

**FORTH ESTUARY TRANSPORT AUTHORITY
MAIN TOWER TEMPORARY ACCESS PLATFORMS – NORTH TOWER ABOVE DECK
RECORD OF THOROUGH EXAMINATION – JUNE/JULY 2011**

Equipment Description:

The main tower temporary access platforms provide access to the main tower – in the configuration covered by this record the platforms are erected on the north tower above the roadway – protection from falling objects is provided by a “Dropped Object Canopy” (*out with the scope of this thorough examination*). The platform system comprises 3 main units:- East Leg platform, central Portal platform and West Leg platform. Feeder cradles and associated docking stations form part of the Leg platforms. All 3 main units are suspended by wire rope hoists from lifting beams fixed to the top of the tower structure, with associated safety devices and separate safety ropes.

At the time of this Thorough Examination the tower access platform system was suspended just above the Dropped Object Canopy.

The platforms were supplied by ALPS (UK) Ltd. The platforms are owned by the Forth Estuary Transport Authority. Prior to re-assembling the platform system at the north tower a number of improvement modifications were carried out.

Safe Working Loads: (Normal Operating Conditions)

Complete platform system:	Maximum of 8 men, subject to following:-
East and West Leg Platforms:	4 men per Leg platform at any position, inclusive of load in Feeder Cradle
Portal Platform:	4 men plus 40 kg materials at any position
Feeder Cradles:	4 men per cradle

Load Tests:

1. Load test 6 no lifting beams at top of tower : 6 tonne applied at the end of each beam
2. Load test Portal Platform : 600 kg applied at various locations
3. Load test East Leg Platform : 600 kg applied at various locations
4. Load test West Leg Platform : 600 kg applied at various locations
5. Load test East Feeder Cradle : 540 kg in cradle + ballast representing rope and cable weight
6. Load test West Feeder Cradle : 540 kg in cradle + ballast representing rope and cable weight

Date of Completion of Thorough Examination: 1 July 2011

I hereby declare that the above particulars are correct and the Thorough Examination of the platforms and lifting beams, based on visual examination, was carried out and were found to be free from any defect likely to affect safety. The thorough examination was restricted to those parts of the platforms and lifting beams, accessible from within the hand railing on the platforms and at the top of the tower and from the dropped object canopy.

Further supplementary information is provided in the attached Appendix, which forms part of this Record of Thorough Examination.

Name: _____ Signature: _____ Date: 4 July 2011

For and on behalf of Charles Scott & Partners, 9 Park Quadrant, Glasgow

In addition, a Thorough Examination of lifting gear associated with the Main Tower Temporary Access Platforms, including Tirfors, Tiraks, Blocstops, wire ropes, shackles etc. was carried out by HSB Houghton ; these thorough examinations carried out between 20 – 28 April 2011. FETA have collated copies of various certificates associated with lifting gear – see notes in Appendix. The thorough examination of the feeder cradles Tirak hoists, Blocstops and wire ropes was carried out in June 2011 – records of thorough examination not yet filed in FETA master file of records.

Tractel Records of Thorough Examination for the 4 no. “Derope” escape equipment are dated 2/6/11.

Date of Next Thorough Examination:

Lifting Gear associated with Platforms : Thorough examination to be completed on or before 20 September 2011 if platform still in use on north tower.

Platforms in General : Thorough examination to be completed on or before 4 January 2012, if platform still in use on north tower.

If platform system lowered back onto DOC before these dates, then Thorough Examination required before platform brought back into service.

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APPENDIX**

This appendix supplements the Record of the Thorough Examination carried out on the temporary tower access platforms, by Charles Scott and Partners, acting on behalf of the Forth Estuary Transport Authority.

The key documentation on which this test and thorough examination is based comprises:

Method Statements covering the erection and testing of the platform

Operating Instructions for the Platform.

Beeche Systems Corporation drawings provided by ALPS (UK) Ltd and supplementary drawings produced by Charles Scott and Partners

HSB Haughton Records of Thorough Examination for Hoists, Blocstops and associated wire ropes.

Equipment

The platform system was supplied by ALPS (UK) Ltd in 2002 and was used below the bridge deck on the north and south towers, prior to being removed and put into storage in 2004. The platform system was brought out of storage and re-erected on the south tower, above the bridge deck in 2006, with some minor modifications to suit the slightly different configuration above the bridge deck. Following an incident in high winds in 2008, improvement modifications have been carried out to the Portal Platform Infill flooring system.

In addition, tower mounted brackets have been included to provide lateral restraint to the Leg Platform hoist and safety ropes and a system of rope clamps is used on the Portal Platform to minimise possible effects of wind on Portal Platform ropes.

Alternative designs for which ALPS (UK) Ltd or Access Lifting Pulling & Safety Limited are not responsible, have been adopted for the following:

- Lifting Beams fitted at top of tower:
- Replacement Infill flooring for Portal Platform:
- Docking Platform lower stabiliser wheels:
- Feeder Cradle suspension beam anchor brackets: *All items designed by Charles Scott & Partner & manufactured by FETA.*
- A hose reel forming part of the water supply system to the power washer is fitted to one of the Leg Platforms:
- Lateral Rope restraint systems:
- Leg Platform vertical rope restraint system and local access platform on Leg Platforms:

Design Certification of Modifications 2010 - 2011

A series of improvement modifications, referred to above, carried out in 2010 – 2011, have been subject to a Category 3 independent design check : These modifications are defined in an Approval In Principle document, “*Design Approval in Principle, Main Tower Access Platform Improvements for 2010/2011*”.

Certification Associated with Lifting Gear

FETA staff have collated various certificates associated with lifting gear, provided by Access Lifting Pulling & Safety Limited and HSB Haughton (Insurer). The following is noted as a result of a brief review of the certification documents:

It is noted that certificates for the Maxiflex 16.3 mm diameter wire ropes, in use on the Tirfors and Blocstops refer to a SWL of 3,200kg This is the nominal value used for lifting purposes and is not the SWL figure for man riding applications. Similarly the certificates for the hydraulic Tirfors refer to a SWL of 3,200 kg. Note that for use on the portal and leg platforms, SWL of the Tirfor hoists is considered to be 2,400 kg.

The HSB Haughton records for thorough examination of the Tirfor hoists note that SWL is 2,400 kg.

The lifting gear certification package also includes a Tractel Declaration of Conformity indicating that the guaranteed minimum breaking load of the Maxiflex 16.3mm diameter rope is 19, 584 kg. This document refers to a test date of rope reel of 3/06/08. It is noted that the new replacement Maxifex ropes were fitted to the platform prior to this date.

Clarification required on whether this Declaration of Conformity actually applies to the replacement ropes fitted in 2007.

Safe Working Loads (or Working Load Limits)

In clarification of the safe working loads for the platform, the SWL values are governed by the Working Load Limit of the hoists of 2,400kg per hoist and also the self-weight of the platform structures and their associated equipment.

The 8 man maximum SWL refers to the total maximum load permitted on whole platform system at any time. Further conditions to this are

- that at no time must the load on the Portal Platform exceed 4 men plus up to 40kg of materials (i.e. a total of 400 kg)
- that at no time must the load on the East or West Leg Platform exceed 4 men (i.e. a total of 360 kg). The Feeder cradles are considered part of the Leg Platforms and the SWL of the Leg Platforms refers to the total load on a leg platform, inclusive of the load in Feeder Cradle ; i.e. it is NOT permissible to have 4 men on a Leg Platform and 4 men in its Feeder Cradle.

In addition to the Safe Working Loads acting on the Leg platforms, there is an additional capacity to carry up to 100 kg of equipment or materials providing such equipment and materials are positioned directly adjacent to the inner hoists (i.e. hoists nearest Portal platform), except at the NE corner of the West Leg platform due to the hose reel which is fitted there.

The weight of one man in the SWL values is assumed to be 90kg.

LOLER

It is considered that the thorough examination has been carried out in accordance with the requirements of The Lifting Operations and Lifting Equipment Regulations 1998 (LOLER), in particular with regard to Regulation 9 and Schedule 1 relating to thorough examination and records of thorough examination.