESBURG

CODE OF PRACTICE NO. 29

Part 3: Equipment Instructions

CODE OF PRACTICE No.29
PART 3 : EQUIPMENT INSTRUCTIONS

Part 3 : Equipment Instructions

1. PURPOSE

1.1 The purpose of this section of this Code of Practice is to determine firstly the general inspection procedure for plant and machinery, with emphasis on lifting equipment, within Transnet.

1.2 Secondly its purpose is to determine the inspection, testing as well as design, manufacturing and/or procurement criteria procedures for particular groups of equipment.

1.3 Thirdly it's purpose is to do all of the above aimed at specified equipment which are in some cases unique to Transnet.

2. REFERENCES

2.1 Occupational Health and Safety Act and Regulations - Act 85 of 1993

2.2 Original Equipment Manufacturer's (OEM) operating, maintenance and inspection and testing instructions and manuals.

2.3 High mast light instructions.

2.4 Transnet Code of Practice No. 30.

2.5 Transnet Code of Practice No. 7

2.6 Relevant SABS Standards including:
- 2.6.1 SABS 1126
- 2.6.2 SABS 1144
- 2.6.3 SABS 1358
- 2.6.4 SABS 1594
- 2.6.5 SABS 1599
- 2.6.6 SABS 1636
- 2.6.7 SABS 1637
- 2.6.8 SABS 1638
- 2.6.9 SABS 1639
- 2.6.10 SABS 1640

2.7 Relevant BS Standards including:
- 2.7.1 BS 466
- 2.7.2 BS 2573 Parts 1 & 2
- 2.7.3 BS 3481

2.8 Relevant ISO Standards

3. GENERIC TEST AND EXAMINATION PROCEDURE

3.1 The testing of the equipment must be undertaken by a competent artisan[1] , delegated by the Supervisor to undertake these duties. He must be conversant with the maintenance of the equipment he is required to test.

3.2 The mass piece used for testing purposes must be within 2.5% of the actual mass prescribed for the test.

3.3 The test piece must be lifted evenly without jerking or swaying to the height stipulated, maintained for at least one (1) minute under normal as well as under E-stop conditions and thereafter lowered in the same manner.

3.4 Immediately after the test, the artisan conducting the test must thoroughly examine the appliance for signs of damage or defects which may become apparent as a result of the test. These defects, if any, must be endorsed on the applicable logsheet for the attention of the Supervisor and the logsheet cancelled.

- **Note :** *Damage or defects which are apparent before the test, must at the discretion of the Supervisor, be repaired prior to the test being undertaken.*

3.5 The artisan conducting the test must endorse on the relevant logsheet the following detail:

3.5.1 Mass of test load used, in kilograms

3.5.2 Date of test

3.5.3 Whether test was satisfactory or not

3.5.4 Result of the post-test examination

3.5.5 His name and signature

3.5.6 Any comments he might have

3.6 The Supervisor in charge of the artisan undertaking the test must countersign the entry on the relevant logsheet, to certify that the test was properly conducted.

[1] *This competent artisan is known as an examiner (See definition 2.4 & 2.11)*

4. GENERIC EQUIPMENT INSTRUCTIONS

4.1 HOISTS, CHAIN- AND ROPE PULLEY BLOCKS AND ASSOCIATED EQUIPMENT

4.1.1 Chain blocks, pull lifts, hand-, electric, or pneumatic powered hoists, equipped with link or roller load chains, must be tested annually to 1,25 times their maximum safe working load. The entire length of load chain, except for one half turn around the sprocket, gypsy or load sheave, must be run out and carefully examined. The test load must then be lifted to a height of 50% of the length of chain so run out. This will ensure that the entire length of chain and the hook is subjected to the test load. The entire length of chain, including that around the sprocket, gypsy or load sheave, must be thoroughly examined.

4.1.2 Where appliances are permanently fixed and operate in one location only, the test load i.e. 1,25 times maximum safe working load must be placed flat on the ground under the appliance and then lifted from this position, through 50% of the normal working height of the appliance. The full length of chain must be carefully examined for defects, damage or wear on completion of the test.

4.1.3 If an electric or pneumatic powered hoist is not capable of lifting 1,25 times it's safe working load, it must be tested to 1,1 times it's safe working load. The chain must be removed and tested with the hook to 1,25 times the safe working load of the powered hoist. The entire length of the chain and hook must be thoroughly examined on the completion of the test.

4.1.4 Hand-, electric-, or pneumatic powered hoists equipped with steel wire hoist ropes must for purposes of examination and testing be regarded as overhead cranes. The hooks (and cross heads where applicable) fitted on such hoists must be removed and tested at the prescribed intervals.

4.1.5 It is not necessary that chain blocks, pull lifts, suspended scaffold hoist (of the manually operated drum type), hauling blocks and single or multiple sheave blocks purchased from private industry, be tested prior to being placed in service if a manufacturer's test certificate is provided. Such test certificates will remain valid for one year from the date the equipment concerned was placed in service.

- **Note :** *Where the above mentioned equipment is operated under cover of a manufacturer's test certificate, the test certificate number and date the equipment was placed in service must be reflected on the applicable logsheet.*

- *Electric or pneumatic powered hoists equipped with link or roller load chains must be tested before being placed in service irrespective of whether a manufacturer's test certificate is provided.*

4.1.6 Chain blocks, electric or pneumatic hoists, pull lifts, rope pulley blocks and suspended scaffold hoists must have a factor of safety of not less than 5. Hauling and pulling blocks must have a factor of safety of not less than 4. Steel wire rope and natural or man made fibre ropes shall have a factor of safety as prescribed in clause 6.26 of Part 3 of this Instruction.

4.1.7 Rope pulley blocks, chain blocks, electric and pneumatic hoists, pull lifts, pulling and hauling blocks, suspended scaffold hoists etc, must be examined at least once every month in a systematic manner, by the examiner and the result of this examination be recorded on the applicable logsheet.

4.1.8 Rope pulley blocks, chain blocks, electric and pneumatic hoists, pull lifts, suspended scaffold hoists, pulling and hauling blocks, etc. must have stamped on them the following particulars

4.1.8.1 Number

4.1.8.2 Safe working load in kilograms below 1 000 kg and in tons and decimals thereof, for 1 000 kg and over.

- **Note:** *The markings are to appear in addition to the existing capacity markings of the manufacturer.*

4.1.9 The marking of the above mentioned particulars on rope pulley block sheaves of light construction may be carried out using an electric stylus marking device instead of stamping with figure or letter types, if so desired.

4.1.10 Sheave blocks for rope pulley blocks must be individually numbered by means of a suffix a or b following the unit number. Sheave blocks for rope pulley blocks must as far as possible not be interchanged. Where it is necessary to replace one sheave block in the unit this sheave block must

be correctly numbered with the applicable unit number and suffix.

4.1.11 Suspended scaffold hoists of the manually operated drum type i.e. where the hoisting wire is manually wound around a drum to effect lifting action, must be tested annually to 1,25 times their maximum safe working load over a lifting height of not less than 5 metres. The full length of steel wire rope must be carefully examined for defects, damage or wear.

4.1.12 Hauling and pulling blocks, and suspended scaffold hoists, of the type where pairs of friction jaws progressively grip and pull against a steel wire rope, must be tested annually to 1,25 times their maximum safe working load, after being stripped, examined and repaired if necessary. The full length of steel wire rope must be examined for defects, damage or wear.

- **Note** *Hauling and pulling blocks are included as it is possible that they could be used for lifting a load at any time.*

4.1.13 Single or multiple sheave blocks that are used in conjunction with hauling blocks, snatch blocks, and similar sheave blocks must be tested annually by suspending them from a fixed point and applying the under mentioned test loads for a period of at least one minute.

4.1.13.1 **Single sheave blocks**: Test load to be 2.5 times the maximum safe working load of the sheave block concerned.

4.1.13.2 **All other multiple sheave blocks**: Test load to be 2 times the maximum safe working load of the sheave block concerned.

- **Note** *There is no objection to single or multiple sheave blocks being tested in a chain testing machine*

4.1.14 Fibre or steel wire rope must be removed from rope pulley block assemblies and the single or multiple sheave blocks must be tested (including the bracket) annually to the test loads specified in clause 4.1.14 of part 3 of this Instruction. The fibre or steel wire rope must be carefully examined for defects, damage or wear before being replaced on the assembly.

4.1.15 If the hooks and/or chains on chain blocks, pull lifts, hand-, electric-, and pneumatic hoists fitted with load chains, and hauling blocks, are found to be damaged or defective they must be scrapped and replaced by a new hook or chain. Repairs to these components are not permitted.

4.1.16 Where shackles, rings, chains, etc., are used to suspend chain blocks, pull lifts, hoists, pulley blocks, etc., they must receive regular attention as prescribed.

4.1.17 The prescribed testing of rope pulley blocks, chain blocks, electric and pneumatic hoists, pull lifts and hauling blocks and suspended scaffold hoists, may be done by the respective Supervisors provided that suitable facilities are available and that the prescribed procedures are rigidly adhered to.

4.2 BINS

4.2.1 Bins for handling sand, swarf and other materials must be examined at least once every three months by the examiner and the result of this examination be recorded on the applicable logsheet.

4.2.2 Only bins of a design which has been approved by a Graduate Engineer and which have successfully passed a proof loading of twice the intended safe working load, before being placed in service, may be used for the handling of materials in areas where staff are working. Also, that during design, due cognisance is taken of the type of material to be handled, the methods of handling to be employed as well as the magnitude of the loads involved.

4.2.3 The safe working load, in kilograms, must be stencilled prominently on all bins for handling sand, swarf and other materials.

4.2.4 Bins must be tested to twice the safe working load before being placed in service and after heavy repairs. The results of these tests must be endorsed on the applicable logsheet.

4.3 BULK CARGO BUCKETS AND SCOOPS

4.3.1 Bulk cargo buckets and scoops must be examined at least once every three months by the examiner and the result of this examination be recorded on the applicable logsheet.

4.3.2 The safe working load, in kilograms, must be stencilled prominently on all bulk cargo buckets and scoops.

4.4 GRABS OWNED BY TRANSNET

4.4.1 Mechanical or hydraulic grabs must be examined at least once every three months by the examiner, or where such grabs are used for loading or off-loading ships, on completion of the loading or off-loading of the ship concerned, by the examiner.

4.4.2 The results of the examination in terms of clause 4.4.1 must be recorded on the applicable logsheets No. 9 and 66.

4.4.3 The operating chains (where fitted) on grabs must be tested at least once every year and the result of this tests be recorded on the logsheet No. 66 applicable to the operating chain concerned.

4.5 LADLES

4.5.1 Foundry ladles fitted with tilting mechanism and the lifting beam assembly of all ladles must be examined at least once every month by the examiner and the result of this examinations be recorded on the applicable logsheets No. 9 and 66 respectively.

4.5.2 The lifting beam assemblies fitted on ladles, including components such as hooks, rings, links, etc. must be regularly tested at the periods as prescribed.

4.5.3 The safe working load, in kilograms, must be stencilled on all lifting beam assemblies fitted to ladles.

4.6 BULK CARGO BUCKETS AND SCOOPS

4.6.1 Cages, platforms and similar type bulk cargo buckets and scoops for the raising or lowering of persons must be designed for that purpose only, have a factor of safety of not less than ten and be approved by a Professional Engineer.

4.6.2 The elevating mechanism and controls must be examined at least once every month by the examiner and the result of this examinations be recorded on the applicable logsheet No. 9.

4.6.3 The lifting appliance concerned must be tested to full capacity (Safe Working Load) prior to being placed in service and after every heavy repair and the safe working load that may be lifted must be clearly stencilled on the appliance.

4.7 LIFTING AND WORK PLATFORMS

4.7.1 Lifting and work platforms (hydraulic, mechanical and mobile) must be examined at least once every month by the examiner and the results of this examinations be recorded on the applicable logsheets.

4.7.2 Lifting and work platforms must be tested to 110% of it's safe working load prior to being placed in service and after every heavy repair and the safe working load that may be lifted must be clearly stencilled on the appliance.

- **Note** *The operator must examine and test the unit functionally after it has been assembled, before use, and also before use at the commencement of each shift.*

4.7.3 Permanently installed work platforms with an adjustable height for maintenance to the outside of rolling stock in workshop areas must be examined systematically at least once every three months by the examiner and the result of this examinations be recorded on the applicable logsheets.

4.8 SKY-CLIMBERS

4.8.1 Powered scaffold hoists "Sky-climbers" are used either single or in multiples to raise or lower boatswains chairs, work-cages or platforms (with or without extensions) and must be examined at least once every three months by the examiner and the result of this examinations be recorded on the applicable logsheets.

4.8.2 The safety device and the optional automatic safety device must be stripped and tested functionally by a competent person, with experience of the maintenance of this equipment, at least once every two years.

- **Note** *The functional test for the safety device requires that the steel wire rope be pulled through the unit sharply, to test the locking ability of the safety device.*

4.8.3 The functional test for the optional automatic safety device requires that the independent safety rope be slackened to test the locking ability of the optional automatic safety device. This optional automatic safety device is provided as a safety measure should the steel wire rope break or slacken whilst the unit is in service.

4.8.4 The complete assembly must be thoroughly examined and tested functionally by the operator prior to use.

4.8.5 The powered scaffold hoists must be individually numbered and the safety devices and optional automatic safety devices, because they are easily detachable, must also be individually numbered.

4.9 SHEAR LEGS, TRIPODS AND DERRICK POLES

4.9.1 Shear legs, tripods and derrick poles must be examined at least once per month by the examiner and the result of this examinations be recorded on the applicable logsheets.

4.9.2 The safe working load, in kilograms, must be clearly stencilled in a prominent position on all shear legs, tripods and derrick poles.

4.9.3 The shackle and bolt at the head of the shear leg or tripod (and where provided on derrick poles) is subject to test procedures as prescribed.

4.10 WINCHES

4.10.1 Winches used for the lifting of loads must be systematically examined at least once every month by the examiner.

4.10.2 Winches which are not used for the purpose of lifting loads must be systematically examined at least once every six months by the examiner.

4.10.3 The result of these examinations must be recorded on the applicable logsheets.

4.11 ELECTROMAGNETS

4.11.1 Electromagnets used in conjunction with cranes for lifting purposes must have the under mentioned information stamped in a prominent place on all such electromagnets.

4.11.1.1 Positive identification number.

4.11.1.2 Rated load (capacity) of the magnet in kilograms.

4.11.1.3 Mass of magnet in kilograms.

- **Note** *Manufacturer's name plates, indicating the serial number, type, capacity, etc., of the magnet must not be removed from such electromagnets.*

4.11.2 Electromagnets used in conjunction with cranes for lifting purposes, must be examined at least once per month by the examiner.

4.11.3 At least once every six months such electromagnets must be subjected to an insulation test to earth and a continuity test of the coils. At the same time the terminal box and plug connections must be cleaned and checked.

4.11.4 The result of this examinations and tests must be recorded on the applicable logsheet No. 9.

4.11.5 Where supporting chain slings or bridles are provided on magnets, these attachments must be covered by a logsheet No. 66 and must be regularly examined and tested in terms of extant instructions.

4.12 AIRCRAFT CABIN LOADERS AND HYDRAULIC CARGO HOISTS

4.12.1 Aircraft cabin loaders and hydraulic cargo hoists must be systematically examined at least once every month by the examiner and be tested functionally to 110% of it's safe working load before being placed in service, after every heavy repair and thereafter at yearly intervals.

4.12.2 The result of this examinations and tests must be recorded on the applicable logsheet No 9.

4.12.3 Manufacturers name plates, indicating the safe working load of aircraft cabin loaders and hydraulic cargo hoists must be retained and where not provided the safe working load must be stencilled in a prominent position.

4.13 MOTOR VEHICLE LIFTS

4.13.1 Motor vehicle lifts must be systematically examined at least once every month by the examiner and be tested functionally to 110% it's safe working load (capacity) before being placed in service, after every heavy repair and thereafter at yearly intervals.

4.13.2 The result of this examinations and tests must be recorded on the applicable logsheet No. 9.

4.13.3 Manufacturers name plates, indicating the capacity of motor vehicle lifts must be retained and where not provided, the safe working load (capacity) must be stencilled in a prominent position.

4.14 LIFTING BELTS

4.14.1 All lifting belts, e.g. belts for traction armatures, manufactured to drawing *CME 3164/15-000*, must be examined at least once every month by the examiner and be tested at least once per annum to 1,5 times the safe working load.

4.14.2 The result of this examinations and tests must be recorded on the applicable logsheet No. 9.

- **Note** *The SABS is in the process of drawing up a Standard / Code of Practice for the inspection and testing of textile lifting belts. When it is accepted please refer to that code of Practice / Standard.*

4.15 BOATSWAINS CHAIRS

4.15.1 Boatswains chairs must be examined at least once every month by the examiner and the result of this examinations be recorded on the applicable logsheet No. 9.

4.15.2 Boatswains chairs shall be so constructed as to prevent any occupant from falling there from and must be securely attached to prevent unintended detachment from the lifting medium.

- **Note** *In the case of boatswains chairs of open construction, e.g. the marine type, the chair shall be fitted with a lifeline which shall be securely fastened around the occupant's waist to prevent the occupant from injury, should he fall from the chair.*

4.16 TRACK LAYING GANTRIES

4.16.1 Track laying gantries and rail loaders must be examined at least once every month by the examiner and be tested to 110% of it's safe working load before being placed in service, after every heavy repair and thereafter at yearly intervals. This test must be carried out by a reliable and competent person.

4.16.2 The result of this examinations and test must be recorded on the applicable logsheets.

4.16.3 The safe working load must be stencilled in a prominent position on all gantries and loaders.

4.16.4 Lifting components used in conjunction with track laying gantries, and rail loaders i.e. scissors grips, etc., must be examined, tested and logged in accordance with extant instructions applicable to this type of equipment.

4.17 LIFTING BAGS AND ANCILLARY EQUIPMENT

4.17.1 Lifting bags and ancillary equipment, including regulators, control units, hoses, etc. must be examined at least once every three months by the examiner.

- **Note** *During this examination, and after use, the examiner must inflate the lifting bags and check the bags for damage or leaks and check that the pressure regulators, relief valves, gauges, etc., are working correctly according to the manufacturers specification to ensure that the equipment is always in good working order for future use.*

4.17.2 The result of this examinations must be recorded on the applicable logsheets.

4.17.3 A separate logsheet must be provided for each individual numbered item of the unit e.g. pressure regulators, control units, lifting bags, etc., because of the possible inter-change of items between units.

4.17.4 In addition to this examinations the equipment must be visually examined before use by the operator and leaking lifting bags and/or faulty regulators or control units must not be used for lifting purposes.

4.17.5 Manufacturers labels indicating the maximum lifting capacity and pressure must be retained on the lifting bags. Should the manufacturers labels be defaced or removed the maximum lifting capacity and pressure must be painted on the lifting bag.

4.18 JACKS

4.18.1 All manually operated jacks, with a lifting capacity in excess of two ton and a lifting height in excess of five hundred millimetres, must be systematically examined at least once every three months by the examiner.

4.18.2 Type A track jacks are exempted from the provisions of this clause, provided they are not used at any time to lift loads under which staff will be required to work.

- **Note** *The lifting height of a jack is defined as the difference in height from the fully lowered position to the fully raised position.*

4.18.3 All power-operated jacks, excluding those which form part of a machine designed for a purpose other than that of a jack, must be systematically examined at least once every month by the examiner.

4.18.4 The result of this examinations must be recorded on the applicable logsheets.

4.18.5 All jacks must have the following particulars stamped on them.

4.18.5.1 Number

4.18.5.2 Safe working load, in kilograms, below 1 000 kg and in tons and decimals thereof from 1 000 kg and over.

- **Note** *The above mentioned markings are to appear in addition to the existing markings of the manufacturer.*

4.19 TRESTLES

4.19.1 For purposes of this instruction the term trestle shall be deemed to mean any device, whether adjustable or otherwise, used to support loads, e.g. motor vehicles or rail wagons undergoing repairs, etc. and on or under which staff may be required to work.

4.19.2 Trestles must be properly designed by competent staff and the design must be approved by a Professional Engineer. A registered and approved drawing must be prepared for each design.

4.19.3 Trestles must have the design safe working load in kilograms and the identification number clearly stencilled on the trestle in a prominent place.

4.19.4 Trestles must be examined before use by the person using the trestle and at least once every six months by the Examiner. The results of the examination undertaken by the Examiner must be recorded on a logsheet (Transnet No.9) (Form A4).

4.19.5 All such entries to include date, Examiner's signature and identification number of trestle, in addition to the condition report.

4.19.6 Defective, deformed or damaged trestles must be withdrawn from service for scrapping or repair. Steps must be taken to ensure that such damaged or defective trestles are not inadvertently used.

- **Note** *A large number of drawings for various types of trestles are available from the Executive Manager (Transwerk) Killer Park. Requests for drawings must include full details of the type of trestle required, the mass to be placed on the trestle and the purpose for which the trestle will be used.*

4.19.7 Trestles bought need not comply to 4.19.2 but must be supplied with a test certificate or else it must be thoroughly examined and a performance test of 2 x SWL must be done by a competent person. The SWL must be clearly stencilled in a prominent place on the new trestle before placing it in service.

4.20 LADDERS

4.20.1 All ladders, including telescopic, extension, free standing or self-supporting ladders, must be examined at least once

every six months by the Examiner and also before use by the person using the ladder.

4.20.2 The result of this examination of each ladder must be recorded on a Transnet Logsheet No.9

4.20.3 Fixed vertical ladders are to be constructed according to drawing *CME 1920/15-000* or to a design approved by a Professional Engineer.

5. CRANES

5.1 GENERAL

5.1.1 All types of cranes must be examined, tested and operated in terms of the act and the instructions contained herein. The following general list of cranes are subject to these regulations:

5.1.1.1 Wharf cranes
5.1.1.2 Container handling wharf cranes
5.1.1.3 Container handling stacking and road/rail transfer cranes
5.1.1.4 Overhead electric travelling cranes
5.1.1.5 Mobile cranes (road or rail mounted travelling jib cranes including steam, petrol and diesel powered jib cranes)
5.1.1.6 Breakdown cranes (steam and diesel powered)
5.1.1.7 Gantries and runways of the single girder type and similar lifting structures
5.1.1.8 Hand operated portable jib cranes
5.1.1.9 Self-supporting or wall mounted swing jibs
5.1.1.10 Truck mounted jib cranes. (hydraulic or mechanically operated)
5.1.1.11 Cranes and derricks mounted on floating craft

- **Note** : *This list is not complete and is only to be considered for general purposes.*

- **Note** : *Davits, used for purposes other than lifting or launching lifeboats on quays, vessels, etc., are subject to the provisions of this section..*

5.1.2 All cranes must be examined for defects and wear at least once every month in a systematic manner, by the examiner. Multi-column gantries and crane rails on which overhead cranes operate must be examined for defects, etc., at least

once every six months, by the examiner and the result of this examination is to be endorsed on the relevant logsheets.

5.1.3 Mobile cranes must be staged on a level surface whilst any work is being carried out on the crane. The vehicle's hand brake must be applied and sufficient wedges or blocks placed in front of the wheels to prevent inadvertent movement of the crane if the hand brake should fail.

5.1.4 Supervisors must satisfy themselves that all cranes under their control are examined and certified to be in a satisfactory working condition before placing them in service.

5.1.5 Before cranes are placed in service, after every overhaul, and when re-erected on a new site they must be tested to an overload of twenty five per cent above the safe working load and thereafter, a yearly performance test of ten per cent above the safe working load over the complete lifting range.

5.1.6 Cranes may only be operated by staff who are certified competent in accordance with Code of Practice No. 30 (Instructions for Boiler Attendants, Operators and/or Divers of Plant), controlled by the General Manager (Infrastructure).

5.2 BREAKDOWN CRANES (STEAM AND DIESEL POWERED)

5.2.1 Breakdown cranes must be examined after returning from a breakdown. The results of this examination must be endorsed on the relevant logsheets.

5.2.2 Breakdown cranes whilst employed on breakdown duties at the scene of accidents are exempt from the provisions regarding overloading, but the officer-in-charge of the breakdown operations must assume responsibility for the safe working of the crane and all staff working in conjunction with the crane during such operations.

5.2.3 The officer in charge of breakdown operations must be a competent person or else another competent person with enough authority to overrule the officer in charge must be appointed as the responsible person and he must be present during such overload lifts.

5.3 GANTRIES AND RUNWAYS OF THE SINGLE GIRDER TYPE AND SIMILAR LIFTING STRUCTURES

5.3.1 For the purpose of this instruction a gantry is defined as a lifting structure consisting of two uprights and a single fixed

cross-member and does not include gantries with multiple uprights on which overhead cranes travel. Such multiple upright gantries are considered as an integral part of the overhead crane.

5.3.2 Gantries in the service of Transnet must at all time be in a safe condition and clearly marked with the safe working load. (In kilograms below 1 000 kilograms and in tons and decimals thereof for 1 000 kilograms and over).

5.3.3 Before a gantry is used, the Artisan must do an inspection for defects and the result of this inspection must be endorsed in the relevant logbook.

5.4 HAND OPERATED PORTABLE JIB CRANES

5.4.1 Hand operated portable jib cranes having link or roller type load chains must be tested annually to 1,5 times their maximum safe working load.

5.4.2 Hand operated portable jib cranes equipped with steel wire hoist ropes must be treated the same as cranes. Where hooks are permanently fixed to the telescopic jibs, i.e. by welding or riveting, and which for some reason cannot be modified so that the hook can be detached, the hook together with the first section of the telescopic jib or beam to which it is attached must be sent to a Transnet workshop for testing.

5.5 SELF-SUPPORTING OR WALL MOUNTED SWING JIBS

5.5.1 Where swing jibs are used in a position where they may interfere with the operation of an overhead electric travelling crane, they must be painted a bright yellow colour to render them as conspicuous as possible. The painted jibs must be kept clean and re-painted when necessary.

5.6 TRUCK MOUNTED JIB CRANES. (HYDRAULIC OR MECHANICALLY OPERATED (THE "HIAB" TYPE))

5.6.1 Truck mounted jib cranes must be tested to the safe working load applicable to the crane.

5.6.2 Gantry type appliances mounted over truck platforms must not be considered as truck mounted cranes and the instruction relevant to gantries, chain blocks or hoists are applicable.

- **Note** *Before use of a Truck mounted jib crane may be used, a daily task must be done and the relevant logsheet 385 must be completed.*

5.7 CRANES AND DERRICKS MOUNTED ON FLOATING CRAFT

5.7.1 Cranes and derricks mounted on barges, lighters, pontoons or other floating craft and used for grab-dredging or lifting purposes are subject to the requirements as for cranes.

5.8 CRANES LIFTING PERSONS

5.8.1 Cranes or similar lifting machines may only be used to raise or lower persons provided that the crane or lifting machine is operated by a operator with proper certification.

5.8.2 In the case of a mobile crane the following is required:

5.8.2.1 the crane must be properly secured on its outriggers
5.8.2.2 the persons who are being hoisted must be effectively anchored to the cage, platform, etc.
5.8.2.3 The cage, platform, etc must be fitted with an additional unstressed sling over the hook.

6. STEEL WIRE AND FIBRE ROPES USED ON LIFTING EQUIPMENT

6.1 Steel wire and fibre rope slings, crane ropes and other ropes used for the purposes of lifting, lowering or suspending loads must be examined at least once every month by the examiner and the result of his examinations be recorded on the applicable logsheet No. 10.

6.2 Steel wire or fibre ropes which form an integral part of any appliance must be examined at the prescribed periods for the appliance concerned, except that ropes fitted on cranes used in applications where the steel wire rope is subject to severe heat e.g. handling molten metal must be examined at least once every two weeks.

6.3 When damage in a steel wire rope is suspected, white spirits must be used to thoroughly clean specific sections of the steel wire rope to enable further inspections. Under no circumstances must paraffin be used for this purpose.

6.4 A metal label must be securely attached to all coils or drums of steel wire rope supplied to Transnet indicating the rope classification, number and size of rope and the coil or reference number. Supervisors must ensure that this information is inserted on the relevant logsheets when the rope is used for lifting purposes.

6.5 For a logsheet No. 10 to be a valid certificate the applicable line, i.e. in the case of new logsheets the first line, columns 1 and 2 must bear the date of manufacture of the sling or rope and the endorsement "New sling/rope issued, manufactured from Grade ..... steel wire rope to Specification …" (or in the case of fibre ropes or slings (both natural and manmade fibre) "New sling/rope issued, manufactured from ..... fibre rope purchased to Specification ..... "), followed by the signature of the person who prepared the sling or rope, and the signature of his Technical Supervisor in control of the shop in which the sling or rope was manufactured or prepared, which are to be reflected in columns 3 and 4 respectively.

6.6 When slings or ropes used for lifting purposes, are prepared or manufactured, the manufacturing depot must issue the required certificate. In the case of the replacement of existing slings or ropes, the relevant logsheet must be certified and in the case of new slings or ropes a new logsheet must be provided and certified.

6.7 Steel wire rope slings made from new steel wire rope in a Transnet workshop, must have the steel wire rope manufacturer's name, certificate or coil number and date of manufacture for the new rope inserted on the logsheet.

6.8 Slings manufactured by workshops outside Transnet shall be supplied with a load test certificate as well as the information required by 6.7

6.9 A permanent record, in book form, is to be maintained by each manufacturing workshop of all slings made and the Technical Superintendent of the shop concerned shall regularly peruse, date and initial this record, to ensure that it is properly maintained.

6.10 In regard to separable lifting tackle assemblies such as four legged steel wire rope slings, lifting beams with steel wire rope components, etc., an identification number for the complete unit may be used and this number, together with a suffix (a, b, c or d, etc.) may be used to identify each individual component concerned. One logsheet must be used for all the steel wire or fibre rope components of each assembly. (Iron or steel components are certified on a logsheet No. 66).

Full information in respect of each component constituting the assembly must be reflected against its specific suffix, on the logsheet concerned.

6.11 The safe working load for the assembly must be clearly stamped on the ring or other end unit. Instances where it is necessary to interchange steel wire ropes or components on essential lifting tackle

assemblies (i.e. container handling spreaders) the Supervisor may decide to allocate an individual number to each detachable steel wire rope or component and an individual number for the beam or spreader.

6.12 In these cases a separate logsheet No. 10 must be provided for each steel wire rope or for each set of steel wire ropes concerned, with a suitable logsheet for the lifting beam or spreader.

6.13 Natural and man-made fibre rope used in various applications should, as far as possible be of the types and sizes specified in the under mentioned specifications.

6.14 Natural fibre rope

Manila (Grade 2)	Specification for sisal SABS 911-1980 Table 2
Cotton	Specification SABS 911-1980 Table 5

6.15 Man-made fibre rope

Polyamide (Nylon)	Specification BS 4928 Part 2 1974 Table 1 36
Polyester	Specification BS 4928 Part 2 1974 Table 2
Polyethylene	Specification BS 4928 Part 2 1974 Table 3
Polypropylene	Specification BS 4928 -1973 Table 1

6.15.1 (Manila grade 2 ropes are identified by a black thread in the centre of each of two strands of the rope and sisal ropes are identified by a red thread in the centre of one strand. Fibre ropes not being so identified should not be used for lifting purposes as they could be a lower quality rope. Cotton rope is not recommended for lifting purposes as it is very much weaker, size for size, than both manila and sisal rope. The practical working mass loads of the various types of fibre ropes are listed on drawing *CME 9195/0-000*).

6.15.2 Fibre ropes and fibre rope slings used for handling loads must be spliced only by competent, qualified persons. It is preferable that such ropes or slings be manufactured or spliced in a Transnet workshop.

6.15.3 The relevant identification details for the coil of fibre rope from which a fibre rope sling was made, must be recorded in the right hand top corner of the logsheet.

6.15.4 Fibre rope, especially man-made fibre rope, is susceptible to damage by various acids and other chemicals and deteriorates when continually exposed to direct sun-light and to the weather. Care must thus be taken when storing fibre rope and/or fibre slings, so that the possibility of undue damage or deterioration is eliminated.

6.16 All steel wire rope and fibre rope slings, except flat woven fibre lifting slings and stringers on fruit skids, must be fitted with a standard black washer in one of the soft eyes over the main rope, stamped with the following particulars :

6.16.1 Depot or station code mark

6.16.2 Departmental code mark

6.16.3 Number of sling

6.16.4 Safe working load (in kilograms)

6.17 If preferred by manufacturers, the particulars in accordance with clause 6.16 can be engraved on the aluminium alloy ferrule used for splicing steel wire ropes by using a round stylus tip.

6.18 If however, manufacturers prefer stamping, it can be done to the following specifications:

6.18.1 Ferrule - code No. 8 to 16 : 3 mm high x 0,5 mm deep
6.18.2 Ferrule - code No. 17 to 24 : 4 mm high x 0,8 mm deep
6.18.3 Ferrule - code No. 25 to 40 : 5 mm high x 1,0 mm deep
6.18.4 Stamping on ferrules smaller than code No. 8 is not permissible.

6.19 Stringers of fruit skids must be fitted with a copper ferrule in place of the standard black washer. The particulars required in clause 6.16 must be stamped on the copper ferrule.

6.20 Flat woven fibre lifting slings must be clearly marked with the particulars required in terms of clause 6.16 Such marking must be printed in clear capital letters, using a black marking pen on a specially provided label or on the body of the sling.

6.21 The above mentioned identification or other particulars of all ropes or slings must also be recorded on the applicable logsheet in the spaces provided.

6.22 Where steel wire rope is inseparably attached to a metal other than wrought iron, forging or casting by means of hand or machine splicing the steel wire rope may, if necessary, be subjected to the same test load as is applied to the metal forging or casting.

6.23 Where fibre ropes are inseparably attached to a metal forging or casting by means of splicing, the fibre rope must be cut off prior to the test load being applied to the metal forging or casting, unless the test can be conducted without damaging or overloading the fibre rope.

6.24 After the test has been completed a new rope must be spliced, or the existing rope (after examination) must be re-spliced, to the metal component.

6.25 Detachable interconnecting shackles must be used to connect steel wire or fibre rope slings to cumbersome lifting beams or spreaders, where it is impractical because of size or mass, to test or manufacture such assemblies as a unit.

6.26 A safety factor of six at least shall be used in the design calculations for all steel wire rope slings. A safety factor of ten at least shall be used in the design calculations for all natural or man-made fibre rope slings.

6.27 The safe working loads of two, three or four-legged slings must be reduced as the angle between the legs increases. An included angle of 120 degrees for any two legs is the maximum permitted angle, and when legs are so spaced, the safe working load is one half that at 0 degrees, i.e. the load capacity of one leg of the sling. The load reduction factors to be employed as the angle between the legs increases are as follows :

Included angle between legs	0°	30°	60°	90°	120°
Load reduction factor	1.0	0.96	0.86	0.7	0.5

EXAMPLE :

A one-leg sling :
Angle 0° safe working load 1 000 kg

A two-legged sling :
Included angle between legs :

0°	safe working load	2 000 kg
30°	safe working load	1 920 kg
60°	safe working load	1 720 kg
90°	safe working load	1 400 kg
120°	safe working load	1 000 kg

6.28 Under no circumstances may one leg of a two-legged sling assembly be used to lift a load in excess of half the indicated safe working load of the assembly.

6.29 For the purpose of calculating safe working loads, three and four-leg slings are to be treated as two-leg slings. The ring or other top-end unit on a three or four-leg sling must therefore be stamped with the safe working load applicable to a two-leg sling.

6.30 The provisions of clause 6.29 do not apply where multiple steel wire rope slings are attached to lifting beams, spreaders, etc., which are designed to flex under uneven load distribution.

6.31 Steel wire rope slings must not be used in applications where the sling is subject to severe heat, e.g. handling molten metal.

6.32 Steel wire or fibre rope slings must not be used at Bosch tanks or chemical baths where the rope and splicing ferrule may be subjected to the corrosive effect of the chemicals used.

6.33 It is preferable that steel wire rope slings are not provided with a permanent covering of any kind, e.g. rubber hose, foam plastics, etc. however where it is essential that such protection for loads be provided, the length of the covering must be less than half of the length between splicing ferrules or splices and such covering must be free to move over the full distance between splicing ferrules or splices.

7. STEEL WIRE OR FIBRE ROPES ON OTHER APPLIANCES

7.1 Once a steel wire rope fitted to a coaling appliance has been found to be defective and replacement of the steel wire rope has been recommended on the logsheet, the examiner must examine the steel wire rope concerned at least once every two weeks until the steel wire rope is replaced. The results of these examinations must be recorded on the relevant logsheet.

7.2 Whilst it is not usually considered necessary to examine steel wire or fibre ropes which are not used for lifting purposes, there are some applications where the failure of a steel wire or fibre rope used for haulage, etc., could have serious consequences. In these instances

there is no objection to the steel wire or fibre ropes used in these applications being treated in the same manner as those used for lifting purposes.

7.3 Wherever practicable, the steel wire or fibres ropes fitted to appliances shall be of sufficient length to provide at least three full turns on the drum at all times.

7.4 Steel wire ropes fitted to appliances used for lifting purposes, must be free of joints and must be of a construction and diameter which is suited to the diameter of the drums and sheaves over which they are to operate.

7.5 Steel wire ropes fitted to appliances used for lifting purposes, other than those mentioned specifically in this instruction, must have a factor of safety of at least six.

7.6 Steel wire ropes fitted to appliances other than those used for lifting purposes must have a factor of safety of at least four. Fibre ropes either natural or man-made fitted to appliances other than those used for lifting purposes must have a factor of safety of at least eight.

7.7 Cranes used in applications where the rope is subject to severe heat, e.g. when handling molten metal in foundries, must be fitted with a steel wire rope having an Independent Wire Rope Core (I.W.R.C.)

7.8 Steel wire ropes on cranes used in applications where the rope is subjected to severe heat must be examined at least once every two weeks.

7.9 Steel wire ropes on wharf cranes used for "grabbing", i.e. using grabs to load or unload bulk commodities, must be examined at least once every two weeks by the examiner during the period they are used for grabbing purposes. The results of these examinations must be recorded on the relevant logsheet.

7.10 Once a steel wire rope fitted to a wharf crane has been found to be defective and replacement of the steel wire rope has been recommended by the examiner (or the Supervisor) on the logsheet, the examiner must examine the steel wire rope concerned at least once every two weeks until the steel wire rope is replaced. The results of these examinations must be endorsed on the relevant logsheet.

7.11 The safety factor for steel wire rope used on cranes, varies considerably, dependent upon the type of crane, the purpose for which it is used, and the intensity of use.

7.12 As a general rule it can be accepted that the safety factor for running steel wire ropes on cranes must equal or exceed the figures quoted below :

7.12.1 Mobile road type cranes : Not less than 5,0

7.12.2 Wharf and container handling cranes: Not less than 8,0

7.12.3 All cranes not listed above : Not less than 6,0

7.12.4 The safety factor for standing ropes on cranes should not be less than 5,0.

7.13 Steel wire ropes fitted on cranes must be free of joints and must be of sufficient length to provide at least three full turns on the drum when lowered to the lowest working position. Steel wire ropes fitted on cranes must be of a construction and diameter which is suited to the diameter of the drums and sheaves over which they are to operate.

7.14 The rope used to support the conveyance or balance mass piece on a goods hoist must be such that the breaking load of the rope is at least six times the maximum working load for the hoists. When the load is equally shared by two or more ropes the factor of safety may be calculated with respect to the sum of their breaking loads.

7.15 Steel wire ropes fitted on goods hoists must be free of joints and must be of sufficient length to provide at least three full turns on the drum at all times.

7.16 Synchrolift hoist wires must meet the requirements of specification *No. 43-219* (Specification for steel wire rope for synchrolift).

7.17 Steel wire rope must be discarded and not used again for the purpose of lifting loads if :-

7.17.1 In any length of rope equivalent to ten diameters of the steel wire rope concerned, the total number of **VISIBLE BROKEN WIRES** exceeds 5% of the total number of wires:

OR

7.17.2 The steel wire rope shows signs of damage or kinking which could reduce the load carrying capacity of the steel wire rope:

OR

7.17.3 The steel wire rope shows signs of severe external and/or internal corrosion.

OR

7.17.4 The core of the steel wire rope is broken and/or protrudes through the lays of the steel wire rope:

OR

7.17.5 It shows signs of excessive chafing, wear or undue uneven wear, e.g. flats on the area of the strands;

OR

7.17.6 The steel wire rope shows signs of other defects which reduce the load carrying capacity of the steel wire rope.

7.18 In order to determine the condition of the core and to establish if the internal corrosion is present, it is necessary for the examiner to periodically open the lays of the steel wire rope at suitable distances along the length of the rope, using a marlin spike.

7.19 Flat woven man-made fibre lifting slings are made of nylon, polyester, or polypropylene filament yarn and must be purchased in accordance with British Standard Specification Number 3481 : Part 2. However, as the British Standard Specification No. 3481 uses a factor of safety of six and Transnet requires a factor of safety of ten, this discrepancy must be taken into account when establishing the size of sling required, prior to placing the order.

7.20 Flat woven man-made fibre lifting slings must be examined throughout their length for surface chafe, cross or longitudinal cuts in the webbing, cuts or other damage to the selvedges and any deficiency in the stitching or damage to the eyes. Where metal end fittings are provided these must be examined for defects.

7.21 The effective length of a flat woven man-made fibre lifting sling must be measured as shown in drawing MTV 517 Sheet 26 (Page xix).

7.22 Flat woven man-made fibre lifting slings are to be used in the configurations as shown in drawing MTV 517 Sheet 27 (Page xx).

8. LIFTING TACKLE COMPONENTS

8.1 Materials specified and used by Transnet for use in the manufacture of lifting tackle components fall within four basic metallurgical categories, namely :

8.1.1 Wrought iron (Grade A)

8.1.2 Mild steel (Grade 300)

8.1.3 Higher tensile steel (Grades 400 and 500)

8.1.4 Alloy steel (high tensile steel, grades 700 and 800)

- **Note**: *The tensile strength of the materials used to manufacture a component increases progressively from wrought iron through to alloy steel.*
- *Therefore a hook manufactured from mild steel will be, dimensionally, considerably larger than a hook of the same capacity manufactured from alloy steel.*
- *It is therefore most important that Supervisors insist that staff under their control look at the safe working load stamped on a lifting tackle component prior to using it to lift a mass. A lifting tackle component must not be subjected to loading above the safe working load stamped on the component.*
- *It is a very dangerous practice to use the physical size of a lifting tackle component as a measure of the components' load carrying ability e.g. the person concerned who may in the past have used alloy steel components and uses the comparative size of these components as a guide could in practice end up using a wrought iron component with half the load carrying capacity.*

8.2 Lifting tackle and lifting tackle components for manufacture, must be designed and approved by a Professional Engineer prior to commencement of manufacture and prints of this approved designs must be forwarded to the General Manager (Infrastructure) for record purposes.

8.3 **WROUGHT IRON**

8.3.1 Transnet is systematically phasing out lifting tackle components and chains manufactured from wrought iron and new or replacement lifting tackle components must no longer be manufactured from wrought iron.

8.3.2 The repair of defective or damaged lifting tackle components or chains, manufactured from wrought iron, must only be undertaken in special circumstances. Where possible all defective or damaged lifting tackle components and chains manufactured from wrought iron must be replaced by components or chain manufactured from steel.

8.3.3 Lifting tackle components and chain, except pitched chain, manufactured from wrought iron must be annealed, as prescribed in extant instructions, at the periods prescribed.

8.3.4 The annealing of lifting tackle components and chains manufactured from wrought iron must be undertaken only in a workshop of Transnet.

8.3.5 Where existing inseparable lifting tackle assemblies contain components made from mild steel or where chain manufactured from wrought iron has in the past been repaired with links made from mild steel the whole assembly or chain must be annealed (including the mild steel components). However if the lifting tackle assembly or chain requires further repair the wrought iron components must be scrapped and suitably substituted with steel components or chain.

8.3.6 Pitched chains (i.e. chains which engage on a pitched sprocket or gypsy for driving purposes) manufactured from wrought iron are exempt from annealing. All such chains must be tested annually to 1,5 times the safe working load during which time the pitch of the chain must be checked to ascertain whether or not stretching has taken place.

8.4 **MILD STEEL** (Grade 300)

8.4.1 Transnet purchases lifting tackle components manufactured from mild steel to the under mentioned specifications :

8.4.1.1 **Chain** : Specification SABS 251 : 1971 Long link steel chain (Grade 300) for general purposes. (Not to be used for the manufacture of lifting equipment).

- **Note:** *Short link chain is purchased dimensionally to Specification SABS 189 : 1971 and with material strength to Specification SABS 251 : 1971, this chain is suitable for lifting purposes.*

8.4.1.2 **Hooks** : Forged steel hooks for chains, slings, blocks and general engineering purposes. (Manufactured to Specification BS.482 which is obsolete and has been withdrawn).

8.4.1.3 **Ramshorn hooks** : Specification BS.3017 : 1958 Ramshorn Hooks.

8.4.1.4 **Shackles** : Specification SABS 812 : 1973 Mild Steel Shackles.

8.4.2 Lifting tackle which consists of mild steel chain or components must be designed to have a safety factor of six, at least.

8.5 **HIGHER TENSILE STEEL** (GRADES 400 AND 500)

8.5.1 Transnet purchases lifting tackle components, manufactured from higher tensile steel, to the under mentioned specifications :

8.5.1.1 **Chain** : Specification SABS 189 : 1971 Short link steel chain (Grade 400) for lifting purposes.

- **Note:** *Grade 500 steel chain is purchased to the above specification except that the material must have a minimum breaking strength of 500 MPa.*

8.5.1.2 **Hooks** : Specification BS 2903 : 1970 Higher tensile steel hooks.

8.5.1.3 **Shackles** : Specification BS 3032 : 1958 Higher tensile steel shackles.

8.5.2 Lifting tackle consisting of higher tensile steel chain or components must be designed to have a safety factor of five, at least.

8.6 ***ALLOY STEEL*** *(HIGH TENSILE STEEL, GRADES 700 AND 800 also Herqaloy & Roqtuff)*

8.6.1 At present no recognised standards organisation specification is available for alloy steel lifting tackle components.

8.6.2 Lifting tackle consisting of alloy steel chain or components must be designed to have a safety factor of four, at least.

8.6.3 Due to its' hardness alloy steel chain and lifting tackle components are more susceptible to fracture from the "notch effect" and lifting tackle components or chain manufactured from this grade of steel must be protected from "nicking" or "notching".

8.7 Lifting tackle components are defined as, lifting beams, spreaders, chains, rings, links, hooks, shackles, some eyebolts, plate or girder grips, armature lifting caps, and similar.

8.7.1 All lifting tackle components must be examined at least once every month by the examiner.

8.7.2 All lifting tackle components must be tested to the prove load at the periods as specified in these instructions.

8.7.3 It is not necessary that lifting tackle components purchased from private industry be tested prior to being placed in service if a manufacturer's test certificate is provided. Such test certificates will remain valid until the testing is again required in terms of extant instructions, calculated from the actual date placed in service, i.e. where extant instructions require that a component be tested annually, the test certificate will remain valid for one year after the date the component was placed in service, thereafter the component must be sent to a Transnet workshop for testing.

8.7.4 Where a lifting tackle component is operated under cover of a manufacturer's test certificate the test certificate number and date and the date the component was placed in service must be reflected on the applicable logsheet.

8.7.5 Where, because of size or capacity, it is impractical to test lifting tackle components, such as lifting beams, spreaders, etc., these components must be carefully examined, by the examiner, at the periods prescribed for testing after approval for this has been obtained in writing from a Professional Engineer.

8.7.5.1 This approval must be filed in the equipment file and a copy must be attached to the logsheet.

8.7.5.2 All the detachable components used in conjunction with, and attached to, the component mentioned above, must however be removed and, if practical, subjected to the prescribed testing procedures.

- **Note:** *The Supervisor must in all cases concur that it is impracticable to test the lifting tackle components in question.*

8.7.5.3 In all cases where the examination of lifting tackle components result in defects, damage or other unsatisfactory features, being logged by the examiner, the Supervisor must arrange for the component to be repaired or replaced.

8.7.6 The results of the above mentioned examinations and test must be endorsed on the relevant logsheet No. 66 or logsheet No. 9 in the case of lifting beams or spreaders fitted with mechanical, hydraulic or electrical operating equipment.

8.7.7 Where an inseparable lifting tackle assembly is made up of components of a similar category of material, i.e. wrought iron or steel etc., only the end unit must be typed with the identification particulars.

8.7.8 Components of dissimilar categories of material, e.g. wrought iron, mild steel etc., must not if possible, be inseparably joined together.

8.7.9 Detachable interconnecting shackles must be used in all composite assemblies where it is necessary to :

8.7.9.1 Connect wrought iron components to steel components or to steel wire or fibre rope.

8.7.9.2 Connect components manufactured from different categories of steel, e.g. mild steel to alloy steel.

8.7.9.3 Connect steel wire or fibre rope slings or other lifting tackle components to cumbersome beams or spreaders where it is impractical, because of size, etc., to manufacture or test such an assembly as a unit.

8.7.10 Hooks, shackles, etc., fitted to cranes and hoists must also be marked by typing with the information required. Usually in these cases the crane or hoist number is used as the identification number. Where two or more hooks, shackles, etc. are fitted on a single crane a suffix (a, b, c or d, etc.) can be included in the identification number.

8.7.11 When lifting tackle components are annealed, tested or repaired the existing code marks and identification numbers must be examined and, if necessary, be re-stamped to provide a clear and legible marking.

8.7.12 When chains and other lifting tackle components are used for handling molten metal, the safe working load typed on the component must be de-rated by 25% and the new safe working load thus obtained must not be exceeded.

8.7.13 Workshops must type the applicable safe working load on the component and must not type the de-rated safe working load on components destined for use in handling molten metal.

8.7.14 Chains or lifting tackle components must not be used, without prior authority from the head of the business division

or business unit concern, in applications where the temperature of the said chains or lifting tackle components can exceed 400°C.

8.7.15 Requests for the above-mentioned authority to use chains or lifting tackle components subject to severe heat conditions must include all details of the application involved, the mass to be lifted and details of chains or lifting tackle components it is proposed to use.

8.8 PERIODS AT WHICH LIFTING TACKLE MUST BE TESTED AND THOROUGHLY EXAMINED:

DESCRIPTION	TEST AND THOROUGHLY EXAMINE AT LEAST ONCE EVERY
Wrought iron chain slings including those forming part of a lifting tackle assembly or lifting beam	6 months
Steel chain slings (including those forming part of a lifting tackle assembly or lifting beam). Wharf - crane hook and chain assemblies. Foundry ladle lifting beam assemblies and wrought iron or steel chain fitted on cranes, chains on grabs, (other than those used for loading, or off-loading ships), twist-locks	12 months
Lifting beams, spreaders, plate and girder clamps and lifting tackle components (i.e. hooks, cross-heads, shackles, rings, links, turnbuckles, eyebolts, armature lifting caps, etc.) up to and including 10 000 kilogram capacity	12 months
Lifting beams, spreaders, and lifting tackle components (i.e. hooks, cross heads, shackles, rings, links, turn buckles, eyebolts, etc.) over 10 000 kilogram but under 25 000 kilogram capacity	36 months
Lifting beams, spreaders, and lifting tackle components (i.e. hooks, cross heads, shackles, rings, links, turn buckles eyebolts, etc.) of 25 000 kilogram capacity and over	60 months
Chains on grabs used for loading or off-loading ships	On completion of loading or off loading of the ship

	concerned

8.9 PERIODS AT WHICH LIFTING TACKLE MUST BE ANNEALED

DESCRIPTION	ANNEAL AT LEAST ONCE EVERY
Wrought iron chain slings (including those forming part of a lifting tackle assembly or lifting beam)	6 months
Wrought iron chains fitted to cranes, wrought iron wharf crane hook and chain assemblies, wrought iron lifting beams and foundry ladle lifting beam assemblies	12 months
Wrought iron lifting tackle components (i.e. hooks, cross-heads, shackles, rings, links, turnbuckles, eyebolts etc.) up to and including 10 000 kilogram capacity	12 months
Wrought iron lifting tackle components (i.e. hooks, cross-heads, shackles, rings, links, turnbuckles, eyebolts etc.) over 10 000 kilogram but under 25 000 kilogram capacity	36 months
Wrought iron lifting tackle components (i.e. hooks, cross-heads, shackles, rings, links, turnbuckles, eyebolts, etc.) 25 000 kilogram capacity and over.	60 months

8.10 TEST LOADS TO BE APPLIED WHEN TESTING LIFTING TACKLE DESCRIPTION TEST LOAD TO BE APPLIED

DESCRIPTION	TEST LOAD TO BE APPLIED
Wrought iron and steel chain slings	2 .x SWL
Wrought iron or steel wharf crane hook and chain assemblies, wrought iron or steel chain fitted on cranes, wrought iron or steel chains on grabs	2 x SWL
Wrought iron or steel, foundry ladle lifting beam assemblies, lifting beams and spreaders, plate and girder clamps, turnbuckles, twistlocks	1.5 x SWL
Wrought iron or steel lifting tackle components (i.e. hooks, cross-heads, shackles, rings, links, eyebolts, armature	

lifting caps, etc.)	
Up to and including 50 000 kilogram capacity	2 x SWL
Over 50 000 kilogram capacity but under 100 000 kilogram capacity	SWL + 50 000 kilogram
100 000 kilogram capacity and over	1.5 x SWL

8.11 All lifting tackle components must be typed with the under mentioned particulars using steel letter or numeral types :

8.11.1 Depot or station code mark

8.11.2 Departmental code mark

8.11.3 Number of component or assembly

8.11.4 Safe working load (in kilograms)

8.12 In addition the grade of the material from which the component has been manufactured must be typed on the component. This figure being enclosed in a suitable size circle viz.:

8.12.1 Wrought iron ..... A

8.12.2 Mild steel..... M

8.12.3 Higher tensile.....S

8.12.4 Alloy steel..... T

- **Note:** *Each component in a separable composite assembly must be marked with the above mentioned information. Only the main component (end unit) of an inseparable composite assembly (i.e. where components are not readily detachable) must be marked. The individual components must not be marked.*

8.13 The typing of identification or other details in areas other than those specified is not permitted.

- **Note:** *The use of punch marks (by using a blunt punch) to determine the throat opening of hooks is permitted.*

8.14 The above mentioned details must be typed only in the areas depicted in the drawings MTV 517 Sheets 28 to 40 (See pages xxi to xxxii).

8.15 The maximum allowable wear on lifting equipment is as follows :

8.15.1 **HOOKS** :

8.15.1.1 Maximum wear is -15% of original cross section. Maximum throat opening is +15% of original opening for mild steel hooks only.

8.15.2 **SHACKLES** :

8.15.2.1 Maximum wear is -15% of original cross section at any point of the shackle.

8.15.3 **RINGS, LINKS AND EYEBOLTS** :

8.15.3.1 Maximum wear is -15% of original cross section at any point of the ring, link or eyebolt.

8.15.4 **CHAINS** :

8.15.4.1 Maximum wear is -15% of original cross section at any point. Maximum permissible stretch of chain link is +3% above the standard length measured over the outside of the link.

8.16 **HOOKS** :

8.16.1 The threads on the shank and nut of all hooks, eyebolts, etc. fitted to cranes or lifting tackle, having a capacity of 25 000 kilograms and over, must be examined at least once every three years, and after testing, by the artisan responsible for the maintenance of the crane or lifting tackle. The threads must be properly cleaned and examined and the wear established by screwing the nut on the shank thread and checking the free-play. On hooks under 25 000 kilograms capacity the threads must be examined whenever the hooks are tested.

8.16.2 In the case of hooks of 25 000 kilograms and over the results of the above mentioned examination must be recorded on the relevant logsheet No. 66.

8.16.3 Gin-blocks fitted to cranes must be so designed as to permit the hook and cross-head to be removed for testing.

- **Note:** *Existing gin-blocks which do not meet this requirements may be retained in service provided the Supervisor concerned is satisfied that it is possible to test the complete gin-block as a unit.*

8.16.4 All hooks, which will be used for lifting purposes, manufactured in Transnet workshops must be tested by the magnetic crack detection method immediately after manufacture. This test will be in addition to the normal overload test.

8.17 HOOKS FOR BREAKDOWN WORK

8.17.1 In some applications connected with breakdown work, it is necessary to use a hook with the point cut back as illustrated in drawings MTV 517 sheets 41 & 42 (Pages xxxiii and xxxiv).

8.17.2 This modification is only permitted on hooks which are used for the express purpose of clearing wreckage, etc., from the scene of accidents, derailments, etc.

8.17.3 Request to modify hooks for breakdown work must be approved by the Regional Engineer (Mechanical Equipment and Vehicles) concerned.

8.17.4 Where authority is approved the reference and date of the authority must be endorsed on the relevant logsheet.

8.18 WHARF CRANE HOOK AND CHAIN ASSEMBLIES

8.18.1 Wharf crane hook and chain assemblies manufactured from wrought iron must be stripped completely for annealing and testing. All components must be thoroughly examined before re-assembly.

8.18.2 Wharf crane hook and chain assemblies manufactured from steel must be partially stripped for testing. The nuts on the hook and eyebolts must be removed and after the threads have been examined, must be temporarily replaced, without the thrust races for testing.

8.18.3 The pins may be examined in position, however if there is doubt as to their condition, the pins must be removed for further examination. All components must be thoroughly examined before the thrust races and nuts are replaced.

8.18.4 Before replacing the nuts on eyebolts and hooks of hook and chain assemblies during final assembly, the artisan must check the "free play" of the threads by screwing the nuts onto the threads.

8.19 SHACKLES

8.19.1 The pins on shackles must be secured in such a manner that they cannot be accidentally dislodged during lifting operations. Where shackles form part of an inseparable lifting tackle assembly, or where the shackles are so positioned that it cannot be seen by the user, the pins of the shackles must be secured as depicted on drawings MTV 517 Sheets 33 & 34. Screwed pin shackles may be used where it is necessary to detach shackles during lifting operations.

8.19.2 It is acceptable that shackle pins are integral parts of the shackle and, as such, must be subjected to testing and certification in conjunction with the shackle. When shackles are sent for testing, etc., the shackle pins must accompany the shackle.

8.19.3 Where practicable shackle pins must be stamped with the identification number for the shackle plus the appropriate suffix on the end of the pin. This information must also be endorsed on the logsheet concerned. (It is accepted that smaller size shackle pins do not allow for such marking).

8.19.4 Only shackles covered by proof-loading test certificates (provided by the supplier), must be used for lifting purposes.

- **Note:** *A type of shackle, known as commercial shackle, is marketed by a number of suppliers. These shackles are not recommended for applications involving the lifting of loads. This type of shackle is not provided with a proof-loading test certificate from the manufacturer.*

8.20 CHAINS

8.20.1 All steering chains are to be annealed (where applicable) and tested at least once per year.

8.20.2 Chains in lifting tackle assemblies, or used for lifting purposes, must not be used if chain links have been bolted or wired together to effect a repair. The repair of chain links by means of welding may only be undertaken in a Transnet workshop.

8.21 TWIST-LOCKS (USED FOR HANDLING CONTAINERS)

8.21.1 Care must be exercised when testing twist-locks to ensure that they are tested for the designed safe working load and are not subjected to loads in excess of the permissible test load (Not more than **0.35 x SWL** of spreader)

8.21.2 Under no circumstances may twist-locks be repaired (including repairs by welding or heating). Defective, damaged or worn twist-locks must be discarded and replaced by new twist-locks.

8.21.3 During the regular periodic examinations the examiner must report on any twist-lock which is bent, deformed or otherwise damaged or where the wear on the twist-lock lips is in excess of that allowed in extant instructions.

8.22 EYE-BOLTS

8.22.1 Only eye-bolts which are used for general slinging work are subject to periodic examination and testing. Eye-bolts which are permanently fitted to electric motors, gearboxes, etc., and are used solely for the purpose of lifting the electric motor, gearbox, etc., at infrequent intervals, are exempted from examination and/or testing.

8.23 PLATE AND GIRDER LIFTING CLAMPS

8.23.1 Plate and girder lifting clamps must be provided with a locking device which prevents the gripping pawl from disengaging under vibration or when the load on the pawl is suddenly released.

8.23.2 The moving parts, such as toggles, cams or pawls, of plate and girder lifting clamps must be examined for wear and damage by an artisan prior to being tested.

8.24 CONNECTING LINKS (See drawing MTV 517 Sheet 32)

8.24.1 Connecting links may be used only in combination with other lifting tackle assemblies or components which are subjected to regular testing.

8.24.2 Connecting links are considered as a part of the lifting tackle assembly or component with which it is used e.g. where a connecting link is used to join a length of chain to a hook to make a chain sling, this assembly will be considered as an inseparable assembly.

8.24.3 The logsheet No. 66 for the lifting tackle assembly or component fitted with a connecting link, must be clearly endorsed that a connecting link is provided.

8.24.4 Where lifting tackle assemblies or components are provided with a connecting link, the connecting link must be examined and tested at the same time as the assembly or component concerned.

8.24.5 Connecting link load pins (or in some instances the spring catch which locks the load pin) must be examined at the same time as the connecting link. If the load pin still fits tight into the connecting link and the spring catch is not damaged it can be used again.

8.24.6 Where a connecting link is used as a separate component, for breakdown work (derailments), it must be marked in accordance with drawing MTV 517, Sheet 32. The relevant information must be recorded on a separate logsheet.

8.25 **SHORTENING CLUTCH** (See drawing MTV 517 Sheet 30)

8.25.1 Shortening clutches may be used only in combination with other lifting tackle assemblies or components which are subjected to regular testing.

8.25.2 Shortening clutches are considered as an inseparable part of the lifting tackle assembly with which they are used.

8.25.3 The logsheet No. 66 for a lifting tackle assembly fitted with a shortening clutch must be clearly endorsed that a shortening clutch is provided.

8.25.4 Where lifting tackle assemblies are provided with a shortening clutch, the shortening clutch must be examined and tested at the same time as the assembly concerned.

8.25.5 Where the bolt or pin which secures the shortening clutch to the lifting tackle assembly is worn or damaged it must be replaced by a correct size bolt or pin provided by the manufacturer of the shortening clutch. Under no circumstances must mild steel bolts or pins be used to replace such worn or damaged bolts or pins in shortening clutches.

8.26 **REEVABLE EGG LINK** (See drawing MTV 517 Sheet 38)

8.26.1 Where the bolt or pin which secures the reeveable egg link to the lifting tackle assembly is worn or damaged it must be replaced by a correct size bolt or pin provided by the manufacturer of the reeveable egg link. Under no circumstances must mild steel bolts or pins be used to replace such worn or damaged bolts or pins in reeveable egg links.

8.26.2 It is accepted that pins or bolts used to secure reeveable egg links to the lifting tackle assembly are integral parts of the reeveable egg link, and as such, must be subjected to testing and certification in conjunction with the reeveable egg link. When reeveable egg links are sent for testing, etc., the pins or bolts must accompany the reeveable egg link.

8.27 **LIFTING BEAMS AND SPREADERS**

8.27.1 Lifting beams or spreaders must be designed to have a safety factor of four, at least.

8.27.2 The results of the examinations and tests on lifting beams and spreaders must be endorsed on a logsheet No. 66, except where lifting beams and spreaders are fitted with mechanical, hydraulic or electrical operating equipment (e.g. container handling spreaders, telescopic spreaders etc.), in which case a logsheet No. 9 must be used for the lifting beam or spreader and a logsheet No. 66 for all detachable lifting tackle components, e.g. rings, twist-locks, etc.

8.27.3 When lifting beams or spreaders fitted with mechanical, hydraulic or electrical operating equipment are examined or tested the operating equipment must also be examined and defects or deficiencies must be recorded on the relevant logsheet No. 9.

8.28 **TURNBUCKLES (RIGGING SCREWS OR BOTTLE-SCREWS) USED FOR LIFTING PURPOSES**

8.28.1 After turnbuckles have been tested, in accordance with extant instructions, the threaded sections must be carefully examined for wear or damage.

9 MACHINERY, PLANT AND EQUIPMENT

9.1 WIRE GRIPPING DEVICES ("COME-ALONG" CLAMPS)

9.1.1 These wire gripping devices are used for tensioning overhead wires and are not used for lifting purposes and therefore are not normally subject to testing.

9.1.2 However where this type of device, if defective, could cause injury where it is used by Electrical Department staff, the device must be examined at least once every three months by a competent person and the result of this examination be endorsed on a logsheet No. 9.

9.1.3 The above mentioned wire gripping devices must be individually provided with an identification number.

9.1.4 When these clamps are used a Crosby type clamp must be used as a safety device but not as the primary form of gripping.

9.2 GRAVING DOCKS

9.2.1 All stairways providing access into and out of graving docks must be provided with suitable handrails on both sides.

9.2.2 All fixed ladders in graving docks, for use in times of emergency, must be provided with a notice at the bottom of the ladder that is clearly marked "Emergency Exit".

9.2.3 A danger zone, clearly indicated in three languages, must be demarcated around all graving docks.

9.2.4 Where private contractors make use of suspended platforms in conjunction with wharf cranes to raise or lower persons, work may only be allowed to commence if they conform to the following requirements.

9.2.4.1 The platform must be examined at least once every month by a competent person and the result of this examination be recorded in a book kept for this purpose.

9.2.4.2 The platform be stencilled with the safe working load in a conspicuous position.

9.2.4.3 An effective safety device must be used to prevent the platform from falling in case of accidental dislodging of the crane hook from the shackle.

9.2.4.4 Persons working on these platforms must wear a safety belt of which the rope must be secured to the platform. Should this prove to be impractical, some other effective means must be used to ensure the safety of the people working on the platform.

9.2.4.5 The contractor must provide the local Risk Management Officer with a safe working procedure for the platform. This procedure must include staff on the dock's edge controlling the platform with ropes.

9.3 PRESSURE AND VACUUM GAUGES

9.3.1 The procedures applicable to the testing, maintenance and handling of pressure and vacuum gauges are detailed in instructions *(Reference) PLT.11/15/704.*

9.4 GAS PRODUCER INSTALLATIONS

9.4.1 Gas producer installations must be maintained and operated in accordance with the provisions of the relevant code of practice.

9.5 GRAIN ELEVATOR SHIPPING SPOUTS

9.5.1 Power driven shipping spouts at grain elevators must be examined at least once every month by the examiner and the result of this examinations be recorded on the applicable logsheet No. 9.

9.5.2 Luffing, slewing or telescopic moving steel wire ropes must be logged on a logsheet No. 10.

9.5.3 Staff who are required to operate power driven shipping spouts at grain elevators must be trained and certified competent to operate such spouts, in accordance with the instructions issued in this regard.

9.6 SHOT-BLAST EQUIPMENT AND SHOT-PEENING MACHINES

9.6.1 All shot-blast chambers, shot blast machines and shot-peening machines must be inspected at least once every six months by the local Risk Manager and the ***Supervisor*** in charge of the maintenance of the equipment.

9.6.2 A joint report compiled by the local Risk Manager and the ***Supervisor*** must be submitted to the local ***Operations Manager*** detailing the results of the above mentioned inspection.

9.7 PILING PLANTS, INCLUDING THOSE MOUNTED ON FLOATING CRAFT

9.7.1 Piling plants must be systematically examined at least once every month by the examiner and the result of this examinations be recorded on the relevant logsheet No. 9.

9.8 HIGHMAST LIGHTING INSTALLATIONS

9.8.1 High mast lighting installations which are provided with a luminare mounting unit which can be lowered, to facilitate the replacement of lamps, etc., and subsequently raised, must be examined and/or tested in accordance with instruction P.027 in this regard, issued by the General Manager, Engineering, Spoornet, Johannesburg.

9.8.2 Where detachable hoisting winches or separate man-carrying maintenance cages are provided, individual logsheets No. 9 must be provided for this equipment. Hooks, links, shackles, etc., used in conjunction with this equipment must be examined and tested in accordance with extant instructions and the result of this examinations and tests be recorded on the relevant logsheets No. 66.

- **Note** *Where the above mentioned equipment, or part of the equipment are not in use for long periods, it can be stored provided the procedures as set out in clause 9.5 are observed*.

9.8.3 Hinged, medium high mast lighting installations (up to 18 metres), both hydraulically and winch operated types, are not considered to be in the same category as high mast lighting installations for the purpose of examination and certification. It is therefore not necessary that these masts be subjected to regular examination. The prerogative remains however with the Supervisor who can, if he so desires, arrange for regular examination of the masts in question.

9.9 HORIZONTAL SLIDING DOORS

9.9.1 All sliding doors fitted to buildings must be provided with a "keep" or other suitable device to prevent the door from becoming accidentally derailed or from collapsing should a derailment occur.

9.10 LIFTS AND ESCALATORS

9.10.1 Supervisors must regularly peruse the lift logbooks and escalator record books held for lifts and escalators under their control to ensure that such lifts and escalators are being examined at the correct intervals and must ensure that lifts are properly maintained.

9.11 GOODS AND MATERIAL HOISTS

9.11.1 Goods and material hoists must be examined at least once per month by the examiner and the result of this examinations be recorded on the relevant logsheet No. 9.

9.12 LIFTING BASKETS

9.12.1 Cane lifting baskets must be examined at least once per month by the examiner and the result of this examinations be recorded on the relevant logsheet No. 9.

9.12.2 Lifting baskets with their lifting bridles and tipping ropes must be thoroughly examined for broken canes or ropes, chafing, deterioration or any defects which could reduce the safe working load of the basket.

9.12.3 Lifting baskets may under no circumstances be subjected to severe heat or be exposed to chemicals which can detrimentally affect the canes or the ropes.

9.12.4 All lifting baskets must have their identification particulars and the safe working load, in kilograms, prominently stencilled on a board which is securely attached to the basket.

9.13 HOISTING NETS

9.13.1 Hoisting nets of wire or rope must be examined at least once per month by the examiner and the result of this examinations be recorded on the relevant logsheet No. 10.

9.13.2 Hoisting nets may under no circumstances be subjected to severe heat or be exposed to chemicals which can detrimentally affect the wires or the ropes.

9.13.3 The identification particulars and the safe working load, in kilograms, of all hoisting nets must be stamped on a standard black washer or a copper ferrule which must be fitted to one of the eyes or one of the legs.

9.14 TRANSNET'S EQUIPMENT AT STONE QUARRIES USED BY PRIVATE CONTRACTORS

9.14.1 The contractor is made fully responsible for all Transnet's machinery, plant and equipment at stone quarries operated by him in terms of the contract.

9.14.2 The contractor is required to operate and maintain all the Transnet machinery, plant and equipment at stone quarries operated by him in accordance with the requirements of the Mines and Works Act and Regulations.

9.15 CHAIN TOW-CONVEYOR INSTALLATIONS

9.15.1 Under-floor chain tow-conveyor installations consist of a driven chain running below floor level, to which platform trolleys or similar trailers are hitched, to tow the said trolleys or trailers from one place to another. These installations are used extensively in the larger goods sheds, etc.

9.16 AIR COMPRESSORS (INCLUDING INTER- OR AFTER COOLERS AND AIR RECEIVERS)

9.16.1 The examination and logging procedure as well as the instructions regarding the maintenance and safe operation of air compressors and air receivers are covered in *Instruction No. 5334 (THE SAFETY, OPERATION, CARE AND MAINTENANCE OF AIR COMPRESSORS)*.

9.17 MAN-SAFETY BLOCK

9.17.1 This type of safety block is marketed under the trade name, "Sala Safety Block, Type SB57".

9.17.2 Safety blocks, including the rope and swivel hook, must be examined and checked for correct operation (by giving the rope a jerk) at least once every month by the examiner.

9.17.3 Safety blocks must be subjected to a thorough examination and functional test at least once every year, or after the block has been subjected to a load from a fall, or if any damage is suspected. The block must be completely stripped, all components examined, repaired if necessary and reassembled, in accordance with the manufacturers instructions, prior to being subjected to the required functional test.

9.17.4 The results of the above mentioned examinations and tests must be recorded on the applicable logsheet No. 9.

9.17.5 Safety blocks, including the rope and swivel hook, must be examined and checked for correct operation (by giving the rope a jerk) prior to use by the operator.

9.18 POWER AND HAND-OPERATED TRAVERSERS AND TURN-TABLES FOR TURNING LOCOMOTIVES

9.18.1 Turn-tables, traversers, both power and hand operated, must be examined at least once every month by the examiner and the results of this examinations be recorded on the relevant logsheet No. 9.

9.19 GRINDING MACHINES AND DISC CUTTERS

9.19.1 All disc cutters, pedestal and bench grinders must be examined at least once per month by the examiner and the result of this examinations be recorded on the relevant logsheet No. 9.

9.19.2 A notice / symbolic sign must be affixed in a conspicuous position on all fixed general purpose grinding machines, i.e. single and double wheel floor, pedestal or bench grinding machines prohibiting a person from using the grinding machine unless he is wearing the proper eye protection.

- **Note** *This notice / symbolic sign must also be fitted to grinding machines provided with perspex protective eye shields. Perspex protective eye shields are not considered as adequate eye protection.*

9.19.3 The supervisor concerned shall be responsible for ensuring that suitable adequate eye protection is provided for operators of single-purpose grinding machines, general-purpose grinding machines and for persons who are required to use disc cutters, as part of their duties.

9.19.4 Unless the nature of the work precludes its use, all grinding machines must be provided with a substantial guard which shall enclose the grinding wheel as far as practicable and which shall be of sufficient strength to withstand the force of a rupturing wheel.

9.19.5 Except in the case where the work piece is not applied to the grinding wheel by hand, every grinding machine must be provided with a substantial, adjustable work rest which shall be securely fixed in position and which shall fit the contour of the grinding surface of the wheel. The surface of the rest should be free of grooves and indentations, i.e. a smooth surface.

9.19.6 This work rests shall at all times be kept in position and adjusted as close as practicable to be within three millimetres maximum from the grinding surface of the wheel, unless the nature of any specific operation makes this impracticable.

9.19.7 The Supervisor must decide whether dust extraction equipment must be provided or not, depending on the specific application of the grinding machines.

- **Note** *Existing and new dust extraction units must be kept in a good working condition.*

9.20 STEEL CHIMNEYS

9.20.1 Steel plate chimneys, with their guys and anchorage's, where applicable, must be examined at least once every six months by the examiner and the result of this examinations be recorded on the applicable logsheet No. 9.

9.20.2 It is not the intention that small steel plate chimneys, such as are fitted to forges, etc., be included in the scope of this instruction. The Supervisor, in collaboration with the examiner must decide in terms of the possible safety hazard

involved, as to which of the smaller chimneys must be subject to the provisions of these instructions.

9.20.3 Steel wire rope guy-wires must be logged on a logsheet No. 10 and the rope anchorage's must be kept clear of dirt, rubble, grass, etc., for examination purposes.

9.21 SYNCROLIFTS (USED FOR LIFTING VESSELS OUT OF THE WATER)

9.21.1 The winches and hoist wires on synchrolifts must be examined at least once per month by the examiner and the result of this examinations be recorded on the applicable logsheets numbers 9 and 10.

9.22 TELESCOPIC GANGWAYS (USED AT HARBOURS)

9.22.1 Telescopic gangways, used at harbours, must be examined at least once per month by the examiner and the result of this examinations be recorded on the applicable logsheet No. 9.

9.22.2 The procedures and instructions to be followed by operators of telescopic gangways are detailed in *Part 7 of Code of Practice No. 30 (INSTRUCTIONS TO BOILER ATTENDANTS, OPERATORS AND DRIVERS OF PLANT)*.

9.23 SAFETY BELTS

9.23.1 Safety belts must be examined at least once every three months by the examiner and the result of this examinations be recorded on the applicable logsheet No. 9.

9.23.2 All safety belts must be individually numbered for easy identification.

9.23.3 All safety belts used by Transnet's staff must meet the requirements of SABS Specification number 809 (latest). The purchase of safety belts which do not meet the requirements of this specification is not permitted.*(Safety belts that meets the requirements of a specification by another recognised standards organisation may after approval of the local Risk Management Officer be purchased)*

9.24 REFRIGERATION PLANTS

9.24.1 Pre-cooling plants at harbours must be maintained and operated in accordance with standing instructions and those issued from time to time.

9.24.2 All doors of refrigeration plant cool rooms, including associated air locks, must be capable of being opened easily and quickly from the inside.

9.25 VERTICAL SLIDING DOORS : INDUSTRIAL TYPE, INCLUDING FLIP-UP OR JACK-KNIFE TYPE DOORS, BUT NOT INCLUDING GARAGE TYPE TIP-UP DOORS

9.25.1 The steel wire ropes, pulleys, balance mass pieces and brackets supporting pulleys or balance mass pieces, incorporated in industrial type vertical sliding doors must be examined at least once every six months by the examiner and the result of this examinations be recorded on the applicable logsheets No. 9 and 10.

9.26 AIRCRAFT PASSENGER STEPS

9.26.1 Aircraft passenger steps must be examined at least once every month by the examiner and the result of this examinations be recorded on the applicable logsheet No.9.

9.27 TYRE PRESSES ('DUQUESNE' TYPE OR SIMILAR)

9.27.1 Automatic tyre presses must be examined at least once every month by the examiner. During this examination special attention must be given to the balance mass piece supporting ropes.

9.27.2 The result of the above mentioned examination must be recorded on the applicable logsheets No. 9 and 10.

9.27.3 Where balance mass pieces on automatic tyre presses are so positioned that they constitute a danger to persons, the balance mass pieces must be provided with suitable guards.

10 GENERAL

10.1 Machine tools, including emery grinders, must be switched off when not in use and must not be allowed to run without the attendance of an operator.

10.2 Before a person switches on or uses a machine he must ensure that he does not place himself or other persons in danger.

10.3 Gates and doors of safety enclosures at hazardous areas must be provided with suitable notices, and where considered necessary by the Supervisor, must be provided with a positive means of locking to prevent unauthorised entry.

10.4 A positive means of ensuring that machinery cannot be operated by unauthorised persons or whilst repair work is in progress, must be provided where considered necessary by the Supervisor.

10.5 Artisans (Electrical) or Artisans (Millwright work) who are required to undertake maintenance work on machinery, which has not been electrically isolated by the Electrical Department, must switch off the main isolating switch and lock it in the "off" position with a suitable lock-out device that can accommodate three padlocks. The Artisan must retain the key on his person until the work has been completed and he removes his lock.

10.6 The interior of all totally enclosed fixed guards, as well as the area they cover on machinery, shall be painted an orange colour

(specification SABS 1040 Part II - 1978 Paragraph 4.3.2) so that the absence of a guard is easily noticed.

10.7 Specifications for new machinery, plant and equipment shall require that all moving parts of such machinery, plant and equipment, be fully and securely guarded or fenced, unless it is not possible to guard such moving parts by virtue of the nature of the operation thereof.

10.8 Specifications for machinery, which under operating conditions are noisy, shall specify the maximum acceptable noise level for the operation of such machinery. These levels shall comply with the requirements of Act 85.

11 SPECIFIED EQUIPMENT

11.1 FORKLIFTS AND SIDE-LIFTS

11.1.1 Forklifts and side-lifts must be examined at least once per month by the examiner.

11.1.2 Forklifts and sidelifts must be tested to 100% of their safe working load through all motions i.e. lifting, tilting, travelling, etc., prior to being placed in service, after every heavy repair and thereafter at yearly intervals. During the above mentioned test the load must be lifted through the full lifting height. This test must be carried out by a reliable and competent person.

11.1.3 The result of the above mentioned examination and tests must be recorded on the applicable logsheet No. 9.

11.1.4 The safe working load in kilograms must be stencilled on both sides of the uprights (mast).

11.1.5 Operators of forklifts and side-lifts, including technical maintenance staff, must be trained in the use of the forklift or side-lift, and in the case of a forklift or side-lift with a lifting capacity of more than 750kg, the operator must be in the possession of a valid Transnet training board certificate for that machine.

11.1.6 Persons required to drive forklifts and side-lifts on a public road, must be in possession of a valid drivers licence issued by the appropriate Registering Authority.

11.1.7 The wear limit on forks are 10%. When a fork has reached this limit (90% of its original thickness) it must be replaced. The examiner must measure the fork thickness in at least

three fixed places, calculate the percentage wear and record both the thickness and the wear on the logsheet with every regular examination.

11.1.8 The wear limit on load chains are 3% measured over 7 links. The examiner must measure the length of seven links in at least two randomly selected places per chain, calculate the percentage wear and record both the average length and the wear on the logsheet with every regular examination.

11.2 STRADDLE CARRIERS

11.2.1 Straddle carriers must be examined at least once per month by the examiner and the result of this examinations be recorded on the applicable logsheet No. 9.

- **Note** *Where the straddle carrier is subjected to a daily service in accordance with the requirements of Instruction 6017 (Preventive Maintenance Scheme), the required examination should be carried out in conjunction with the daily service and the results recorded on the applicable logsheet No. 9.*

11.2.2 Straddle carriers must be tested to an overload of 110% the safe working load through all motions, i.e. lifting, travelling, side shift (where applicable) etc., prior to being placed in service and after every heavy repair. During the above mentioned tests the load must be lifted through the full lifting height. This test must be carried out by a reliable and competent person at low speeds only.

11.2.3 The result of the above mentioned tests must be recorded on the applicable logsheet No. 9 and where applicable, on the Preventive Maintenance History Card for the machine concerned.

11.2.4 The safe working load, in kilograms, must be stencilled prominently on both sides of the vehicle.

11.2.5 Operators of straddle carriers, including technical maintenance staff, must be trained in the use of the straddle carriers, and in the case of straddle carriers with a lifting capacity of more than 5000g, the operator must be in the possession of a valid Transnet training board certificate for that machine.

11.2.6 Persons required to drive straddle carriers on a public road, must also be in possession of a valid drivers licence issued by the appropriate Registering Authority.

11.2.7 The wear limit on load chains are 3% measured over 7 links. The examiner must measure the length of seven links in at least two randomly selected places per chain, calculate the percentage wear and record both the average length and the wear on the logsheet with every regular examination.

11.3 FRONT-END LOADERS AND SWING-JIB LOADERS

11.3.1 Front-end loaders and Swing-jib loaders, used for purposes other than earth-works, must be examined at least once every month by the examiner and the result of this examinations be recorded on the applicable logsheet No. 9.

11.3.2 Operators of front-end loaders and swing-jib loaders, including technical maintenance staff, must be trained in the use of the that machine, and in the case of front-end loaders and swing-jib loaders with a lifting capacity of more than 5000g, the operator must be in the possession of a valid Transnet training board certificate for that machine.

11.3.3 Persons required to drive front-end loaders and swing-jib loaders on a public road, must also be in possession of a valid drivers licence issued by the appropriate Registering Authority.

11.4 LOWLIFT AND PALLET TRUCKS

- **Note** *Manually operated pallet lifters which have a lifting height of 150 mm or less are excluded from the requirements of this clause*.

11.4.1 Low lift platform trucks and pallet trucks must be examined at least once every three months by the examiner.

11.4.2 Low lift trucks and pallet trucks must be tested to full capacity (safe working load) prior to being placed in service and after every heavy repair, by a reliable and competent person.

11.4.3 The result of the above mentioned examination and tests must be recorded on the applicable logsheet No. 9.

11.4.4 The safe working load, in kilograms, must be stencilled on both sides of the vehicle.

11.4.5 Low lift and pallet trucks may not be used on a public road.

- **Note** *In general persons who are required to operate manually powered vehicles of this type and vehicles*

where the operator walks alongside the vehicle whilst operating the vehicle and the lifting capacity is less than 5000kg do not require a certificate of competency.

- *The operator must however have received formal training in the operation of the particular piece of machinery.*

11.5 REACH STACKER

11.5.1 Reachstackers must be examined at least once per month by the examiner and the results of the examinations recorded on the applicable logsheet No. 9.

11.5.2 Reachstackers must be tested to an overload of 10% above the safe working load prior to being placed in service and after every heavy repair. Reachstackers must also be tested to 110% it's safe working load annually. The tests must be conducted in accordance with the makers specifications by a reliable and competent person.

11.5.3 The safe working load indicated in tons must be displayed in prominent positions on both sides of the reachstacker.

11.5.4 Operators of Reachstackers, including technical maintenance staff, must be trained in the use of the machines and in the case of Reachstackers with a lifting capacity of more than 5000g, the operator must be in the possession of a valid Transnet training board certificate for that machine.

11.6 VARIOUS ATTACHMENTS USED FOR LIFTING PURPOSES FITTED TO, OR USED IN CONJUNCTION WITH, MECHANICAL HANDLING VEHICLES, BULLDOZERS OR TRACTORS

11.6.1 All attachments used for lifting purposes fitted to or used in conjunction with mechanical handling vehicles, bulldozers or tractors, must be examined at least once per month by the examiner.

11.6.2 All components and attachments used on mechanical handling vehicles for lifting purposes which are subject to testing in terms of this instruction, e.g. hooks, twist-locks, spreaders, etc., must be removed and tested at the stipulated periods. The results of these tests must be endorsed on the correct and relevant logsheet as required in terms of the section of this instruction, concerned.

11.6.3 Where possible, the safe working load in kilograms, must be stencilled on both sides of an attachment of this type.

11.6.4 All attachments used for lifting purposes fitted to, or used in conjunction with mechanical handling vehicles, bulldozers or tractors, must be individually numbered for identification purposes.

TRANSNET FREIGHT RAIL RME, a division of

TRANSNET SOC LTD

Registration Number 1990/000900/30

[hereinafter referred to as **Transnet]**

REQUEST FOR QUOTATION [RFQ] NO RME JHB 268/2014

FOR THE SUPPLY/PROVISION OF: **YEARLY AND QUARTERLY EXAMINATION AND LOAD TESTING OF LIFTING EQUIPMENT FOR PLANT, MACHINERY AND EQUIPMENT ACCORDING TO TRANSNET'S CODE OF PRACTICE 29**

FOR DELIVERY TO: **VARIOUS SITES**

COMPULSORY BRIEFING SESSION: **ON THE 03/11/2014 AT TRANSNET RME ELANDSFONTEIN**

ISSUE DATE: **29/10/2014**

CLOSING DATE: **06/11/2014**

CLOSING TIME: **12:00**

Section 1
NOTICE TO BIDDERS

Quotations which must be completed as indicated in Section 2 of this RFQ are to be submitted as follows:

METHOD:	Hand delivery / Courier
CLOSING VENUE:	Main Reception Area Transnet Freight Rail RME Cnr Jetpark and Northreef Roads Elandsfontein 1406

1 Responses to RFQ

Responses to this RFQ [**Quotations]** must not include documents of reference relating to any other quotation or proposal. Any additional conditions must be embodied in an accompanying letter.

2 Broad-Based Black Economic Empowerment [B-BBEE]

Transnet fully endorses and supports the Government's Broad-Based Black Economic Empowerment Programme and it would therefore prefer to do business with local business enterprises who share these same values. Transnet will accordingly allow a "preference" to companies who provide a valid B-BBEE Verification Certificate. All procurement transactions will be evaluated accordingly.

2.1 B-BBEE Scorecard and Rating

As prescribed in terms of the Preferential Procurement Policy Framework Act (PPPFA), Act 5 of 2000 and its Regulations, Respondents are to note the following:

- Functionality is included at a pre-qualification stage with a prescribed percentage threshold of **60%**.
- Proposals will be evaluated on price which will be allocated 80 or 90 points and preference which will be allocated 20 or 10 points, dependent on the value of the Services.
- The 90/10 preference point system applies where acquisition of the Services will exceed R1 000 000.00
- If the 90/10 preference point system is stipulated and all Bids received are equal to or below R1 000 000.00, the RFQ will be cancelled.
- In this RFQ, Transnet will apply **90/10** preference point system prescribed in the PPPFA.

In compliance with the Government Gazette No 34612, Notice No. 754 dated 23 September 2011, as from 1 October 2011 valid B-BBEE Verification Certificates must be issued by:

(i) Verification Agencies accredited by the South African National Accreditation System [SANAS]; or

(ii) Registered Auditors approved by the Independent Regulatory Board of Auditors [**IRBA**], in accordance with the approval granted by the Department of Trade and Industry.

Enterprises will be rated by such agencies based on the following:

a) Large Enterprises [i.e. annual turnover greater than R35 million]:

- Rating level based on all seven elements of the B-BBEE scorecard

b) Qualifying Small Enterprises – QSE [i.e. annual turnover between R5 million and R35 million]:

- Rating based on any four of the elements of the B-BBEE scorecard

c) Exempted Micro Enterprises – EME [i.e. annual turnover less than R5 million]:

In accordance with B-BBEE Codes of Good Practice [Statement 000, Section 4], any enterprise with an annual total revenue of R 5 million or less qualifies as an EME.

- Automatic rating of B-BBEE Level 4 irrespective of race or ownership
- Black ownership greater than 50% or Black Women ownership greater than 50% automatically qualify as B-BBEE Level 3

Sufficient evidence to qualify as an EME would be a certificate (which may be in the form of a letter) from an auditor or accounting officer or a certificate from a Verification Agency accredited by SANAS. The certificate must confirm the company's turnover, black ownership / black female ownership, B-BBEE status level and validity date.

Respondents are required to furnish proof of the above to Transnet. [i.e. a valid detailed scorecard as stipulated above in respect of Large Enterprises and QSEs, or a valid certificate in respect of EMEs].

Transnet will accordingly allocate a maximum of **10[ten] points** in accordance with the **90/10** preference point system prescribed in the Preferential Procurement Policy Framework Act (PPPFA), Act 5 of 2000 and its Regulations to the Respondent's final score based on an entity's B-BBEE scorecard rating. *[Refer **Annexure A- B-BBEE Preference Points Claim Form** for further details].*

N.B. Failure to submit a B-BBEE certificate, which is valid as at the Closing Date of this RFP, will result in a score of zero being allocated for B-BBEE.

*[Refer clause**Error! Reference source not found.** below for Returnable Documents required]*

3 Communication

Respondents are warned that a response will be liable for disqualification should any attempt be made by a Respondent either directly or indirectly to canvass any officer(s) or employee of Transnet in respect of this RFQ between the closing date and the date of the award of the business.

A Respondent may, however, before the closing date and time, direct any written enquiries relating to the RFQ to the following Transnet employee:

Name: Thabiso Letlatsa

Email: Thabiso.Letlatsa@transnet.net

Respondents may also, at any time after the closing date of the RFQ, communicate with the Secretariat of the Transnet Acquisition Council on any matter relating to its RFQ response:

Telephone 011 878 7196

Email Tlalane.Mokiba@transnet.net

4 Tax Clearance

The Respondent's original valid Tax Clearance Certificate must accompany the Quotation. Failure to provide this document with the RFQ submission will result in disqualification.

5 VAT Registration

The valid VAT registration number must be stated here: _____ *[if applicable]*.

6 Legal Compliance

The successful Respondent shall be in full and complete compliance with any and all applicable national and local laws and regulations.

7 Changes to Quotations

Changes by the Respondent to its submission will not be considered after the closing date and time.

8 Pricing

All prices must be quoted in South African Rand on a fixed price basis, excluding VAT.

9 Prices Subject to Confirmation

Prices quoted which are subject to confirmation will not be considered.

10 Negotiations

Transnet reserves the right to undertake post-tender negotiations with selected Respondents or any number of shortlisted Respondents.

11 Binding Offer

Any Quotation furnished pursuant to this Request shall be deemed to be an offer. Any exceptions to this statement must be clearly and specifically indicated.

12 Disclaimers

Transnet is not committed to any course of action as a result of its issuance of this RFQ and/or its receipt of a Quotation in response to it. Please note that Transnet reserves the right to:

- modify the RFQ's goods / service(s) and request Respondents to re-bid on any changes;
- reject any Quotation which does not conform to instructions and specifications which are detailed herein;
- disqualify Quotations submitted after the stated submission deadline;
- not necessarily accept the lowest priced Quotation;
- reject all Quotations, if it so decides;
- place an order in connection with this Quotation at any time after the RFQ's closing date;

- award only a portion of the proposed goods / service/s which are reflected in the scope of this RFQ;
- split the award of the order/s between more than one Supplier/Service Provider; or
- make no award at all.

In addition, Transnet reserves the right to exclude any Respondent from the bidding process who has been convicted of a serious breach of law during the preceding 5 [five] years, including but not limited to breaches of the Competition Act 89 of 1998. Respondents are required to indicate below whether or not they have been found guilty of a serious breach of law during the past 5 [five] years:

I/We _____ do hereby certify that *I/we* ***have/have not been*** found guilty during the preceding 5 [five] years of a serious breach of law, including but not limited to a breach of the Competition Act, 89 of 1998, by a court of law, tribunal or other administrative body. The type of breach that the Respondent is required to disclose excludes relatively minor offences or misdemeanours, e.g. traffic offences.

Where found guilty of such a serious breach, please disclose:

NATURE OF BREACH:

_____

_____

DATE OF BREACH: _____

Furthermore, I/we acknowledge that Transnet SOC Ltd reserves the right to exclude any Respondent from the bidding process, should that person or entity have been found guilty of a serious breach of law, tribunal or regulatory obligation.

13 Evaluation Criteria

Transnet will utilise the following criteria [not necessarily in this order] in choosing a Supplier/Service Provider, if so required:

- Administrative responsiveness - Completeness of response and returnable documents
- Substantive responsiveness – Prequalification criteria, if any, must be met and whether the Bid materially complies with the scope and/or specification given
- Technical threshold of 60%: Compliance to specification / quality, previous performance, delivery lead-time
- Weighted evaluation based on 90/10 preference point system as indicated in paragraph 2:
  - Pricing and price basis [firm] - whilst not the sole factor for consideration, competitive pricing and overall level of unconditional discounts[1] will be critical
  - B-BBEE status of company

[1] *Only unconditional discounts will be taken into account during evaluation. A discount which has been offered conditionally will, despite not being taken into account for evaluation purposes, be implemented when payment is effected.*

Preference points will be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

14 Validity Period

Transnet desires a validity period of 90 [thirty] days from the closing date of this RFQ.

This RFQ is valid until _____.

15 Banking Details

BANK: _____

BRANCH NAME / CODE: _____

ACCOUNT HOLDER: _____

ACCOUNT NUMBER: _____

16 Company Registration

Registration number of company / C.C. _____

Registered name of company / C.C. _____

17 Disclosure of Prices Quoted

Respondents must indicate here whether Transnet may disclose their quoted prices and conditions to other Respondents:

YES ☐ NO ☐

18 Returnable Documents

Returnable Documents means all the documents, Sections and Annexures, as listed in the tables below.

a) Respondents are required to submit with their Quotations the **mandatory Returnable Documents**, as detailed below.

Failure to provide all these Returnable Documents at the Closing Date and time of this RFQ will result in a Respondent's disqualification. Respondents are therefore urged to ensure that all these Documents are returned with their Quotations.

All Sections, as indicated in the footer of each page, must be signed, stamped and dated by the Respondent. Please confirm submission of these mandatory Returnable Documents by so indicating [Yes or No] in the table below:

b) In addition to the requirements of section (a) above, Respondents are further required to submit with their Quotations the following **essential Returnable Documents** as detailed below.

Failure to provide all these Returnable Documents may result in a Respondent's disqualification. Respondents are therefore urged to ensure that all these documents are returned with their Quotations.

All Sections, as indicated in the footer of each page, must be signed, stamped and dated by the Respondent. Please confirm submission of these essential Returnable Documents by so indicating [Yes or No] in the table below:

Returnable Documents	Submitted [Yes or No]
SECTION 1 : Notice to Bidders	
- Valid B-BBEE Verification Certificate [RSA Large Enterprises and QSEs] Note: failure to provide a valid B-BBEE Verification Certificate at the closing date and time of the tender will result in an automatic score of zero being allocated for B-BBEE scorecard	
- Valid B-BBEE certificate from auditor accounting officer or SANAS accredited Verification Agency [RSA EMEs] Note: failure to provide a valid B-BBEE Verification Certificate at the closing date and time of the tender will result in an automatic score of zero being allocated for B-BBEE scorecard	
- In the case of Joint Ventures, a copy of the Joint Venture Agreement or written confirmation of the intention to enter into a Joint Venture Agreement	
- SECTION 3 : Standard Terms and Conditions of Contract for the Supply of Services to Transnet	
SECTION 4 : Vendor Application Form	
- Original cancelled cheque or bank verification of banking details	
- Certified copies of IDs of shareholder/directors/members [as applicable]	
- Certified copy of Certificate of Incorporation [CM29/CM9 name change]	
- Certified copy of share certificates [CK1/CK2 if C.C.]	
- Entity's letterhead	
- Certified copy of VAT Registration Certificate [RSA entities only]	
- Certified copy of valid Company Registration Certificate [if applicable]	
- A signed letter from Respondent's auditor or accountant confirming most recent annual turnover figures	
- ANNEXURE ..... : Technical Submission/Questionnaire	
- MANDATORY (Must have to pass technical criteria) - Proof of letter of good standing with compensation commissioner	

Returnable Documents	Submitted [Yes or No]
- Proof of LME Registration with DoL - Proof of COP 29 Registration with Transnet Group Risk (Yes = 60%, No = 0%)	
- Risk assessment including a safe working procedure (Yes = 20%, No = 0%)	
- Proof that test equipment is calibrated and fit for use (Yes = 20%, No = 0%)	

Section 2

QUOTATION FORM

I/We_____

hereby offer to supply the goods/services at the prices quoted in the Price Schedule below, in accordance with the conditions related thereto.

I/We agree to be bound by those terms and conditions in:

- the Standard Terms and Conditions for the Supply of Goods or Services to Transnet [Section 3 hereof]; and
- any other standard or special conditions mentioned and/or embodied in this Request for Quotation.

I/We accept that unless Transnet should otherwise decide and so inform me/us, this Quotation [and, if any, its covering letter and any subsequent exchange of correspondence], together with Transnet's acceptance thereof shall constitute a binding contract between Transnet and me/us.

I/We further agree that if, after I/we have been notified of the acceptance of my/our Quotation, I/we fail to deliver the said goods/service/s within the delivery lead-time quoted, Transnet may, without prejudice to any other legal remedy which it may have, cancel the order and recover from me/us any expenses incurred by Transnet in calling for Quotations afresh and/or having to accept any less favourable offer.

Price Schedule

I/We quote as follows for the goods required, on a "delivered nominated destination" basis, excluding VAT:

Item No	Description of Goods /Services	Unit of Measure	Quantity	Unit Price (ZAR)	Total Price (ZAR)
1	Code 29 Inspection – Yearly and Quarterly Examination and Load Testing of Lifting Equipment for Plant, Machinery and Equipment according to Transnet's Code of Practice 29 and as per the attached Bill of Quantities and Specification. Delivery address: Various sites Contact person: Clapton Pillay at 083 687 4378	Sum	1		

Delivery Lead-Time from date of purchase order: _____ [days/weeks]

Notes to Pricing:

a) All Prices must be quoted in South African Rand, exclusive of VAT

b) To facilitate like-for-like comparison bidders must submit pricing strictly in accordance with this price schedule and not utilise a different format. Deviation from this pricing schedule could result in a bid being disqualified.

c) Please note that should you have offered a discounted price(s), Transnet will only consider such price discount(s) in the final evaluation stage if offered on an unconditional basis.

Section 3

STANDARD TERMS AND CONDITIONS FOR THE SUPPLY OF GOODS OR SERVICES TO TRANSNET

A Supplier/Service Provider shall be obliged to adhere to the Standard Terms and Conditions for the Supply of Goods and Services to Transnet as expressed hereunder. Should the Respondent find any condition(s) unacceptable, it should indicate which condition(s) is/are unacceptable and offer an alternative(s). A Quotation submitted by a Respondent will be subjected to review and acceptance or rejection of its proposed contractual terms and conditions by Transnet's Legal Counsel, prior to consideration for an award of business.

1 SOLE AGREEMENT

Unless otherwise agreed in writing, these terms [**Terms** and each **Term**] and Transnet's purchase order(s) [**Order** or **Orders]** represent the only conditions upon which Transnet SOC Ltd [**Transnet**] procures goods [**the Goods**] or services [**the Services**] specified in the Order from the person to whom the Order is addressed [**the Supplier/Service Provider**]. Transnet does not accept any other conditions which the Supplier/Service Provider may specify, unless otherwise agreed to by Transnet in writing. In the event of any inconsistency between these Terms and any Order, these Terms shall take precedence.

2 CONFORMITY WITH ORDER

Goods/Services shall conform strictly with the Order. The Supplier/Service Provider shall not vary the quantities specified and/or the specification, if any, stipulated in the Order, without the prior written consent of Transnet. The Supplier/Service Provider warrants that the Goods/Services shall be fit for their purpose and of satisfactory quality.

3 DELIVERY AND TITLE

3.1 The delivery dates and addresses are those in the Order. Time shall be of the essence in respect of the Supplier's/Service Provider's obligations under the Order.

3.2 The Supplier/Service Provider will not be excused for delay in delivery or performance except due to circumstances outside its control and then only subject to the Supplier/Service Provider having notified Transnet in writing on becoming aware of such circumstances. Transnet may terminate an Order, in whole or in part, without incurring any liability to the Supplier/Service Provider if such a delay becomes, in Transnet's absolute opinion, significant.

3.3 If on delivery, the Goods/Services do not conform to the Order, Transnet may reject the Goods/Services and the Supplier/Service Provider shall promptly rectify any defects or in Transnet's opinion, supply appropriate replacement Goods/Services at the Supplier's/Service Provider's expense within the specified delivery times, without any liability due by Transnet.

4 PRICE AND PAYMENT

4.1 Prices specified in an Order cannot be increased. Payment for the Goods/Services shall be made by Transnet against an original undisputed invoice(s) [a Tax Invoice], supporting documentation and month-end statement from the Supplier/Service Provider. Tax Invoices plus supporting documentation shall be posted to the address shown in the Order.

4.2 Payment of the Supplier's/Service Provider's valid Tax Invoice(s) will be made by Transnet in the South African currency and on the terms stated in the Order, the standard payment terms being 30 [thirty] days from date of receipt by Transnet of a month-end statement, unless otherwise agreed to in writing. Transnet shall arrange for payment of such Tax Invoices and any pre-authorised additional expenses incurred, provided that the authorised expenses are supported by acceptable documentary proof of expenditure incurred [where this is available]. Any amounts due in terms of these Terms shall be paid to the Supplier/Service Provider, taking into account any deduction or set-off and bank charges.

5 PROPRIETARY RIGHTS LIABILITY

If any allegations should be made or any claim asserted against Transnet that ownership of, or any act or omission by Transnet in relation to Goods/Services or any written material provided to Transnet relating to any Goods/Services or pursuant to an Order being a violation or infringement of any third party's contractual, industrial, commercial or intellectual property rights including but not limited to any patent, registered design, design right, trade mark, copyright or service mark or any application thereof, the Supplier/Service Provider hereby indemnifies Transnet against and holds it harmless from any and all losses, liabilities, costs, claims, damages and expenses [including any legal fees] arising directly or indirectly from such allegation or claim provided that this indemnity shall not apply where the allegation or claim arises solely as a result of the Supplier/Service Provider following a design or process originated and furnished by Transnet. The Supplier/Service Provider shall either:

a) procure for Transnet the right to continue using the infringing Goods; or

b) modify or replace the Goods/Services so that they become non-infringing,

provided that in both cases the Goods/Services shall continue to meet Transnet's requirements and any specifications stipulated in the Order. Should neither option be possible, the Supplier/Service Provider may remove, with Transnet's prior written consent, such Goods/Services and will pay to Transnet a sum equivalent to the purchase price. If Transnet refuses to give such consent, the Supplier/Service Provider shall have no liability in respect of any continued use of the infringing Goods/Services after Supplier's/Service Provider's prior written request to remove the same.

6 PROPRIETARY INFORMATION

All information which Transnet has divulged or may divulge to the Supplier/Service Provider and any information relating to Transnet's business which may have come into the Supplier's/Service Provider's possession whilst carrying out an Order, and the existence of the Order, shall be treated by the Supplier/Service Provider as confidential information and shall not, without Transnet's prior written consent, be disclosed to any third party, or be used or copied for any purposes other than to perform the Order. This clause does not apply to information which is public knowledge or available from other sources other than by breach of this Term. Upon request by Transnet, the Supplier/Service Provider shall return all materials issued pursuant to the Order and, pending this, shall protect Transnet's rights in any such materials. Such confidential information shall at all material times be the property of Transnet.

7 PUBLICITY

The Supplier/Service Provider shall not name Transnet or use its trademarks, service marks [whether registered or not] or Goods in connection with any publicity without Transnet's prior written consent.

8 TERMINATION OF ORDER

8.1 Transnet may cancel an Order in whole or in part at any time upon at least 7 [seven] days' written notice to the Supplier/Service Provider, or when there is a change in control of the Supplier/Service Provider or the Supplier/Service Provider commits any serious breach or any repeated or continued material breach of its obligations under these Terms and/or Order or shall have been guilty of conduct tending to bring itself into disrepute, on written notice to the Supplier/Service Provider when such work on the Order shall stop.

8.2 Transnet shall pay the Supplier/Service Provider a fair and reasonable price for justified work in progress, where such price reflects only those costs not otherwise recoverable by the Supplier/Service Provider, at the time of termination, and the Supplier/Service Provider shall give Transnet full assistance to check the extent of such work in progress. Payment of such price shall be in full and final satisfaction of any claims arising out of such termination and upon such payment the Supplier/Service Provider shall deliver to Transnet all work, including any materials, completed or in progress. The sum payable to the Supplier/Service Provider under this clause will not in any event exceed the total amount that would have been payable to the Supplier/Service Provider had the Order not been terminated.

8.3 In the event of termination the Supplier/Service Provider must submit all claims within 2 [two] months of termination after which time claims will only be met in what Transnet considers exceptional circumstances.

8.4 If the Goods or Services are not provided in accordance with an Order, the Order shall be deemed terminated and the Supplier/Service Provider shall compensate Transnet for any costs incurred in obtaining substitute Goods or any damage caused due to the failure or delay in the delivery.

9 ACCESS

The Supplier/Service Provider shall be liable for the acts, omissions and defaults of its personnel or agents who, for the purposes of the Order, shall be treated as if they are the Supplier's/Service Provider's employees. The Supplier/Service Provider shall ensure that any such personnel or agents, whilst on Transnet's premises, shall comply with Transnet's health and safety, security and system security rules and procedures as and where required.

10 WARRANTY

The Supplier/Service Provider warrants that it is competent to supply the Goods/Services in accordance with these Terms to the reasonable satisfaction of Transnet and that all Goods/Services delivered under the Order: (a) conform and comply in all relevant legislation, standards, directives and orders related to *[inter alia]* the Goods/Services in force at the time of delivery, and to any specifications referred to in the Order; (b) will not cause any deterioration in the functionality of any Transnet equipment; and (c) do not infringe any third party rights of any kind. The Supplier/Service Provider hereby indemnifies Transnet against all losses, liabilities, costs, claims, damages, expenses and awards of any kinds incurred or made against Transnet in connection with any breach of this warranty.

11 INSOLVENCY

If the Supplier/Service Provider shall have a receiver, manager, administrator, liquidator or like person appointed over all or any part of its assets or if the Supplier/Service Provider compounds with its creditors or passes a resolution for the writing up or administration of the Supplier/Service Provider, Transnet is at liberty to terminate the Order or Orders forthwith, or at its option, to seek performance by any such appointed person.

12 ASSIGNMENT

The Supplier/Service Provider shall not assign its obligations under an Order without Transnet's prior written consent, which consent shall not be unreasonably withheld or delayed.

13 NOTICES

Notices under these Terms shall be delivered by hand to the relevant addresses of the parties in the Order or may be served by facsimile or by email, in which event notice shall be deemed served on acknowledgement of receipt by the recipient.

14 LAW

Orders shall be governed by and interpreted in accordance with South African law and any disputes arising herein shall be subject to South African arbitration under the rules of the Arbitration Foundation of South Africa, which rules are deemed incorporated by reference in this clause. The reference to arbitration shall not prevent Transnet referring the matter to any South African courts, having jurisdiction, to which the Supplier/Service Provider hereby irrevocably submits but without prejudice to Transnet's right to take proceedings against the Supplier/Service Provider in other jurisdictions and/or obtaining interim relief on an urgent basis from a court of competent jurisdiction pending the decision in other courts or from instituting in any court of competent jurisdiction any proceedings for an interdict or any other injunctive relief. If the Supplier/Service Provider does not have a registered office in the South Africa it will at all times maintain an agent for service of process in South Africa and shall give Transnet the name and address of such agent as such may be amended, in writing, from time to time.

15 GENERAL

Completion or termination of an Order shall be without prejudice to any Term herein which by its nature would be deemed to continue after completion or termination, including but not limited to clauses **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.**, **Error! Reference source not found.** and **Error! Reference source not found.**. Headings are included herein for convenience only. If any Term herein be held illegal or unenforceable, the validity or enforceability of the remaining Terms shall not be affected. No failure or delay by Transnet to enforce any rights under these Terms will operate as a waiver thereof by Transnet. All rights and remedies available to either party under these Terms shall be in addition to, not to the exclusion of, rights otherwise available at law.

16 COUNTERPARTS

These Terms and conditions may be signed in any number of counterparts, all of which taken together shall constitute one and the same instrument. Any party may enter into this agreement by signing any such counterpart.

By signing this RFQ document, the Respondent is deemed to acknowledge that he/she has made himself/herself thoroughly familiar with all the conditions governing this RFQ, including those contained in any printed form stated to form part hereof and Transnet SOC Ltd will recognise no claim for relief based on an allegation that the Respondent overlooked any such condition or failed to properly take it into account for the purpose of calculating quoted prices or otherwise.

SIGNED at _____ on this _____ day of _____ 20___

.....

SIGNATURE OF RESPONDENT'S AUTHORISED REPRESENTATIVE

NAME: _____

DESIGNATION: _____

REGISTERED NAME OF COMPANY: _____

PHYSICAL ADDRESS:

_____

_____

Respondent's contact person *[Please complete]*

Name	:
Designation	:
Telephone	:
Cell Phone	:
Facsimile	:
Email	:
Website	:

Transnet urges its clients, suppliers and the general public
to report any fraud or corruption to
TIP-OFFS ANONYMOUS : 0800 003 056

Section 4
VENDOR APPLICATION FORM

Respondents are to furnish the following documentation and complete the Vendor Application Form below:

1. **Original** cancelled cheque **OR** letter from the Respondent's bank verifying banking details [**with bank stamp]**
2. **Certified** copy of Identity Document(s) of Shareholders/Directors/Members [where applicable]
3. **Certified** copy of Certificate of Incorporation, CM29 / CM9 [name change]
4. **Certified** copy of Share Certificates [CK1/CK2 if CC]
5. A letter on the company's letterhead confirm physical and postal addresses
6. **Original** valid SARS Tax Clearance Certificate
7. **Certified copy** of VAT Registration Certificate
8. **Certified copy** of valid Company Registration Certificate [if applicable]
9. A signed letter from your auditor or accountant confirming most recent annual turnover figures

Vendor Application Form

Company trading name						
Company registered name						
Company Registration Number or ID Number if a Sole Proprietor						
Form of entity [√]	CC	Trust	Pty Ltd	Limited	Partnership	Sole Proprietor
VAT number [if registered]						
Company telephone number						
Company fax number						
Company email address						
Company website address						
Bank name			Branch & Branch code			
Account holder			Bank account number			
Postal address						
			Code			
Physical Address						

Respondent's Signature

Date & Company Stamp

		Code	
Contact person			
Designation			
Telephone			
Email			

Annual turnover range [last financial year]	< R5 m		R5 - 35 m		> R35 m	
Does your company provide	Products		Services		Both	
Area of delivery	National		Provincial		Local	
Is your company a public or private entity			Public		Private	
Does your company have a Tax Directive or IRP30 Certificate			Yes		No	
Main product or services [e.g. Stationery/Consulting]						

Complete B-BBEE Ownership Details:

% Black ownership		% Black women ownership		% Disabled Black ownership		
Does your company have a B-BBEE certificate		Yes		No		
What is your B-BBEE status [Level 1 to 9 / Unknown]						
How many personnel does the firm employ		Permanent		Part time		

If you are an existing Vendor with Transnet please complete the following:

Transnet contact person	
Contact number	
Transnet Operating Division	

Duly authorised to sign for and on behalf of Company / Organisation:

Name		Designation	
Signature		Date	

TRANSNET

Delivering freight reliably

TRANSNET FREIGHT RAIL (RME)

SPECIFICATION

Quarterly Examination, Load Testing & Certification of Lifting Equipment According to Code Of Practice 29 for Plant, Machinery & Equipment at the Track Engineering Works - Karoo Segment

Compiled by

TRANSNET RME
TRACK ENGINEERING WORKS

22/09/2014

Table of Contents

1. Scope of the document

This specification covers the examination and load testing, (if necessary) of various lifting equipment, for plant and machinery, on the Karoo Segment depots and sub depots ,by a suitably qualified **Registered Lifting Machinery Inspector** and/or **Registered Code Of Practice 29 Examiner** . The work must be done according to the **Driven Machinery Regulations of the Occupational Health and Safety Act (85 of 1993)** as well as the rules and regulations of Transnet's **Code of Practice 29 (COP 29)**

2. Nature of work

2.1 Examination and Load Testing

The Examiner must inspect all plant and equipment, for any type of latent defects, which may affect the safe operation of the equipment. The examiner must load test all plant and equipment **and supply a valid Code of Practice 29 certificate** for each item. He/she must also ensure that all provisions of regulations promulgated, to ensure the safety of machinery plant and equipment are met.

2.2 Truck Mounted Cranes

Truck mounted cranes must be examined as per the following:
Note: The following are minimum requirements:

(a) Check mounting bolts for tightness ,damage or missing
(b) Check general condition of structure.
(c) Check for leaks on pipes and pump supply tank.
(d) Check outrigger cylinder rams for damage.
(e) Check locking pin plates to ensure secure.
(f) Check hydraulic tank for leaks to ensure secure.
(g) Check pressure relief valve seals.
(h) Check control levers for damage, plus light lubrication of pins, to ensure smooth operation.

Yearly load/performance test, 110 % above safe working load, must not be carried out to any truck mounted cranes. Authority may only be granted by the Senior Contract Manager.

2.3 Documentation

The findings of each item examined, must be entered on the **Log sheets No 9, 10 or 66**, applicable to the item that has been examined. The date the examination is carried out and the Inspector's signature must be recorded on the Log sheets.
Note – Where no deficiencies or defects are apparent the log sheets must be endorsed, "in good order". The use of ditto or similar inscription marks on log sheets is not permitted.

2.4 Filing

The contractor and Supervisor must ensure that log sheets are kept in good order and arrange for replacement or repair of any torn or damaged log sheet when log sheets are replaced the torn or full log sheets must be filed in "Equipment File"

2.5 List of Equipment

The Examiner will be supplied, with a complete list of items that require inspection. This list must be updated after every inspection, regarding new, withdrawn or transferred equipment, and must be kept updated.

2.6 Stop Certificate

Examiners must ensure that machinery, plant and equipment, which they consider unsafe, is not used. **A STOP CERTIFICATE** form **A-10** must be issued to the User. The User is to be advised, that the equipment must not be used, until repairs are carried out. The Examiner endorses the **STOP CERTIFICATE** once the item is fit for use.

3. Registration of Examiner/Inspector

A copy of the registration, for the Lifting Machinery Inspector, with the Engineering Council of South Africa, and all competent personnel, according to the **Driven Machinery Regulations** of the **Occupational Health and Safety Act** ,to be forwarded with the tender application. (Certified copies of any application in order to register with ECSA as a LMI, to be provided. Should registration, not yet been approved). The Registration Certificate, as a Lifting Machinery Entity must also be provided, and attached to this document. A certified copy of the individual's certificate and attached covering letter from ECSA stating clearly what their "Scope of Work" is, must also be kept on the relevant equipment file, for the equipment being tested / examined. No one can do the work on their behalf.

4. Subcontracting

No work is to be subcontracted. All work must be done by the company submitting the tender. If any work required is subcontracted, Transnet will cancel the order with immediate effect

5. Completion of work

The work is to be completed within the time frame, allocated on the purchase order.

6. Priority of work

The Contractor may be required to commence work within 21 days of notification of acceptance of purchase order, failure to do this; can lead to the order being cancelled by Transnet.

7. Initiation of work

The contractor can only commence work once he/she has obtained a Site Instruction signed by the Service Manager (Mr C.Pillay). The contractor must supply the client with a central contact person that will receive the Site Instruction. Work must commence within 14 days from the date the instruction is signed. The site instruction template is shown in Annexure 1

8. Access to & Location of Sites

The contractor shall satisfy him/her self fully as to the nature and extent of the site and works, during the site inspection. Access to the site may only be allowed, by means of established maintenance roads.

The equipment, plant and machinery to be examined/ tested are mostly located in the following districts; however location of sites will not be limited to this list.

1. Bethlehem
2. Bloemfontein
3. Bloemhof
4. Coligny
5. De Aar
6. Elandsfontein

7. Germiston
8. Heidelberg
9. Kimberly
10. Klerksdorp
11. Kroonstad
12. Krugersdorp (Millsite)
13. Leeuhof
14. Lichtenburg
15. Natalspruit
16. Newcastle
17. Potchefstroom
18. Postmasburg
19. Sannieshof
20. Standerton
21. Upington
22. Vereeniging
23. Volksrust
24. Zeerust

9. Site Access Certificate

Before the contractor may commence with the contract, he must inform the Contract Manager of the intended commencement date. On the intended day, a Site Access Certificate will be handed to him. A Safety Awareness Briefing session & Safety Induction will also be held with his/her employees.

10. Schedule of Quantities

All rates to submitted in **black ink,** in the schedule list

11. Condition of Service

No tender will be considered unless the contractor certifies that he/she has acquainted him/herself with all the relevant documentation and attended the site inspection.

12. Senior Contracts Manager

For the purpose of this service, the "Senior Contract Manager" shall be responsible, or any persons lawfully acting in that capacity. Only instructions, issued by him to the contractor are allowed.

13. Indemnities & Insurance

13.1 Transnet will affect no insurance of the Works. The contractor must arrange insurance to cover the contact in the event of a claim.

13.2 The contractor shall take every precaution not to cause damage to property or injury to any person as a result of his execution of the work.

13.3 In the case where a risk of legal liability for accidental death of or injury to third persons and or accidental loss of, or damage to third party property may arise out of the contract work, the contractor must arrange for such public liability insurance.

13.4 The Contractor shall insure against loss of or damage to his/her own machinery, tools, equipment, materials and site establishment, and any consequential financial losses arising from such damage. This insurance is to be maintained in force during the entire period of the contract. The Contractor shall likewise arrange his/her own insurance in respect of motor vehicle liabilities, and employer's common law liabilities of the Contractor.

14. Safety on Site

14.1 Transnet will not be held responsible for any losses, damage or injury to workmen while working on Transnet property.

14.2 The Contractor shall comply with the provisions of the Occupational Health and Safety Act (Act 85 of 1993). For the purpose of this Act, the site/s occupied by the Contractor is transferred, for the duration of the contract, to the control of the Contractor, as if it is his/her property. As employer, he/she is in every respect responsible for compliance with the provisions of this Act.

14.3 The contractor shall, in particular, comply with the Compensation for Occupational Injuries and Diseases Act (Act 130 of 1993). The contractor shall produce proof of his/her registration and good standing with the Compensation Commissioner of the act. This proof shall be submitted with the return of these documents during the tender stage.

14.4 The E7/1 (July 1998) Specification for Works On, Over, Under or Adjacent to Railway lines and near High Voltage Equipment, shall form an integral part of this contract

14.5 The contractor must at all times ensure that employees, working near to the railway tracks, utilize reflective clothing. It is also recommended that a competent person is appointed who will keep all the contractors employees aware of train movements. It is also recommended that he use a warning device, e.g. a siren or a whistle etc. The employees must be made aware of the fact that the railway tracks are multi-directional.

14.6 Before the successful contractor can commence with this contract, a Safety Awareness Briefing and Induction session will be held with him/her and all employees, who will be working on this contract. On the completion of the information session, the contractor will be asked to sign a document indicating, his understanding of the dangers working next to the railway track and overhead traction lines. Refusal to sign this document can cause the contract to be cancelled by Transnet Freight Rail (RME).

15. Site Books

15.1 Site Instruction book

The successful contractor shall make available a Triplicate carbon copy A4 sized book or shall have numbered sheets for receiving and recording instructions from the Senior Contract Manager, and shall be clearly marked "Site Instruction Book". This book must be kept on site with the examiner at all times. It is an invaluable tool in dealing with disputes, uncertainties, extensions of time and any variation order. It is to be used as a two-way communication between contractor and Transnet. Any verbal instructions must be confirmed in writing in the Site Instruction Book. On completion of the contract, the book will become the property of Transnet.

15.2 Site Diary

It is recommended that the successful contractor keep a daily record of all relevant information concerning site conditions and all incidents, weather conditions, injuries etc. This is for his/her sole use and remains his/her property.

15.3 Authorised Persons

Only persons authorised by the Senior Contract Manager or Contractor shall make entries in the site dairy.

16. Incompetent Employees

Any person employed by the Contractor on the works, who is in the opinion of the Senior Contract Manager be incompetent, or who may act in any improper manner, may be discharged from the Works by SCM. Such a person shall not again be employed on the Works, without the permission of the SCM..

17. Hours of Duty

Work can only be carried out during the daylight hours of the week commencing at 07:00 am and ending at 16:00 pm. When the contractor intends performing work on a weekend or a public holiday, the Senior Contract Manager or his designated representative must be notified well in advance. The area where work will be performed must also be conveyed to him. A Transnet representative shall be present during this time.

18. Accommodation

No employee of the Contractor may be allowed to sleep on Transnet Property, after normal working hours. The contractor must arrange their own accommodation.

19. Payment

The delivery invoice must be sent together with the site instruction to the Service Manager to process for payment. The invoice must be signed by the relevant Site Agent prior to being sent to the Service Manager

20. Value Added Tax

VAT at the ruling percentage shall be paid separately on an add-on basis on the value of work paid should Contractor be registered. Attach certificate to documentation.

Annexure A (Mandatory) - COP 29 Testing and Examining						
Respondents are to complete this Annexure A, giving sufficient detail to permit an accurate assessment of your technical abilities.						
Inability to provide these essential requirements will preclude your company's eligibility at Stage One of the evaluation process						
Technical Requirements						
Ref	**Criteria**	**Requirement**	**Returnable document**	**Yes /No**	**If Yes please provide information with ref.**	***Max Point***
1	**a)Letter of Good Standing** **b) LME Resistration** **c) COP 29 Registration**	MANDATORY RETURNABLE DOCUMENTS TO PROCEED TO TECHNICAL EVALUATION POINTS 2 & 3 a) Submit Proof letter of Good Standing with Compensation Commissioner b) Submit Proof of LME Registration with Department of Labour c) Submit Proof of Valid COP 29 Registration with Transnet Group Risk	*			*60*
2	**RiskAssesment & Safe Working Procedure**	Submit Risk Assesment and Safe Working Procedure that will be followed for Testing and Examining	*			*20*
3	**Calibrated Equipment**	Submit Valid Calibration Certificates for Testing Equipment	*			*20*
						100
					Threshold	**60%**

BoQ COP 29 TESTING & EXAMINING

Item No	Description of Item to be Tested	Test Required	Total Quantity	Est Rate	Unit	Estimated Amount
1	Crane Hooks 1-12 ton with Hi Ups	Yearly Load Tests	120	R 900.00	Each	R 108 000.00
2	Crane Hooks 1-12 ton with Hi Ups	Quarterly Examination	480	R 300.00	Each	R 144 000.00
3	Hydraulic Truck Cranes	Quarterly Examination	480	R 300.00	Each	R 144 000.00
4	Rail lifting beams and attachments (Standard & 1.4m)	Yearly Load Tests	76	R 900.00	Each	R 68 400.00
5	Rail lifting beams and attachments (Standard & 1.4m)	Quarterly Examination	300	R 300.00	Each	R 90 000.00
6	Sleeper Lifting beams and attachments	Yearly Load Tests	70	R 900.00	Each	R 63 000.00
7	Sleeper Lifting beams and attachments	Quarterly Examination	280	R 300.00	Each	R 84 000.00
8	Chain Slings	Yearly Load Tests	36	R 900.00	Each	R 32 400.00
9	Chain Slings	Quarterly Examination	144	R 300.00	Each	R 43 200.00
10	Webbing Slings and Endless Slings	Quarterly Examination	94	R 300.00	Each	R 28 200.00
11	Rail offloading equipment (Anaconda and attachments)	Quarterly Examination	80	R 300.00	Each	R 24 000.00
12	Chain Blocks	Yearly Load Tests	24	R 900.00	Each	R 21 600.00
13	Chain Blocks	Quarterly Examination	96	R 300.00	Each	R 28 800.00
14	Donkey Rail lifting clamps and shackles	Yearly Load Tests	100	R 900.00	Each	R 90 000.00
15	Donkey Rail lifting clamps and shackles	Quarterly Examination	396	R 300.00	Each	R 118 800.00
16	Rail Trolleys	Yearly Load Tests	48	R 900.00	Each	R 43 200.00
17	Rail Trolleys	Quarterly Examination	190	R 300.00	Each	R 57 000.00
18	Bolster train gantries and crawl	Yearly Load Tests	20	R 900.00	Each	R 18 000.00
19	Bolster train gantries and crawl	Quarterly Examination	80	R 300.00	Each	R 24 000.00
20	Safety Harness	Quarterly Examination	256	R 300.00	Each	R 76 800.00
21	HGR pre lifting machine	Quarterly Examination	24	R 300.00	Each	R 7 200.00
22	Accomodation Costs all personell		320	R 900.00	Night	R 288 000.00
23	Travelling Costs		70000	R 4.80	km	R 336 000.00
	TOTAL					R 1 938 600.00

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ANNEXURE 1

SITE INSTRUCTION			
PURCHASE ORDER NO		12345678910	
TO COMPANY	*Contractor*	EMAIL	*email address of contractor representative*
CONTACT PERSON	*Contractor Representative*	CONTACT DETAILS	*cell number / landline of representative*
DATE	*Date instruction is sent out*	INSTRUCTION NO	*Instruction Number for Tracking Purposes*

Service Manager		Cell		Email	
Location of Work					
Contact Person on Site		Cell		Email	

Description of Work Required

Item No	Description	Qty	Rate	Total
			Subtotal excl Vat	

Service Manager (TFR –RME)

_____ **DATE:** _____

C.Pillay

Note: Signed Site instruction & Invoice must be forwarded to Service Manager for payment