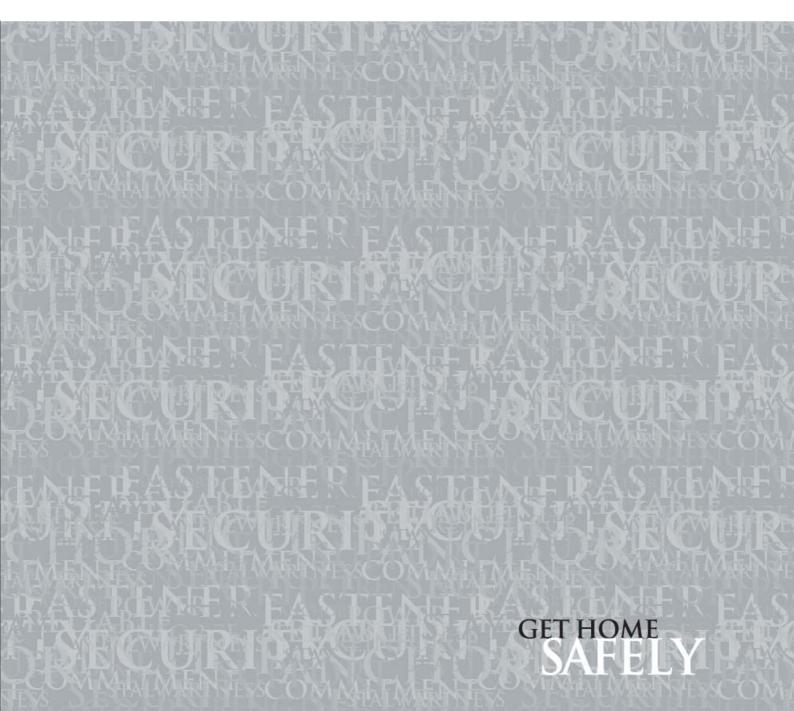


# **TRAINING MANUAL**

TRAM<sub>™</sub> Safety System Operators Course





#### TRAM TRAINING

- The aim of the Total Restraint Module (TRAM) Training Management Package (TMP) is to train personnel in the safe operation of the TRAM system.
- 2. The training package is designed to bring operators up to an appropriate level of competency in order for them to conduct their normal activities in accordance with relevant safety requirements. This training is mandatory before any operator can safely operate the TRAM Safety System.
- 3. The TRAM TMP contains Training Objectives of the following competencies and Learning Outcomes:

1.1	Develop a concept understanding of the TRAM Safety System
1.1.1	Develop a concept understanding of the TRAM Safety System
1.2	Employ the TRAM Safety Harness
1.2.1	Perform visual safety inspection of the TRAM Safety Harness
1.2.2	Correctly fit and wear the TRAM Safety Harness
1.2.3	Perform operational requirements while wearing the TRAM Safety Harness
1.3	Employ the TRAM Safety System
1.3.1	Identify prominent safety points on the TRAM Safety System
1.3.2	Perform visual inspection of the TRAM Safety System mounted on top of a vehicle
1.3.3	Apply the TRAM Safety System with the TRAM Safety Harness
1.3.4	Operate the TRAM Safety System
1.4	Conduct maintenance on the TRAM Safety System
1.4.1	State TRAM maintenance requirements
1.4.2	Conduct TRAM maintenance

- 4. TRAM training can be conducted on an individual basis or as a group learning experience. Additionally, the training package can be coordinated as part of an individual Standfast package or provided to trainers within organizations in order to allow them train operators using the full TRAM Safety System package. The following annexes are contained in the package:
  - a. Logic Diagram;

- b. Operator Assessment Record;
- c. Record of Attainment;
- d. Training Objectives; and
- f. Assessment Package.
- 5. On the completion of training, an individual's assessment records should be kept on their personal file by their parent company.

### OPERATOR ASSESSMENT LOG (TO BE COMPLETED ON ALL OPERATORS USING THE TRAM SAFETY SYSTEM)

COMPETENCY	С	NYC	NC	N/A	COMMENT
1.1 Develop a concept understanding of the TRAM Safety System					
1.1.1 Develop a concept understanding of the TRAM Safety System					
1.2 Employ the TRAM Safety Harness					
1.2.1 Perform visual safety inspection of the TRAM Safety Harness					
1.2.2 Correctly fit and wear the TRAM Safety Harness					
1.2.3 Perform operational requirements while wearing the Tram Safety Harness					
1.3 Employ the TRAM Safety System					
1.3.1 Identify prominent safety points on the TRAM Safety System					
1.3.2 Perform visual inspection of the TRAM Safety System mounted on top of a vehicle					
1.3.3 Apply the Safety System with the TRAM Safety Harness					
1.3.4 Operate the TRAM Safety System					
1.4 Conduct Maintenance on the TRAM Safety System					
1.4.1 State the TRAM Maintenance requirements					
1.4.2 Conduct TRAM Maintenance					

#### Legend:



**Participant** 



Certificate No.

### TOTAL RESTRAINT ACCESS MODULE

# CERTIFICATE OF ATTENDANCE TRAM™ OPERATORS COURSE

company:	•	
Certifying A	Authority:	<insert details="" office="" standfast=""></insert>
Signature:		Date:
	<insert bloc<="" signature="" td=""><td>GET HOME SAFELY</td></insert>	GET HOME SAFELY

### TRAINING OBJECTIVES

## CONTENTS OPERATE THE TRAM SAFETY SYSTEM

Code	Lesson Title	Periods / Time Required
	1.1 Develop a concept understanding of the TRAM Safety System	
TRAM 1	1.1.1 Develop a concept understanding of the TRAM Safety System	10 Minutes
	1.2 Employ the TRAM Safety Harness	
TRAM 2	1.2.1 Perform a visual safety inspection on the TRAM Safety Harness	15 minutes
TRAM 3	1.2.2 Correctly fit and wear the TRAM Safety Harness	15 minutes
TRAM 4	1.2.3 Perform Operational requirements while wearing the TRAM Safety Harness	10 minutes
	1.3 Employ the TRAM Safety System	
TRAM 5	1.3.1 Identify prominent safety points on the TRAM Safety System	10 minutes
TRAM 6	1.3.2 Perform a visual inspection of the TRAM Safety     System mounted on top of a vehicle	10 minutes
TRAM 7	1.3.3 Apply the TRAM Safety System with the TRAM Safety Harness	10 minutes
TRAM 8	1.3.4 Operate the TRAM Safety System	15 minutes
	1.4 Conduct Maintenance on the TRAM Safety System	
TRAM 9	1.4.1 State the TRAM Maintenance Requirements	10 minutes
TRAM 10	1.4.2 Conduct TRAM Maintenance	10 minutes
	TOTAL TRAINING TIME REQUIRED	115 MINUTES

#### Lesson Code: TRAM 1

Competency:
 1 Operate the TRAM Safety System

Learning Outcome 1.1 Develop a concept understanding of the

TRAM Safety System

Training Objective: 1.1.1 Develop a concept understanding of the

TRAM Safety System

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
<ul> <li>Teaching Points:</li> <li>TRAM History</li> <li>The TRAM</li></ul>	Trainees are required to achieve the following standards:  • State the meaning of – TRAM  • Understand the broad concept on the development and operation of the TRAM Safety System.  • State Characteristics / Tabulated Data of the TRAM	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual
Nominal Training Time: 10 minutes		Learning Resources: TRAM Training DVD Instructional Notes TRAM Safety Instructions TRAM Safety Harness TRAM Safety System Operational Tanker with TRAM installed
Environment:  Depot - Class Room or Lunch Room		

### LESSON – TRAM 1 - DEVELOP A CONCEPT UNDERSTANDING OF THE TRAM SAFETY SYSTEM

#### POINTS OF INTEREST

- The purpose of the TOTAL RESTRAINT ACCESS MODULE (TRAM) is to prevent the
  user from falling to a lower level. The TRAM protects the user from a fall to a lower
  level in the event that the user slips, trips, is struck by an object (e.g. a hose pipe) or
  becomes incapacitated whilst on the walkway or platform. Total protection is achieved
  once the operator has attached both lanyards from the safety harness to the TRAM
  Gantry.
- TRAM also protects the user from falling when making the transition between the ladder and the walkway or platform.
- The TRAM was developed from a need to provide a safe working environment for people working at height on road tankers.
- While the TRAM was specifically designed to provide a safe working environment for operators when working on top of tankers, it is now being used in other environments, such as fixed gantry locations in various mine sites.
- The design incorporated industry input that included management and operational staff and, most importantly, direct input and feedback from drivers.
- The TRAM is Australian designed and manufactured and has been tested by the NSW crash laboratories to impact tests and/or drop tests to meet Australian Safety Standards. These tests resulted in the TRAM being rated to above 600kg before failure.
- The TRAM and horizontal rail has been tested (in Scotland) to the specifications of, and is compliant with: EN (Euro Norm 1 ton) 795:1997 Protection against falls from a height Anchor Devices Requirements and Testing.
- The TRAM Restraint Belt has been tested to: EN 358:2000 Personnel protective equipment for work positioning and prevention of falls from a height – Belts for work positioning and restraint and work positioning Lanyards.
- The TRAM Arm sits atop of the TRAM casting which straddles the TRAM rail and thereby allows the operator to move along the top of his vehicle to perform tasking.
- A significant point to note is that the TRAM Safety System is a stand alone system not requiring air, gas or electrical systems for power.
- The TRAM shall not be used outside its limitations as described in the Operators Manual, or for any purpose other than that for which it is intended.
- The system is made from Stainless Steel parts and can be affixed to the following types
  of trailers:
  - Steel Barrel Mount;
  - Stainless Steel Barrel Mount;
  - Aluminum Barrel Mount; and
  - Aluminum Combing Mount

#### TRAM SYSTEM



DATA	
Weight per TRAM unit	18 kg
Weight of TRAM rail	Approx 7.6 kg per metre
TRAM base	ASTM A747 CB7Cu-1 Stainless Steel
TRAM arm	Duplex Stainless Steel
Wheels and piston	Grade 304 Stainless Steel
Wheel bearings	Grade 320 Stainless Steel

Lesson Code: TRAM 2

Competency:
 Learning Outcome
 Operate the TRAM Safety System
 Employ the TRAM Safety Harness

Training Objective: 1.2.1 Perform a visual safety inspection on the TRAM Safety Harness

		T
TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
Teaching Points:  TRAM Safety Harness  The TRAM System Harness and how it operates Characteristics Limitations  Nominal Training Time: 15 minutes	Trainees are required to achieve the following standards:  Correctly perform a visual inspection on the TRAM Safety Harness	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual  Learning Resources: Instructional Notes TRAM Safety Instructions 1 x Unserviceable TRAM Safety Harness (if available) 1 x Serviceable TRAM Safety Harness TRAM Safety System Operational Tanker with TRAM installed
Environment:  Depot - Class Room or Lunch Room		

### LESSON – TRAM 2 - PERFORM VISUAL SAFETY INSPECTION OF THE TRAM SAFETY HARNESS

#### **POINTS OF INTEREST**

- The TRAM Safety Belt is for use as a total restraint belt and must not be used in fall arrest.
- All inspections of the TRAM Safety Belt should be conducted in conjunction with the user manual.
- The TRAM and horizontal rail has been tested (in Scotland) to the specifications of, and is compliant with: EN (Euro Norm – 1 ton) 795:1997
   Protection against falls from a height – Anchor Devices – Requirements and Testing – Class D anchor device employing a horizontal rigid anchor rail.
- The TRAM Restraint Belt has been tested to: EN 358:2000 Personnel protective equipment for work positioning and prevention of falls from a height – Belts for work positioning and restraint and work positioning Lanyards – waist belt intended for restraint.
- Check the TRAM Belt label to ensure the makers label is intact and that the date of manufacture and serial number are readable.
- Inspect the TRAM Belt material ensuring there are no cuts or tears in the belt material.
- Inspect the TRAM Belt lanyards for serviceability, ensuring there are no signs of tearing, fraying or loosening of any stitching.
- Inspect all metal components for serviceability, ensuring there are no signs of distortion, fatigue, or warping and are free of any corrosive materials.
- Inspect the TRAM Belt Safety Hooks, ensuring they operate in a safe manner (i.e. double movement to engage/disengage). Additionally, inspect the Safety Clips on the Belt ensuring they clip into position and hold the belt firmly onto the operator's waist.

NOTE: If any of the above checks identify a defect the equipment must not be used until repaired or replaced.

Lesson Code: TRAM 3

Competency
 Learning Outcome
 Training Objective:
 1 Operate the TRAM Safety System
 1.2 Employ the TRAM Safety Harness
 1.2.2 Correctly fit and wear the TRAM Safety Belt

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS		
Teaching Points:  TRAM Safety Harness  The TRAM System Harness and how it operates  TRAM Safety Belt and adjustment procedures  Characteristics Limitations  Nominal Training Time: 15 minutes	Trainees are required to achieve the following standards:  Correctly fit and adjust the TRAM Safety Belt  Correctly wear and operate the TRAM Safety Belt	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual  Learning Resources: Instructional Notes TRAM Safety Instructions 1 x Unserviceable TRAM Safety Harness (if available) 1 x Serviceable TRAM Safety Harness TRAM Safety System Operational Tanker with TRAM installed		
Environment: Depot				

### LESSON – TRAM 3 - CORRECTLY FIT AND WEAR THE TRAM SAFETY BELT

#### **POINTS OF INTEREST**

- Ensure the belt is the correct side up Makers label to the left
- Place the TRAM SAFETY BELT around the waist, ensuring it is positioned centrally around the waist, the lumber support is central to the lower back and the belt is right side up (Male section of the safety clip to the left).
- Ensure there are no twists or knots in the belt or the safety lanyards.
- Fasten the belt buckle, pull the belt strap tight.
- Connect the male section of the attached safety belt to the female section and clip into position. Adjust the safety belt as necessary.
- Ensure the belt is firm around the waist too much movement / or slip will make the belt ineffective and UNSAFE.
- If not attached, attach the safety hooks to the "D-Rings" provided.
- The belt is now ready for use.

Note 1: The TRAM Safety Belt is not a fall arrest system; it is to be used solely for the purpose of attaching the wearer to TRAM Safety System.

Note 2: If the operator has not used the belt before or has not been exposed to double action safety hooks it is recommended that the operator be given a few minutes to "play" with the hooks to ascertain how they operate.

Lesson Code: TRAM 4

Competency: Operate the TRAM Safety System 1 1.2 Employ the TRAM Safety System1.2.3 Perform Operational Tasks while wearing the Learning Outcome 1.2

Training Objective:

TRAM Safety Belt

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
Teaching Points: -TRAM Safety Belt and how it fits -The TRAM Safety Belt and how it operates -Characteristics -Limitations	Trainees are required to achieve the following standards:  Correctly perform operational requirements while wearing the TRAM Safety Belt	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual
Nominal Training Time: 10 minutes		Learning Resources: Instructional Notes TRAM Safety Instructions 1 x Unserviceable TRAM Safety Belt (if available) 1 x Serviceable TRAM Safety Belt TRAM Safety System Operational Tanker with TRAM installed
Environment: Depot		

### LESSON – TRAM 4 - PERFORM OPERATIONAL REQUIREMENTS WHILE WEARING THE TRAM SAFETY HARNESS

#### **POINTS OF INTEREST**

- Performed in conjunction with the TRAM Safety System.
- The wearer can do other tasks on the ground wearing the TRAM Safety Belt prior to connecting to the TRAM Safety System on top of the tanker.
- Move to the work area and carry out tasking as required
- Move to the rear of the trailer and position yourself on the ladder, move to a
  position where you can commence attaching your lanyards to the TRAM Arm.
  Always maintain a three point contact on the ladder. Failure to do so may
  lead to a slip trip or fall from the ladder prior to attaching lanyards to the
  TRAM Arm.

Lesson Code: TRAM 5

Competency: Learning Outcome Training Objective: Operate the TRAM Safety System Employ the TRAM Safety System Identify prominent safety points on the TRAM 1 1.3

1.3.1

Safety System

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
Teaching Points:  -TRAM Safety Belt and how it fits -The TRAM System Belt and how it operates — Revision if necessary -Characteristics -Limitations  Nominal Training Time: 10 minutes	Trainees are required to achieve the following standards:  Correctly identify prominent safety points on the TRAM Safety System	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual  Learning Resources: Instructional Notes TRAM Safety Instructions TRAM Safety System Operational Tanker with TRAM installed
Environment: Depot		

### LESSON – TRAM 5 - IDENTIFY PROMINENT SAFETY POINTS ON THE TRAM SAFETY SYSTEM

#### **POINTS OF INTEREST**

- The TRAM rail and fixtures provides the pathway for the TRAM System to move along the top of the tanker. Rail fixtures hold the rail in place and are designed to comply with design strength requirements of legislation. The rail fixtures provide the interface between the rail and the structure to which the TRAM is fitted.
- The TRAM arm provides a hand hold that moves with the operator and also supports the attachment rings which are anchor points for the restraint belt.
- The up and down movement of the TRAM Arm is controlled by the Clutch Lever. By activating the lever the operator can adjust the TRAM arm between the vertical and horizontal positions. The TRAM arm can be locked into either the horizontal, 45 degree or vertical positions and is locked into position when the clutch lever is released.
- TRAM Brake and manual brake over-ride. Identify the brake as a "Dead Man's Brake" –
  the TRAM will not move unless the brake is engaged (important for operator to
  understand). In the event the brake lever system fails, the brake over-ride can be used
  to unlock the TRAM System from its locked location, allowing the operator to move the
  TRAM System to move along the rail and then safely alight from the top of the tanker.
- In its normal position the Brake system is locked and the TRAM Safety System is locked in its location on the TRAM rail. Activating the brake lever by hand releases the TRAM System from its locked position and allows it to move along the rail with the operator. Releasing the brake lever allows it to return to the normal position and again lock the brakes and TRAM onto the rail.
- Clutch and manual clutch over-ride.
- TRAM Arm and its operation in the down, three quarter and raised positions.
- Eccentric wheel adjustment for keeping TRAM stable on the rail.
- End Buffer, Brake Buffer and TRAM Arm Rest.

Lesson Code: TRAM 6

Operate the TRAM Safety System
Employ the TRAM Safety System
Perform a visual inspection of the TRAM Competency: 1 Learning Outcome 1.3

Training Objective: 1.3.2

Safety System mounted on top of a vehicle

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
<ul> <li>Teaching Points:         <ul> <li>TRAM Safety Belt and how it fits</li> </ul> </li> <li>The TRAM System Belt and how it operates – Revision if necessary</li> <li>Characteristics</li> <li>Limitations</li> <li>Nominal Training Time: 10 minutes</li> </ul>	Trainees are required to achieve the following standards:  Correctly perform a visual inspection of the TRAM Safety System mounted on top of a tanker	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual (see page 12- 17)  Learning Resources: Instructional Notes TRAM Safety Instructions TRAM Safety System Operational Tanker with TRAM installed
Environment: Depot		

### LESSON – TRAM 6 - PERFORM VISUAL INSPECTION OF THE TRAM SAFETY SYSTEM MOUNTED ON TOP OF A VEHICLE

#### **POINTS OF INTEREST**

- The operation and maintenance of the TRAM Safety System must comply with the safety legislation and regulations of the jurisdiction in which it is used.
- Inspection of the TRAM must be carried out on all occasions prior to use.
   When conducting a visual inspection of the TRAM the Operator should look for:
  - Any immediate damage that is evident, for example, bends, bows or buckles in the TRAM structure, paying particular attention to the:
    - TRAM Safety System
    - o Mounting Brackets
    - o Mounting Bracket Fasteners
  - Any wires hanging loose if loose wires are identified the OH&S
     Officer is to be immediately notified assess the damage and have
     your workshop inspect for serviceability;
  - Conduct a visual and hands on inspection of the Brake and Clutch cables, ensuring they are operational and showing no signs of wear;
  - Inspect the actual brake shoes, looking for wear and tear on the brake shoes or corrosion in the brake structure;
  - Conduct a visual inspection of the TRAM rail, ensuring it is free from any material that may affect the transition of the TRAM along the rail;
  - Inspect all welds, including compensation and mounting plates, looking for cracks or stress marks, giving special attention to the connection welds on the rail.
  - Inspect the clutch pin, ensuring it sits correctly in the pin grooves and that the arm locks into position.
  - Inspect the TRAM operation by moving it along the rail.

Lesson Code: TRAM 7

Competency: Operate the TRAM Safety System 1 Employ the TRAM Safety System
Apply the TRAM Safety System with the TRAM Learning Outcome 1.3

Training Objective: 1.3.3

Safety Harness

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
Teaching Points:  TRAM Safety Harness and how it fits  The TRAM System Harness and how it operates – Revision if necessary Characteristics Limitations  Nominal Training Time: minutes	Trainees are required to achieve the following standards:  Correctly apply the TRAM Safety System with the TRAM Safety Harness	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual  Learning Resources: Instructional Notes TRAM Safety Instructions TRAM Safety System Operational Tanker with TRAM installed
Environment: Depot		

### LESSON – TRAM 7 - APPLY THE TRAM SAFETY SYSTEM WITH THE TRAM SAFETY HARNESS

#### **POINTS OF INTEREST**

- Ensure the TRAM Safety Harness is positioned correctly around the waist and secured with the appropriate fasteners.
- Climb the trailer ladder to a position short of the Arm of the TRAM Safety System.
- Maintain a three-point contact with the trailer, for example, both feet firmly situated on the trailer ladder and the left hand firmly grasping the TRAM Arm. With the right hand, unclip the lanyard from the Safety Harness and clip it into position on the TRAM Safety System. Repeat this method to clip the left hand lanyard onto the TRAM Safety System.
- When securely attached, engage the clutch and walk up the ladder while lifting the TRAM Arm into the upright position.
- Repeat this activity to enable the operator to gain confidence in connecting the Harness to the TRAM Safety System.
- Never disengage both lanyards when on top of the tanker or when on the ladder.

Lesson Code: TRAM 8

Competency: 1 Operate the TRAM Safety System
 Learning Outcome 1.3 Employ the TRAM Safety System
 Training Objective: 1.3.4 Operate the TRAM Safety System

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
Teaching Points:  TRAM Safety Harness and how it fits  The TRAM System Harness and how it operates  How to assist others in the use of the TRAM Safety System – in conjunction with the TRAM Safety Harness – Revision if necessary  Characteristics Limitations  Nominal Training Time:  make the transparse of the TRAM Safety System – in conjunction with the TRAM Safety Harness – Revision if necessary  The training Time:  The transparse of the TRAM Safety System – in conjunction with the TRAM Safety Harness – Revision if necessary  The training Time:  The transparse of the TRAM Safety System – in conjunction with the TRAM Safety Harness – Revision if necessary  The training Time:  The training Time:	Trainees are required to achieve the following standards:  Correctly operate the TRAM Safety System  Correctly state the operation of the TRAM  Correctly assist others through the use of the TRAM Safety Harness and TRAM Safety System	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual  Learning Resources: Instructional Notes TRAM Safety Instructions TRAM Safety System Operational Tanker with TRAM installed
Environment: Depot		

#### **LESSON – TRAM 8 - OPERATE THE TRAM SAFETY SYSTEM**

#### POINTS OF INTEREST

- Maintain a three point contact with the trailer, for example, both feet firmly situated on the trailer ladder and the left hand firmly grasping the TRAM Arm. With the right hand, unclip the lanyard from the Safety Harness and clip it into position on the TRAM Safety System. Repeat this method to clip the left hand lanyard onto the TRAM Safety System.
- When securely attached, engage the clutch and walk up the ladder while lifting the TRAM Arm into the upright position.
- When in this position release the clutch, engage the brake and move along the top of the tanker.
- Move the TRAM Arm into the three quarter and down position to show TRAM operation in this position (important for operator to understand that work can be conducted from any position).
- Lanyards can be removed and reattached to other attachment points when on top of the tanker. The operator should never have both lanyards removed at the same time this would be a serious safety breach.

Lesson Code: TRAM 9

Competency: 1 Operate the TRAM Safety System

Learning Outcome: 1.4 Conduct Maintenance on the TRAM Safety System

Training Objective: 1.4.1 State the TRAM Maintenance Requirements

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
Teaching Points:	Trainees are required to achieve the following standards:  Correctly state the TRAM Maintenance Requirements	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual  Learning Resources: Instructional Notes TRAM Safety Instructions TRAM Safety System
Environment: Depot		

#### **LESSON – TRAM 9 - STATE TRAM MAINTENANCE REQUIREMENTS**

#### **POINTS OF INTEREST**

- All inspection, maintenance, servicing and repair work on the TRAM Safety System shall be carried out by a competent person. A competent person is defined as a person who:
  - Is knowledgeable of recommendations and instructions on the TRAM Safety System as issued by Standfast Corporation;
  - Is authorised by Standfast Corporation to carry out inspection, maintenance, servicing and repair work;
  - Has the necessary training, skills and knowledge to perform the work properly;
  - Is capable of identifying existing and predictable defects and hazards in any component of the TRAM Safety System and related equipment used in the work environment;
  - Is authorised to take prompt corrective action to eliminate or control hazards, and has the necessary skills and resources to do so;
  - Is familiar with the relevant guidelines and National and International safety regulations.
- Regular inspections seeking evidence of permanent deformation in shape and orientation should be carried out the:
  - TRAM Rail
  - Mounting Brackets
  - Fasteners
- All maintenance work on the TRAM Safety System must comply with the safety regulations of the jurisdiction in which the TRAM is installed and operated, including industry Codes of Practice and Standards.
- It is recommended that the TRAM is cleaned regularly, with particular attention given to the TRAM rail ensuring all foreign material is removed.
- Hose all parts with clean fresh water.
- Ensure no corrosive materials are left in the TRAM working parts.
- Clean the TRAM rail and ensure it is free from debris.
- If possible, air hose all parts.
- Care must be taken not to contaminate parts of the TRAM device by allowing it to come into contact with mild or carbon steel cleaning implements.

#### **INSPECTION & MAINTENANCE ACTIVITIES & SCHEDULE**

**Pre-Use Check -** The Pre-Use Check is a checklist that is to be completed before the TRAM System is used each time. This will ensure the TRAM operates correctly and safely at all times. It should be performed by the user of the TRAM.

**Cleaning -** To maintain continued performance, appearance and durability of your RBT, it should be cleaned regularly using the Cleaning procedure. Cleaning should be performed at intervals depending on the severity of the working environment and may be carried out by the user or at a maintenance workshop.

**Periodic Service -** The Periodic Service is an in-depth inspection and maintenance procedure and should be carried out on all elements of the RBT at periodic intervals depending on the working environment. Periodic Servicing should be carried out by a Competent Person, who is defined as:

- who is knowledgeable of recommendations and instructions on the TRAM System issued by Standfast (including the information contained in this manual)
- who is authorised\* by Standfast to carry out inspection, maintenance, servicing and repair work,
- who has the necessary training, skills and tools to perform the work properly,
- who is capable of identifying existing and predictable defects and hazards in any component of the TRAM safety system and related equipment used in the work environment,
- who is authorised to take prompt corrective action to eliminate or control hazards, and has the skills and resources to do so,
- who is familiar with relevant guidelines and national and international safety regulations.

**Note!** The Periodic Services contained in this Training Document comply with the requirements of the "periodic examination" contained in the Standard EN 365:2004.

**Overhaul Service -** The Overhaul Service is a preventative service where the major wear items of the TRAM System are replaced before failure. An Overhaul Service is always carried out in conjunction with a Periodic Service. Overhaul Servicing should be carried out by a Competent Person as defined in this Manual.

**Repair -** Repair work is to be done on an as required basis. The requirement for repair work and associated downtime will be minimised when other maintenance activities are completed properly and at recommended intervals. Any repair work is to be carried out by a Competent Person.

The following Table provides the maintenance interval schedule for the TRAM System:

#### **Maintenance Interval Schedule**

Activity	Normal Operating Conditions Frequency	Extreme Operating Conditions Frequency
Pre-Use Check	Before each use	Before each use
Cleaning	At least every 6 weeks	At least every 3 weeks
Periodic Service	Every six (6) months	Every four (4) months
Overhaul Service	Every three (3) years	Every two (2) years
Repair	At any time as required	At any time as required

**Important!** The RBT Safety System should be maintained under the Normal Operating Conditions Schedule unless the System is exposed to or operates in <u>one</u> <u>or more</u> of the following conditions:

- Temperature extremes above 60°C or below -10°C
- Abrasive dust, bull dust, cement powder
- Corrosive liquids
- High salt concentrations or a marine environment or vehicular applications, "Off Road" conditions

**Important!** For special cases, the frequency of services carried out may be increased for individual items depending upon your specific maintenance practices, operation and application.

**Important!** For vehicle mounted RBTs the Maintenance Interval Schedule should be included into the vehicle's preventative maintenance program/schedule.

**Important!** Although most users will obtain more life for the parts to be replaced during overhaul servicing than the overhaul schedule recommends, Standfast has determined that these limits are the best (least cost) for the vast majority of our TRAM users.

The following Table provides a summary of Maintenance Activities showing who is able to carry out which activity and the documentation records of maintenance required:

**Maintenance Activity Summary** 

Activity	May be carried out by:		Maintenance Record		
	User	Competent Person			
Pre-Use Check	Yes	Yes	-		
Cleaning	Yes	Yes	-		
Periodic Service	No	Yes	Record Record	on	Equipment
Overhaul Service	No	Yes	Record Record	on	Equipment
Repair	No	Yes	Record Record	on	Equipment

**MAINTENANCE RECORDS** - accurate maintenance records can be used for determining operating costs, establishing maintenance schedules for other tram systems being operated in the same environment and for a variety of other related business decisions. Accurate maintenance records can also be used to show compliance with the required maintenance practices and intervals required for product warranty.

In addition to the Equipment Record, the following types of documents should be kept as proof of maintenance or repair for warranty:

- 1. Standfast Dealer work orders and itemized bills.
- 2. Owner's repair orders.
- 3. Owner's receipts.

#### **CLEANING PROCEDURES**

#### TRAM BELT CLEANING PROCEDURE

- 1. Wipe off surface dirt with a damp cloth
- 2. Clean webbing and hardware with warm water and mild detergent
- 3. Rinse in warm water
- 4. Drip dry in shade

**Important!** Do not place Belt near direct heat or in direct sun to dry **Important!** Do not store a wet or damp belt

#### **CLEANING PROCEDURE**

**Important!** The TRAM is constructed predominately of **Stainless Steel** components and is very durable in normal operating conditions.

Care should be taken not to contaminate parts of the RBT by allowing it to come into contact with Mild or Carbon Steel cleaning implements.

- 1. Remove TRAM dust cover (if fitted) and visually inspect the TRAM unit for evidence of contaminants eg dust, stones, mud, cement, grain dust etc that will foul the working parts of the TRAM.
- 2. Hose down the TRAM, Rail & Fixtures to remove any excess contaminants.
- 3. Visually inspect the unit again and remove any further contaminates with the aid of brushes and cleaning tools. For best results, wash with mild detergent and warm water followed by rinsing with clean cold water
- 4. If any stains or surface rust remains after the cleaning steps above scrubbing may be required. Use a clean nylon scourer or a cloth with chalk-based cream cleaner. Alternatively it may be necessary to use a proprietary stainless steel cleaner. These are usually based on dangerous chemicals (such as phosphoric, oxalic or sulphamic acids) and must be handled with care according to the manufacturer's directions. After cleaning it is important to neutralise any acids with a 1% ammonia or baking powder solution followed by rinsing with clean water.

**Important!** Cement and mortar splashes should be washed off before they set. Mild acids such as vinegar may be used, however avoid those using chloride rich chemicals. Do not use brick cleaning liquids which contain hydrochloric acid.

#### INSTALLATION CLEANING PROCEDURE

**Important!** The TRAM Rail must be kept free of deposits of foreign material. Deposits may interfere with the TRAM Wheels affecting smooth operation of the system or cause damage to the Wheel System.

- 1. Visually inspect the TRAM Installation, including the rail and all individual fixtures for evidence of contaminants eg dust, stones, mud, cement etc.
- 2. Hose down the TRAM Installation to remove any excess contaminants using clean water. Alternatively use a nylon scrubbing brush and bucket of water.
- 3. Visually inspect the Installation again and remove any further contaminants with the aid of brushes and cleaning tools. For best results, wash with mild detergent and warm water followed by rinsing with clean cold water.
- 4. If, after cleaning the Rail using the above procedure, foreign deposits remain, it is important that they are removed completely. Successful removal may require the use of an abrasive cleaning method. If an abrasive cleaning method is to be used, first ensure that the abrasive cleaning method selected is compatible with the Galvanised Carbon Steel Rail OR the Stainless Steel Rail (depending on your installation).

Important! Never use steel wool (wire wool) or steel wire brushes to clean stainless steel. They are usually made of carbon steel and any fragments left behind will rust onto the stainless steel surface. Using any kind of scourer which has previously been used on mild or carbon steel should also be avoided for the same reason.

Lesson Code: **TRAM 10** 

Competency:

 Operate the TRAM Safety System
 Conduct Maintenance on the TRAM Safety System Learning Outcome
Training Objective:

1.4.2 Conduct TRAM Maintenance

TRAINING CRITERIA	ASSESSMENT CRITERIA	REMARKS
Teaching Points:	Trainees are required to achieve the following standards:  Correctly assess a safe work platform  Correctly conduct TRAM Maintenance	References: TR-06-M-001 TRAM System Operators Manual TR-06-M-002 TRAM System Technical Manual  Learning Resources: Instructional Notes TRAM Safety Instructions TRAM Safety System
Environment: Depot		

#### **LESSON – TRAM 10 - CONDUCT TRAM MAINTENANCE**

#### POINTS OF INTEREST

- Operators should note that most accidents involving product operation, maintenance and repair are caused by failure to observe basic safety rules or regulations. An accident can often be avoided by recognizing potentially hazardous situations before an accident occurs.
- It is a responsibility of the owner to ensure that access to tankers is achieved in accordance with local regulations and standards.
- Continued performance, appearance and durability of the TRAM System will be
  dependent on a regular cleaning and maintenance schedule. Cleaning should be
  performed at intervals depending on the severity of the working environment and
  may be carried out by the user or at the nearest maintenance workshop. Both
  operators and maintenance staff should have a responsibility for the
  continued performance of the TRAM.
- Do not carry out hot work on the TRAM Safety System without first consulting a representative from Standfast Corporation. The TRAM does contain some plastic components that may be affected in the event of any hot work maintenance.
- Support any equipment and/or attachments correctly when working beneath them.
- Do not allow unauthorized personnel on or around the TRAM when it is being serviced.
- Do not attempt repairs to the TRAM if you are unsure of equipment or correct procedure.
- On an as required basis when the tanker is available for maintenance.
- Any structural failure which necessitates a repair, or if it is considered that the TRAM System may have been overloaded either in service or otherwise, should be removed from service immediately.

# NSTRUCTIONS FOR THE USE OF ASSESSMENT PACKAGES TRAM SAFETY SYSTEM OPERATORS COURSE

#### **Background**

1. The development and maintenance of assessment packages is the responsibility of Standfast Enterprises. To maintain consistent standards the assessment instruments have been prescribed and cannot be amended without the authority of the General Manager, Standfast Enterprises.

#### Aim

2. The aim of this instruction is to outline the use of the TRAM operators course assessment package.

#### **Assessment Package Components**

- 1. The following details the requisite components of the assessment package:
  - a. **Policy on Assessor Accreditation.** A qualified workplace assessor may be deemed as Trade Testing Officers for this course;
  - b. **Instructions to Assessors.** This outlines the information required by assessors to conduct operator assessments;
  - c. Assessment Cover Sheet. This is the cover sheet required by Standfast to cover an assessment on the TRAM Safety System. The operator's (trainee's) details are completed prior to the response stage of assessment. The assessor marks the assessment, completes the assessor details section, notes the result and signs and dates the cover sheet. The assessor debriefs the trainee and informs them of the achievement of the criteria and subsequent competence;
  - d. **Trainee Assessment Log.** This is used for recording assessment. The skills are listed and the assessor ticks the relevant column to identify the outcome of the assessment. All training that is not conducted is to be recorded in the operator's training log book. A trainee assessment log is to be raised on all individuals who undertake the TRAM Safety System Operators Course;
  - e. **Resources.** This section identifies the resources required to conduct the assessments;
  - f. **Assessment Questions/Tasks.** Assessment relates to the determination of competency. As such, those questions/tasks that do not directly relate to assessment of competency are not included; and

g. **Assessing Policy.** Organisations are not authorized to make any changes to any guides or assessment proformas. Any variation must be approved, in writing, by the General Manager, Standfast Enterprises.

#### TRAM SAFETY SYSTEM OPERATORS COURSE

#### **Assessment Package Contents**

- 1. The following assessment packages relate to competency 1 Operate the TRAM Safety System.
  - a. Annex A General Instructions to workplace assessors;
  - b. Annex B Individual assessment packages;
  - c. Annex C Instructions to Assessors;
  - d. Annex D Instructions to Trainees;
  - e. Annex E Assessment Cover Sheet Develop a concept understanding of the TRAM Safety System;
  - f. Annex F Assessment Cover Sheet Employ the TRAM Safety Harness;
  - g. Annex G Assessment Cover Sheet Employ the Tram Safety System; and
  - h. Annex H Assessment Cover Sheet Conduct Maintenance on the TRAM Safety System.

# STANDFAST CORPORATION TOTAL RESTRAINT ACCESS MODULE TRAM SAFETY SYSTEM OPERATORS COURSE

#### GENERAL INSTRUCTIONS TO WORKPLACE ASSESSORS

#### General

- 1. The assessments are as follows:
  - a. Assessment 1 Develop a concept understanding of the TRAM Safety System
  - b. Assessment 2 Employ the TRAM Safety Harness.
  - c. Assessment 3 Employ the TRAM Safety System.
  - d. Assessment 4 Conduct maintenance on the TRAM Safety System.

#### **Assessment Directions**

- 2. Assessments are to be conducted as follows:
  - a. **Conduct.** All of the requirements of the practical and theory tasks are to be explained to the trainee, these details are included in the 'Instruction to Trainees'. This includes the length of time available to complete the assessment, the amount of assistance permitted, and any other rules pertaining to the assessment. In addition to the verbal brief, each trainee is to receive a paper copy of the 'Instructions to Trainee'. Further details relevant to the conduct of the assessment are included in the 'Instruction to Assessors' for each assessment.
  - b. **Questions.** If the trainee requires prompting during practical or oral assessments, the assessor may ask questions to determine the trainees understanding of the subject.

#### Marking

3. Individuals will be assessed for competency at the end of each main task.

#### Note:

Trainees are deemed "Not Yet Competent" if they do not achieve competency in the summative assessments. If a trainee is deemed Not Yet Competent from the summative assessments they are to be re-assessed after suitable training.

#### **Assessment Cover Sheet**

4. You are to advise the trainees to verify the number of pages for the assessment and have them complete the assessment cover sheet.

#### **Collecting Assessments**

5. Once a trainee has completed the assessment the assessor is to debrief the trainee on their individual performance and collect all assessment material, including the Instructions to Trainees.

#### Results

6. Trainees are to be advised of their results immediately the assessment is completed.

#### Reassessment

7. If a trainee fails the assessment, they are to be re-assessed following counseling on the reason for their failure. Subsequent failure on reassessment constitutes a failure of this competency.

# STANDFAST CORPORATION TOTAL RESTRAINT ACCESS MODULE TRAM SAFETY SYSTEM OPERATORS COURSE

# INDIVIDUAL ASSESSMENT PACKAGES

- 1. Individual assessment packages are detailed as follows:
  - a. Assessment 1 Develop a concept understanding of the TRAM Safety System
  - b. Assessment 2 Employ the TRAM Safety Harness;
  - b. Assessment 3 Employ the TRAM Safety System; and
  - c. Assessment 4 Conduct maintenance on the TRAM Safety System.
- 2. Each assessment will include the following assessment details:
  - a. Instructions to Assessor,
  - b. Instructions to Trainees;
  - c. Assessment Cover Sheet;
  - d. Assessment; and
  - e. Assessment Marking Guide.

# STANDFAST CORPORATION TOTAL RESTRAINT ACCESS MODULE TRAM SAFETY SYSTEM OPERATORS COURSE

# INSTRUCTIONS TO ASSESSORS

# Aim

- 1. The aim of this assessment is to assess the trainee's ability to employ and conduct the following:
  - a. Understand the concept and development of the TRAM Safety System;
  - b. Employment of the TRAM Safety Harness;
  - c. Employment of the TRAM Safety System; and
  - d. Conduct maintenance on the TRAM Safety System.

# Location

2. This assessment is to be conducted in the confines of the operational fleet depot.

# **Stores and Equipment**

- 3. The following stores and equipment are required for the assessment:
  - a. TRAM Safety Harness (essential);
  - b. TRAM Safety Instructions (essential);
  - c. TRAM Demonstrator model (not essential);
  - e. TRAM Safety System (essential);
  - f. Repair tools and cleaning utensils (not essential).

# **Trainee to Assessor Ratio**

2. The recommended trainee to assessor ratio is three to one.

# Conduct

- 3. The 'Instruction to Trainees' is to be explained to the trainees before the assessment.
- 4. The assessment on the TRAM Safety System is a practical assessment conducted as follows:
  - a. State characteristics of the TRAM Safety Harness and the TRAM Safety System; and
  - b. Operate and Maintain the TRAM Safety System.

# **Standards**

5. Standards for assessment are to be in accordance with the TRAM assessment guide.

# **Reassessment Policy**

8. If a trainee fails the assessment, they are to be re-assessed following counseling on the reason for their failure. Subsequent failure on reassessment constitutes a failure of this competency.

# STANDFAST CORPORATION TOTAL RESTRAINT ACCESS MODULE TRAM SAFETY SYSTEM OPERATORS COURSE

#### **INSTRUCTIONS TO TRAINEES**

#### **Assessment Brief**

1. The following brief is to be given to the trainee before the commencement of the assessment.

# Aim

- 2. The aim of this practical assessment is to assess the trainees ability to operate or conduct the following:
  - a. Displaying a concept understanding of the TRAM Safety System;
  - b. Displaying and understanding operational requirements for the safe employment of the TRAM Safety Harness;
  - c. Displaying and understanding operational requirements for the safe employment of the TRAM Safety System; and
  - d. Understanding the maintenance requirements for continued safe operation of the TRAM.

#### Location

3. This assessment is to be conducted in the confines of the operational fleet depot.

# **Stores and Equipment**

- 4. The following stores and equipment are required for the assessment:
  - a. TRAM Safety Harness (essential);
  - b. TRAM Safety Instructions (essential);
  - c. TRAM Demonstrator model (not essential);
  - d. TRAM Safety System Mounted on top of a Trailer (essential);
  - e. Repair tools and cleaning utensils (not essential).

# **Reassessment Policy**

5. If a trainee fails the assessment, they are to be re-assessed following counseling on the reason for their failure. Subsequent failure on reassessment constitutes a failure of this competency.

# DEVELOP A CONCEPT UNDERSTANDING OF THE TRAM SAFETY SYSTEM

Trainees Name:		
Assessors Name:		
Assessors Signature:		
Date:		
	Assessment Decision	
	Competent – Understands	
	TRAM Concept	
	Not yet competent	
Comments:		

# **EMPLOY THE TRAM SAFETY HARNESS**

Trainees Name:	
Assessors Name:	
Assessors Signature:	
Date:	
	Assessment Decision
_	
	Competent
	Not yet competent
Comments:	

# **EMPLOY THE TRAM SAFETY SYSTEM**

Trainees Name:		
Assessors Name:		
Assessors Signature:		
Date:		
	Assessment Decision	
	Competent	
	Not yet competent	
Comments:		

# **CONDUCT MAINTENANCE ON THE TRAM SAFETY SYSTEM**

Trainees Name:		
Assessors Name:		
Assessors Signature:		
Date:		
	Assessment Decision	
	Competent	
	Not yet competent	
Comments		

# **EMPLOY THE TRAM SAFETY HARNESS**

# **ASSESSMENT GUIDE**

Trainees Name: Result: C / NC / NYC / NA

#### **Instructions to Assessors**

A Trainee is not to exceed the number of errors indicated in the Permissible Errors (PE) column. A **Minor Error** is defined as an error that does not affect the safety or have the potential to hamper the operation of the TRAM Safety System.

Assessor's Command	Required Actions	PE	Pass/Fail
"Explain the TRAM and state	Explain:	In own	
how the TRAM operates"	TRAM Concept – What is the TRAM.	words –	
		assistance	
	State:	allowed	
	How does the TRAM operate.	from	
		Instructor	
	State the safe steps for operating the		
	TRAM.		

# **EMPLOY THE TRAM SAFETY HARNESS**

# **ASSESSMENT GUIDE**

Trainees Name: Result: C / NC / NYC / NA

# **Instructions to Assessors**

A Trainee is not to exceed the number of errors indicated in the Permissible Errors (PE) column. A **Minor Error** is defined as an error that does not affect the safety or have the potential to hamper the operation of the TRAM Safety System.

Assessor's Command	Required Actions	PE	Pass/Fail
"Inspect the TRAM Safety Harness for Operation"	Identify lumber support	1 x Minor	
Trainess for eporation	Conduct a visual Inspection on all stitching	No assistance allowed	
	Conduct a visual inspection on all safety rings	anowod	
	Conduct a visual inspection on belt safety clips		
	Conduct a visual inspection on safety hooks		
"Fit the Tram Safety Harness"	Correctly fit and attach the TRAM Safety Harness around the waste	Nil	
	ensuring the harness is not up-side- down (ME)	No assistance allowed	
	Engage and adjust (if necessary) safety clips for comfortable fit (ME)		
	Check connection of safety clips		
	Check and Operate safety hooks to ensure serviceability (ME)		
	Engage safety hooks and ensure they are correctly (ME) engaged to 'D Rings'		

# **EMPLOY THE TRAM SAFETY SYSTEM**

# **ASSESSMENT GUIDE**

Trainees Name: Result: C / NC / NYC / NA

# **Instructions to Assessors**

A Trainee is not to exceed the number of errors indicated in the Permissible Errors (PE) column. A **Minor Error** is defined as an error that does not affect the safety or have the potential to hamper the operation of the TRAM Safety System.

Assessor's Command	Required Actions	PE	Pass/Fail
"Identify the prominent safety features on the TRAM"	Identify Main operational features, for example: Brake and manual brake over-ride Clutch and manual clutch over-ride	1 X Minor No assist ance allowed	
" Perform a visual inspection of the TRAM Safety System stating appropriate features	Conduct a visual Inspection on the TRAM – looking for: Identifiable loose cables Brake and Clutch handles in position and operational Bends or buckles in the TRAM structure Fitting and serviceability of safety belt clips attached to the TRAM	1 x Minor  No assist ance allowed	
"Apply the Safety Harness to TRAM System"	Safely climb the trailer ladder and connect the Safety Harness to the TRAM:  Maintain a three point contact on the ladder  Always have hands positioned on the TRAM Handle  Connect the Harness lanyards to the appropriate TRAM D Rings  Conduct a final visual inspection of the safety harness before moving on top of the tanker	1 x Minor  No assistance allowed	
Conduct "Operate the TRAM Safety System on top of a tanker"	Engage the TRAM Clutch and move onto the top of the tanker Lift the TRAM handle to the upright opposition Move along the top of the tanker using the TRAM Test TRAM brake system Open a hatch to confirm operability of the TRAM Close Hatch and continue to move along the top of the Tanker Move back towards the ladder and prepare to move off the top of the tanker (the method of movement back towards the ladder is an operators choice – connection to the TRAM with the harness must be maintained) Lower the TRAM Handle by engaging the clutch Move to a position on the ladder and then disengage the lanyards from the TRAM and engaging the lanyard in the provided belt clips Maintain a three point contact with the TRAM When both lanyards have been disengaged move safely down the ladder	Nil	

# TRAM MAINTENANCE ASSESSMENT GUIDE

# . ASSESSMENT GUIDE

# **Instructions to Assessors**

A Trainee is not to exceed the number of errors indicated in the Permissible Errors (PE) column. A **Minor Error** is defined as an error that does not affect the safety or have the potential to hamper the operation of the TRAM Safety System.

Assessor's Command	Required Actions	PE	Pass/Fail
State the TRAM Maintenance requirements	Explain: Maintenance required is limited  Water or Air hose dirt and grime off the TRAM  Check brake shoe serviceability and operability  Check clutch and brake manual override clearing any build up of dirt and grime away from operation	1 x Minor	
Conduct TRAM Maintenance	(To be tested when TRAM Maintenance required) As above	Nil	





# Standfast Corporation

Unit 2, 8 Camford Street, PO Box 1224, Milton Queensland 4064 Australia **Telephone +61 7 3369 9800** Facsimile +61 7 3369 9844 hq@standfastcorp.com www.standfastcorp.com



#### Standfast USA

2502 North Clark Street, Suite #207, Chicago, IL. 60614

Telephone 877 850 TRAM (8726) Facsimile 219 972 7654

www.standfastusa.com



#### Standfast International

Bruxelles 15 BP 20, 1150 Woluwe Saint Pierre Belgium **Telephone** +32 (0)2 779 9500

www.standfastcorp.com

