



May 2008

**INTERNATIONAL CYANIDE MANAGEMENT CODE
CYANIDE TRANSPORTATION CERTIFICATION AUDIT**

**Freight Forwarders Tanzania Limited
Cyanide Transportation Audit
Tanzania, East Africa
Summary Audit Report**

Submitted to:

Freight Forwarders Tanzania Limited
PO Box 179
Dar es Salaam
TANZANIA (EAST AFRICA)

International Cyanide Management Institute (ICMI)
1200 G Street, NW, Suite 800
Washington DC 20005
UNITED STATES OF AMERICA

REPORT



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RECORD OF ISSUE

Date	Revision	Format	Company	Name	Copies
11 Apr 2008	Rev 0	Electronic	FFT	Iain Turner	1
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**SUMMARY AUDIT REPORT
FOR CYANIDE TRANSPORTATION OPERATIONS**

Name of Cyanide Transportation Facility: Freight Forwarders Tanzania Limited
Name of Facility Owner: Freight Forwarders Tanzania Limited
Name of Facility Operator: Freight Forwarders Tanzania Limited
Name of Responsible Manager: Hasan Dhala, Managing Director
Address: PO Box 79658
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Location detail and description of operation:

Freight Forwarders Tanzania Limited

Background

FFT views itself as a market leader in the Clearing and Forwarding Industry in East Africa and the Company's Vision Statement notes that FFT to maintain its reputation for excellence by providing superior logistics services in a professional and competitive manner.

FFT provides the following services:


- Clearing & Forwarding.
- Maritime & Port Operations Management.
- Handling & Warehousing.
- Transport & Delivery.

FFT utilises a Transit Yard within close proximity of the Port of Dar es Salaam for the temporary storage of cyanide. The Transit Yard is owned and managed by FFT.

FFT utilise the transportation services of Golden Coach Limited and Mainline Carriers Limited within Tanzania.

FFT has a close working relationship with Freight Forwarders Kenya Limited (FFK).

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New Ilala Transit Yard

FFT operates two storage facilities for transit cargo and for break-bulk cargo in Dar es Salaam. Each Yard is set up for different functions. The New Ilala Transit Yard is located on the Main Airport Road and is readily accessed from the Port using a dual carriageway. The yard provides transit storage facilities for dangerous goods (cyanide), containers, bulk and out of gauge cargo along with warehousing facilities for smaller or loose cargo.

The Transit Yard has been designated as the Cyanide storage facility by FFT and the Company has modified and manages the Transit Yard to meet the requirements of the ICMC.

Golden Coach Limited

Based in Dar es Salaam, Tanzania, Golden Coach Ltd (GCL) has been in operation for over 30 years. GCL's main client is FFT.

GCL provides service throughout Tanzania and its neighbouring countries such as Kenya, Uganda, Burundi and Rwanda. The company specialise in bulk and containerised cargo deliveries. Services offered by GCL include:

- General cargo haulage.
- Abnormal/Out of gauge cargo haulage.
- Hazardous goods haulage.
- Consolidated cargo haulage.

The Company maintains its vehicles at its own workshop.

Mainline Carriers Ltd


Based in Dar es Salaam, Tanzania, Mainline Carriers Ltd (MCL) has been in operation for over 20 years.

MCL provide services throughout Tanzania and its neighbouring countries such as Kenya, Uganda, Malawi and Zambia as well as long haul trips to Johannesburg, South Africa. The company specialise in hazardous goods including Cyanide and various other materials.

Services offered by MCL include:

- General cargo haulage.

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- Abnormal/Out of gauge cargo haulage.
- Hazardous goods haulage.
- Consolidated cargo haulage (Dar es Salaam to Johannesburg, and back).
- Rigging Transformers/heavy power generators.

The Company maintains its vehicles at its own workshop.

Sodium Cyanide Transportation

Solid Sodium Cyanide manufactured by Orica Australia Limited (Orica) is packaged in Intermediate Bulk Containers (IBC), which are in turn packed into a container. The containers are dispatched from The Yarwun Plant in Queensland, Australia, and delivered by ship to the Port of Dar es Salaam, Tanzania. The port is operated by the Tanzania Ports Authority (TPA).

At the Port of Dar es Salaam, the containers are unloaded using dockside container handling equipment by the Tanzania International Container Terminal System (TICTS) onto shunters for placement within the TICTS Yard by Container Stackers.


The containers are arranged in a group, away from other dangerous goods while the various customs and import documents are cleared. Once documentation is completed (between two and four days), the convoy assembles and enters the TICTS area for loading.

The convoy comprises a lead vehicle (Crew-cab pick-up), the required number of Semi-Trailer trucks (between 8 and 16), and finally the Cyanide Emergency Spills Response Kit. Prior to loading, each truck is checked for roadworthiness by the Convoy Leader using a checklist.

One container is loaded on each trailer using the TICTS Container Stacker. During this operation, each container is checked for damage and the seals are noted as being correct and in place. An extra security plate arrangement is placed between the container and the trailer during loading. This security plate arrangement ensures that even if the seals are broken the doors of the container cannot be opened.

The loaded convoy of trucks with the escort vehicles then departs the TICTS area and the port. The convoy usually leaves the city of Dar es Salaam for the client sites. Where there is a need, the containers can be driven the 12 km to the FFT Ilala Transit Yard for temporary storage.

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At the Transit Yard, the containers are offloaded by a forklift container handler and stacked in a designated area within the yard. The containers can be re-loaded at a later time for transport to the client sites. The same procedures for truck roadworthiness and container integrity are used as in the TICTS area.

Routes to the Client sites have been assessed and the most suitable routes selected. The condition of transport infrastructure from the Port of Dar es Salaam to the mine site locations varies greatly, ranging between high quality sealed roads, sections of tarmac in poor condition and gravel/dirt roads in poor condition

Convoys only operate during daylight hours, 06:00 and 18:00, to limit driver fatigue and ensure that should there be an incident there is some daylight remaining to effect immediate first response.

At the time of the audit, FFT delivered to four client sites within Tanzania.


Client	Distance	Travel Time
North Mara Mine	1,500 Km	4-5 Days
Bulyanhulu Mine	1,120 Km	3-4 Days
Tulawaka Mine	1,215 Km	3-4 Days
Geita Gold Mine	1,180 Km	3-4 Days

Once at the Client sites, the containers are offloaded by the client.

Dates of Audit:

The transportation audit and reporting was undertaken during January and February 2008. The field component of the audit was undertaken over eight person-days between 22 and 25 January 2008.

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Auditor's Finding

FFT's operations within Tanzania are:


- ☒ in full compliance with
- ☐ in substantial compliance with
- ☐ not in compliance with

**The International
Cyanide Management
Code**

A breakdown of the findings is detailed below:

Audit Company: Golder Associates
Audit Team Leader: Edward Clerk, CEnvP
Email: eclerk@golder.com.au

Name and signatures of other auditors:

<u>Ken Price (Technical Specialist)</u>		<u>23 April 2008</u>
Name of Auditor	Signature of Auditor	Date

I attest that I meet the criteria for knowledge, experience and conflict of interest for Code Verification Audit Team Leader, established by the International Cyanide Management Institute and that all members of the audit team meet the applicable criteria established by the International Cyanide Management Institute for Code Verification Auditors.

I attest that this Summary Audit Report accurately describes the findings of the verification audit. I further attest that the verification audit was conducted in a professional manner in accordance with the International Cyanide Management Code Verification Protocol for Cyanide Transportation Operations and using standard and accepted practices for health, safety and environmental audits.

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23rd April
2008


Signature of Lead Auditor

IAN BARRIE MURIE
16 Emerald Terrace
West Perth Western Australia
General Public Notary



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Principle 1 – Transport**Transport Cyanide in a manner that minimises the potential for accidents and releases.****Transport Practice 1.1:** *Select cyanide transport routes to minimise the potential for accidents and releases*

The operation is ☒ **in full compliance with**
☐ in substantial compliance with **Transport Practice 1.1**
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Transport Practice 1.1 requiring cyanide transport routes are selected to minimise the potential for accidents and releases.

FFT, in consultation with its supplier (Orica), its carriers Golden Coach Limited (GCL) and Mail Line Carriers Limited (MCL) and clients have implemented a procedure for the transport route selection to minimise potential for accidents and releases, in an environment where there are limited practical alternative transport routes.

The transport routes have been analysed for risks and restrictions and numerous actions were identified and implemented to improve safety. Drivers assess and report on conditions during each trip. FFT its clients and suppliers have consulted various stakeholders and applicable governmental agencies as necessary in the selection of routes and development of cyanide management measures.


The routes are routinely re-assessed as they are driven.

Convoys are used for every delivery as a means of managing the risks of the road conditions (traffic and people, poor road conditions). Each convoy is led by a support vehicle.

FFT largely manages its own emergency response. Mutual assistance programs with the mines supplement the emergency response capabilities of FFT.

In February 2008 the FFT HSE Cyanide Manager, FFT Senior Convoy Leader and Government Chemist Laboratory Agency (GCLA) Senior Chemicals Inspector conducted a road trip from Dar es Salaam to Mwanza to meet with emergency responders and support agencies along the various routes. These stakeholders were consulted on cyanide and advised of their roles during an emergency.

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FFT subcontracts the transport of cyanide to MCL and GCL under a Service Level Agreement. The Service Level Agreement requires MCL and GCL to comply with the ICMC. FFT have developed an audit protocol to assist in the subcontractor performance assessment.

Transport Practice 1.2: *Ensure that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment*

The operation is ☒ **in full compliance with**
☐ in substantial compliance with **Transport Practice 1.2**
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 1.2 requiring that personnel operating cyanide handling and transport equipment can perform their jobs with minimum risk to communities and the environment


FFT only uses trained and competent operators to drive its fork lift trucks within its Transit Yard.

Both GCL and MCL only use trained and competent operators to drive its trucks and the companies maintain files on their drivers that contain copies of licenses (heavy vehicle drivers licences) and training records. FFT maintains copies of the files on drivers used by its subcontractors.

There is no requirement in Tanzania for drivers to be licensed for dangerous goods transport. Despite this, all personnel from FFT, MCL and GCL operating cyanide handling and transport equipment have been trained to perform their jobs in a manner that minimises the potential for cyanide releases and exposures. The training of cyanide handling and transport equipment operators is coordinated by FFT.

Interviews with drivers at FFT, MCL and GCL indicated that all FFT and subcontractor personnel operating cyanide handling and transport equipment are competent to perform their jobs in a manner that minimises the potential for cyanide releases and exposures.

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Transport Practice 1.3: *Ensure the transport equipment is suitable for the cyanide shipment*

The operation is ☒ **in full compliance with** **Transport Practice 1.3**
☐ in substantial compliance with
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 1.3 requiring that transport equipment is suitable for the cyanide shipment.

FFT and its subcontractors MCL and GCL only use equipment designed and maintained to operate with the design loads.

FFT has procedures in place to verify the adequacy of the equipment for the load it must bear and its fitness for purpose. FFT performs daily vehicle checks, which are documented. MCL and GCL subcontractors also have routine maintenance schedules and ad hoc maintenance procedures that include checks for structural problems on the vehicles. Both MCL and GCL maintain records of vehicle specifications and maintenance history.

FFT has procedures in place to prevent overloading of the transport vehicles being used for handling cyanide. MCL and GCL trucks and trailers were purchased to a design specification appropriate for the cyanide transport task. Both MCL and GCL have sufficient vehicles to ensure that no other vehicles are used. In addition, the load limits of the containers, the axle loadings allowed for the vehicles and the vehicle design specifications ensure that the vehicles will not be overloaded.


Transport Practice 1.4: *Develop and implement a safety program for the transport of cyanide.*

The operation is ☒ **in full compliance with** **Transport Practice 1.4**
☐ in substantial compliance with
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 1.4 requiring the operation develop and implement a safety program for transport of cyanide.

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FFT has procedures to ensure that the cyanide is transported in a manner that maintains the integrity of the packaging.

Placards are used by FFT to identify shipments as cyanide and the company applies the principles of the United Nations Model Regulations for Transport of Dangerous Goods and the Australian Dangerous Goods Code.

Equipment consists of road vehicles (semi-trailers) that were purchased to a design specification appropriate for the cyanide transport task. FFT has developed a Safety Program which is implemented in conjunction with its subcontractors MCL and GCL. It includes: vehicle inspections prior to each shipment, preventive maintenance activities, limitations on driver hours of operation, procedures to prevent loads from shifting, procedures for modifying or suspending travel during severe weather, and drug abuse prevention. Records are maintained for all aspects of the Safety Program.

Transport Practice 1.5: *Follow international standards for transportation of cyanide by sea and air.*

The operation is	<input checked="" type="checkbox"/> in full compliance with	Transport Practice 1.5
	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

Standard of Practice 1.5 is NOT APPLICABLE to FFT.

FFT do not transport consignments of cyanide by sea or air within the scope of this audit.


Transport Practice 1.6: *Track cyanide shipments to prevent losses during transport*

The operation is	<input checked="" type="checkbox"/> in full compliance with	Transport Practice 1.6
	<input type="checkbox"/> in substantial compliance with	
	<input type="checkbox"/> not in compliance with	

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 1.6 requiring the operation track cyanide shipments to prevent losses during transport.

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FFT has effective means of communication with their transport vehicles. The communication systems include GPS, satellite and long-range cell phones which are continuously on. All communication equipment is checked prior to each delivery as part of the pre-trip check.

Communication risk areas do not exist on the transport routes used by FFT and its subcontractors.

FFT has systems to track the progress of cyanide shipments. FFT's subcontractors utilise a GPS system (which is continuously monitored) to track progress along the routes while FFT log convoy movements using telephone text messaging. All information is shared between the parties.

FFT have appropriate inventory controls and/or chain of custody documentation to prevent loss of cyanide during shipment. All trucks carry a material safety datasheet for sodium cyanide.

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Principle 2 – Interim Storage:

Design, construct and operate cyanide trans-shipping depots and interim storage sites to prevent release and exposures.

Transport Practice 2.1: *Store cyanide in a manner that minimises the potential for accidental releases.*

The operation is ☒ **in full compliance with** **Transport Practice 2.1**
☐ in substantial compliance with
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 2 requiring the operation store cyanide in a manner that minimises the potential for accidental releases.


FFT's New Ilala Transit Yard (Transit Yard) is located in a light industrial area with an access road running along the western boundary and the railway running along the eastern boundary. The site has signage indicating PPE requirements, and signage prohibiting smoking, open flames, eating and drinking at all entrances. Signs indicating the site is a cyanide depot and chemical storage area were visible on the main security gate.

The Transit Yard is secured by a block wall approximately four meters high and topped with a multiple strand electric fence approximately 1 m high. All cyanide IBCs are stored in locked and sealed containers. A security presence is on-site 24 hours each day.

The designated cyanide container storage area is located against the north-western wall which is separated from incompatible materials. Explosives are not stored within the Transit Yard.

The cyanide storage area has adequate secondary containment and a procedure surrounding the management of the containment drainage has been developed and implemented.

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Principle 3 – Emergency Response:**Protect communities and the environment through the development of emergency response strategies and capabilities**

Transport Practice 3.1: *Store cyanide in a manner that minimises the potential for accidental releases.*

The operation is ☒ **in full compliance with**
☐ in substantial compliance with **Transport Practice 3.1**
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 3.1 requiring the operation prepare detailed Emergency Response Plans for potential cyanide releases.

FFT has developed a Safe Work Procedures Manual containing the Freight Forwarders Group Cyanide Emergency Procedures (CEP) which covers the FFT Transit Yard and cyanide incidents between the Port of Dar es Salaam gate (ex-customs) to customer mines in Tanzania.

The CEP is specifically drafted around solid cyanide as it is the only material transported. The CEP considers site specific conditions and the design of the transport vehicles and storage facility.


The emergency response approach detailed within the CEP is flexible enough to accommodate and describe the response actions to be taken for the types of potential release scenarios identified. The CEP contains sufficient procedural information to allow these actions to be conducted and details persons responsible to undertake the actions.

The CEP identifies the roles and responsibilities of outside medical facilities, police, mine emergency response teams, the manufacturers' emergency response services, and relevant contact details are specified.

Outside responders, have been advised of their designated responsibilities. Communities do not have a designated a role in the CEP.

Orica plays a significant advisory and technical role in the emergency response process in the event of a cyanide release. Orica has assisted in the development of the CEP.

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Transport Practice 3.2: *Designate appropriate response personnel and commit necessary resources for emergency response*

☒ **in full compliance with**

The operation is

☐ in substantial compliance with

Transport Practice 3.2

☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 3.2 requiring the operation designate appropriate response personnel and commit necessary resources for emergency response.


FFT provides emergency response training of appropriate personnel. At the time of the audit, FFT were implementing a new training program and a commitment was given by FFT that only people deemed competent under the new training system would be selected to drive and manage the convoys and participate in the Emergency Response Team.

The CEP contains descriptions of the specific emergency response duties and responsibilities of transport (FFT, GCL and MCL) and Transit Yard workers, as well as external responders.

Training requirements and training frequencies, including initial and periodic refresher dates are detailed within a Training Matrix and tracked by the HSE Cyanide Manager using Training Register. Training records and interviews confirmed that the training was conducted and indicated knowledge of emergency response procedures.

FFT maintains two containers of emergency response and PPE equipment, one is taken on each convoy and one remains in the Ilala New Yard for emergencies within the Ilala New Yard or possibly mobilised to an incident along the route if required. PPE and emergency response equipment is also located on each truck used on the convoy. Emergency response checklists focus on the serviceability of the equipment as well as its presence. All equipment is inspected regularly.

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Transport Practice 3.3: *Develop procedures for internal and external emergency notification and reporting*

The operation is ☒ **in full compliance with** **Transport Practice 3.3**
☐ in substantial compliance with
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 3.3 requiring the operating develop procedures for internal and external emergency notification and reporting.

Communication procedures and contact information for notifying the producer, receiver/consignee, transport subcontractors, regulatory agencies, emergency services of an emergency are all contained in the CEP. It contains information on contact names and positions within the respective organisations as well as office numbers and mobile numbers.

The document history section of the CEP details the date of publication, previous revision number, new revision number and a description of the revision. The CEP was last reviewed (Revision 6) on 1 February 2008.

Transport Practice 3.4: *Develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment chemicals*


The operation is ☒ **in full compliance with** **Transport Practice 3.4**
☐ in substantial compliance with
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 3.4 requiring the operation develop procedures for remediation of releases that recognise the additional hazards of cyanide treatment.

FFT's CEP contains procedures and information for remediation including recovery or neutralisation of solutions and solids, decontamination of soils or other contaminated media and management and/or disposal of spill clean-up debris. The CEP subscribes to the recommendations of the International Cyanide Management Code in that no chemicals are to be added to a flowing waterway in the event of a cyanide spill as these may only exacerbate the situation with their own toxicity characteristics.

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Transport Practice 3.5: *Periodically evaluate response procedures and capabilities and revise them as needed*

The operation is ☒ **in full compliance with** **Transport Practice 3.5**
☐ in substantial compliance with
☐ not in compliance with

Summarise the basis for this Finding/Deficiencies Identified:

FFT is in FULL COMPLIANCE with Standard of Practice 3.5 requiring the operation periodically evaluate response procedures and capabilities and revise them as needed.

The CEP contains provisions for periodically reviewing and evaluating the CEP's adequacy and they are being implemented. The document history section of the CEP details the date of publication, previous revision number, new revision number and a description of the revision. The HSE Cyanide Manager is required to coordinate a review the CEP annually at a minimum, and after incidents, emergencies, emergency exercises and transportation audits and assessments that resulted from or affected the transportation of cyanide:

The CEP specifies table top emergency response exercises where specific emergency response procedures are tested are planned to be conducted every three months. Emergency response drills where one specific aspect of the CEP is evaluated at a time are planned to be conducted every six months. Full scale incident scenarios where the CEP is tested through a mock emergency involving FFT and external parties is planned every three years.

FFT conducted a mock emergency drill on 5 April 2008 involving a "man down" scenario in the Transit Yard. On 8 April 2008, FFT also conducted a drill to check communication systems. Mock Emergency Drill Reports were produced for both scenarios and the reports included observations and a corrective action plan. The corrective action sections included a requirement to review the CEP in light of the drills.


GOLDER ASSOCIATES PTY LTD



Edward Clerk
Manager Mining Environmental Services

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