Event Structures
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Humber Bridge
Event lighting installation

Document level	3 & 4
Project	Hull 2017 Humber Bridge LED – Test install 1
Job number	10851
Client	Hull 2017 (Enterprises) Limited
Issued date	08.08.2016
Status	Live
Version Number	001
Authors	D Walsh, A Wright
Authorising Signature	R Barrett

CHAS Accredited Contractor

Health & Safety Management System

OHSAS 18001 Certification – Intertek – UKAS Management Systems 014

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DOCUMENT PROCESS

The principal activities of the company are the provision of rigging, stages, grandstands, other temporary structures and design services to indoor and outdoor events.

This requires the supply and operation of a significant number of different products, in sometimes challenging environments across the world.

To ensure that Health and Safety documentation remains focussed, relevant and up to date the company has developed a hierarchical approach that cascades down through four levels:

Level 1 **Policies and Charters**
This sets out the company's over-arching strategies and is intended for use by directors and senior managers

Level 2 **Companywide arrangements for H&S**
Provided by operational divisions (such as Transport, Warehousing, Yard Operations etc).
These are intended for use by Senior Managers, Project Managers and Crew Chiefs.

Level 3 **Product Specific Technical & Safety Packs**
These include Risk Assessments and Method Statements. The creation of this tier of documents is based on our view that it is not possible or desirable to separate product specific technical and safety information.
These are intended for use by on-site Project Managers, Crew Chiefs and (critically) by outside organisations who have to work alongside us at events.

Level 4 **Safe System of Work sheets (SSoW)**
These are deliberately written in plain English and frequently illustrated. They provide safety critical information to all staff, regardless of the length or status of their work for/with us.

Company Codes and Guidance
These provide further details and interpretation on our procedures for ensuring compliance with our HSMS (Health & Safety Management System)

Information Gathering

Our management of Health & Safety generates data from a combination of:

- Safety audits
- Inspections
- Tours of work premises
- Crew Chief reports and crew feedback

This is collated and assessed by our Health & Safety Committee and used to modify documents in all four levels. Information is reviewed by the Board of Directors on a regular basis

This is a combined Level 3 and Level 4 document.

SCOPE

Temporarily fix 5 strings of festoon lighting to 5 of the 'hangers' which are the 62mm diameter steel wires that suspend the roadway from the main suspension cables of the Humber Bridge.

The bridge runs north to south across the River Humber. There are two main support towers, the Hessle Tower on the north bank and the Barton tower on the south side. The bridge offices and service yard are at the north end of the bridge, adjacent to the south-bound carriageway on the east side of the bridge. The bridge is a dual carriageway with two lanes in each direction. The footpath to either side can be accessed by small vans etc.

It is not technically possible to shut down one whole side and run a contra-flow on the other side, so we will do this on a single lane closure. We can only shut down a carriageway between the hours of 09:00 and 16:00, with the install and removal of the traffic management (TM) having to be done within this window as well.

For the purposes of the test, the lights will be rigged on the east facing side of the bridge (southbound lane-closure), adjacent to the (southerly) Barton tower

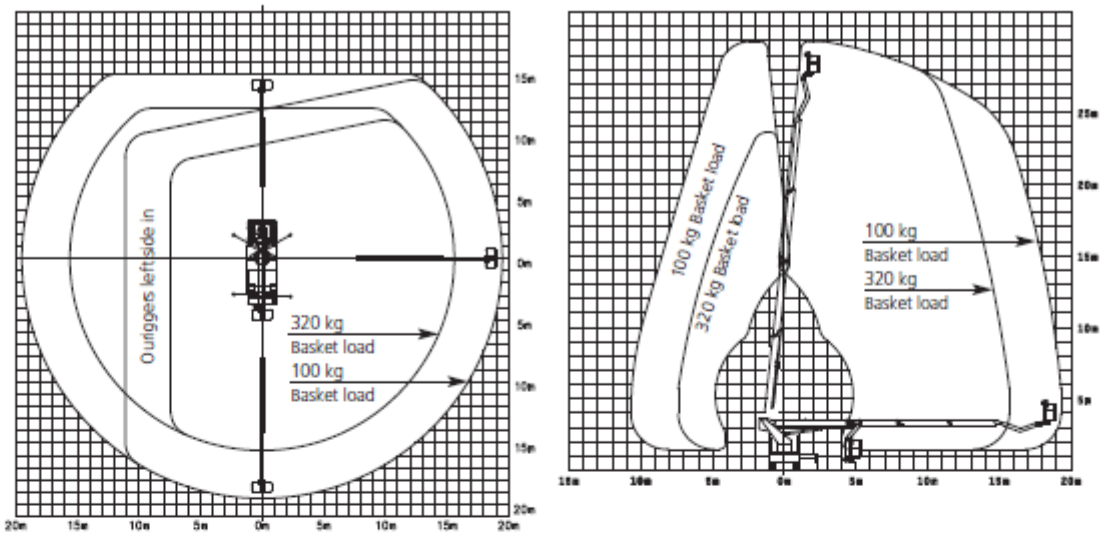
METHOD STATEMENT

1) Assemble at the service yard of the Humber Bridge Board
2) Liaise with client and traffic management contractor to set out the lane closure 'blister' in the correct location
3) Once set out, our truck mounted picker with supplier operator and one van from us will be deployed to the blister.
4) The east footpath to be closed
5) One additional van to be deployed on the footpath adjacent to the blister
6) Crew to wear suitable highways hi-viz in accordance with TM Contractor local rules
7) Picker to deploy on short-duty outriggers, within the lane width (so no outreach permitted)
8) Power to be sourced from the nearest tower or a small generator (TBC)
9) Each festoon and feeder cable to be powered up on the footpath to ensure it works
10) One 15m long LED festoon and cable-ties to be placed in the picker
11) Top of festoon to be attached at 30m above road-deck level with 1 cable tie above and below each LED housing (which are at 250mm centres)
12) The unattached portion of the festoon must remain in the picker basket during deployment
13) After the full 15m is attached, the picker returns to road level and takes up the top end of the feeder cable. The lower end of the feeder cable to be controlled by ground crew to ensure it cannot blow free across the live carriageway.
14) The top of the feeder cable is attached to the bottom of the festoon and then cable tied to the hangar at maximum 1m intervals (for the purposes of this test) until it is secured down to deck level.
15) That process is repeated at the 4 adjacent locations
16) All 5 feeder cables are connected to the mains powered control unit and checked that everything works.
17) Van to be removed from the east walkway (TBC)
18) Exit the TM in a southerly direction and follow the highway off the bridge until it is possible to turn round and cross the bridge in a northerly direction. Return to the service yard.
19) TM crew remove the TM

Crew and picker to remain on standby in local hotel. If any issues the TM will be put back in (in the daytime window or over-night) to sort it out.

Removal is essentially the same in reverse, except the logical removal is to work from the top down, recovering the festoon and feeder cable into the picker basket so there is never any loose cable to blow about.

WT 300 Working range



Technical Data

Specifications of basic model

Max. working height	30 m
Max. basket floor height	28 m
Max. horizontal outreach / with workman basket	19.50 m / 100 kg

Workman basket

Dimensions of the standard workman basket (B x L x H)	1.60 x 0.80 x 1.10 m
Slewing range of basket	2 x 80°
Max. permissible load	320 kg
Motor Engine Start/Stop in the workman basket	standard
Synthetic cover on control panel	standard
230 V CEE outlet in the workman basket	standard
Anchor points to secure safety belt	standard
Electronical controlled proportional remote control	standard
Graphic display	standard
Collision protection for basket and jib boom	standard
24 V socket in the workman basket	standard
Basket interchange system	standard
Overload control in the workman basket	standard

Boom system

Number of extensions	3
Self centering system	standard
All power guides and hydraulic and mechnanical equipment internally routed and optimally protected against damage	standard
Hydraulic jib boom, working range	195°
Automatic transport locking device for jib boom	standard
Automatic return of main boom to transport position "Home Function"	standard

Slewing system

Slewing within mirror width	standard
Slewing range	540°

Stabilizers

Function of the stabilizers	partial variable, H-type
Min. stabilizer spread – all outriggers in	2.50 m
Max. stabilizer spread – both sides horizontally extended	5 m
Stabilizer control from the workman basket	standard
Max. permissbile inclination 2°	standard
4 Safety plates	standard
Half automatic stabilizing	standard
Permanent ground pressure control	standard

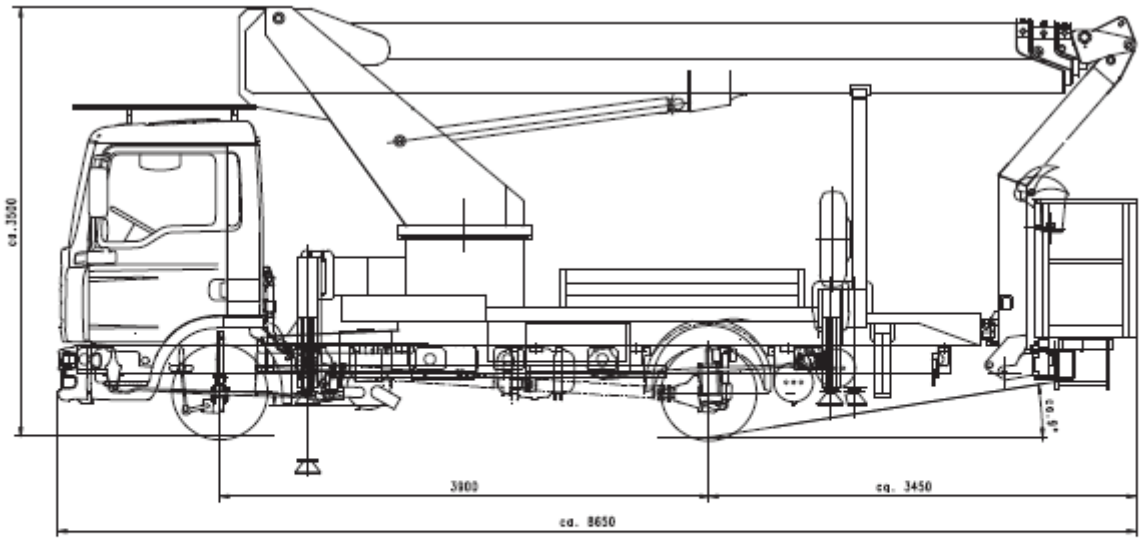
Carrier vehicle and installation

GVW class	7.49 t
Length in transport position	8.65 m*
Width in transport position	2.50 m*
Height in transport position	3.50 m*
Angle of slope	approx. 9° *
Hydraulic oil tank with return line filter	standard

*) depending on carrier vehicle

Manual and emergency controls

Integrated in the body – well-protected and lockable	standard
Emergency lowering system in the basket	standard
Back-up/Emergency control at the base	standard
Protection for cabin of chassis	standard



PALFINGER
www.palfinger.com

The access platforms reproduced here are partially equipped to order and may not always correspond to standard models. Specifications non-binding. Subject to technical modifications. Errors, including those in translation, excepted.

RISK ASSESSMENT
Humber Bridge - Event lighting installation

		Severity – *What Type of Injury Could Occur?*				
		1 Negligible	2 Minor	3 Moderate	4 Major	5 Catastrophic
Likelihood	1 Rare	1	2	3	4	5
	2 V Unlikely	2	4	6	8	10
	3 Possible	3	6	9	12	15
	4 Likely	4	8	12	16	20
	5 V Likely	5	10	15	20	25

HAZARDS How can harm or loss occur and to whom	⇨	CONTROLS How do we reduce the risk	⇨	RESIDUAL RISK The risk after the specified controls are in place
CONTACT WITH MOVING VEHICLES, PEDESTRIANS, BRIDGE STRUCTURE **Crushing injuries** **Major injury** **Crew members** **Contractors** **General Public** **Bridge Damage**	⇨	• Follow Client, TM Contractor and Humber Bridge local rules/Permit to Work • The east footpath to be closed • Appropriately secure/isolate MEWP when not in use • Hi Viz to be worn in accordance with TM Contractor rules • All damage to be reported to Client representative	⇨	**Severity 2 x likelihood 4 = Risk 8**
INSTABILITY OF MEWP OVERTURNING **Crushing injuries** **Major Injury** **Crew members** **Contractors** **General Public**	⇨	• Use Mobile Work Elevated Platform if competent to do so. • Ensure appropriate documentation is provided & correct from hire company • Follow manufacturer's instructions • Adhere to the manufacturer's instructions for maximum ground gradient parameters • Ensure the ground is suitable to support MEWP with the anticipated load/task. Confirm no underground features that could be disturbed. • Use load spreading devices to ensure firm base for MEWP outriggers, avoid manhole covers, drain gullies etc. • Use suitable ground protection when necessary • Reference manufacturer's instructions for basket Safe Working Load when lifting equipment to & from elevated work site.	⇨	**Severity 4 x likelihood 2 =Risk 8**
CONTACTING ENERGISED POWER LINES **Electrocution** **Major Injury** **Crew members** **Contractors**	⇨	• Do not work in the vicinity of energized power lines • If overhead power lines are in the planned area of work, contact the Client to de-energize / isolate power lines.	⇨	**Severity 4 x likelihood 2 = Risk 8**
CONTACT WITH OBSTRUCTIONS **Crushing injuries** **Major Injury** **Crew members** **Contractors**	⇨	• Operators assess all projections/obstructions that could be contacted by themselves or the machine. • When possible remove obstructions • When possible use a different route to avoid obstructions • Assess the requirement to use a banksman • Do not lean over the platform whilst moving • Avoid distractions such as use of the mobile phone on moving platform	⇨	**Severity 4 x likelihood 2 = Risk 8**

RISK ASSESSMENT CONTINUED
Humber Bridge – Event lighting installation

HAZARDS How can harm or loss occur and to whom	⇨	CONTROLS How do we reduce the risk	⇨	RESIDUAL RISK The risk after the specified controls are in place
DROPPED OBJECTS **OBJECTS BLOWN FROM WORK SITE** **Major injury** **Crew members** **Contractors** **General Public** **Damage to marine vessels**	⇨	• No outreach permitted • Appropriately secure all work equipment whilst on bridge. • Appropriately barrier with warning signs area around MEWP and underneath work at height in accordance with local rules • Appropriately secure loads onto basket when lifting equipment to & from elevated work site. • Good levels of housekeeping • Any items blown overboard to be reported immediately to Client representative	⇨	**Severity 4 x likelihood 2 = Risk 8**
HYDRAULIC MALFUNCTION **Major injury** **Hydraulic fluid injection** **Hydrocarbon loss of containment** **Unintended lowering of platforms** **Crew members** **Contractors**	⇨	• Appropriate inspection & maintenance checks of hydraulics • Hydraulics to be operated by competent personal • If hydraulic oil is injected into crew members seek immediate medical assistance • Appropriately bund /contain any oil spill	⇨	**Severity 4 x likelihood 2 = Risk 8**
FALLS FROM HEIGHT **Major injury** **Crew members** **Contractors**	⇨	• Appropriate fall protection PPE to be worn and suitably anchored. • Exiting the basket at height is strictly prohibited • The work at height rescue plan will be for the ground crew member to; Raise the alarm Isolate dangers Address the needs of the casualty in line with First Aid training Lower MEWP boom Hand over casualty to paramedics, or transport to hospital depending on needs of casualty Isolate and quarantine ALL equipment	⇨	**Severity 2 x likelihood 4 = Risk 8**
FUEL SPILLAGE IGNITION, ENVIRONMENTAL POLLUTION **Plant operators**	⇨	• Follow site refuelling instructions • Fuel bund sited in an area protected from potential vehicle collision • Only use designated refuelling areas • Spill kits to be in place prior to fueling activities • Control ignition sources – no smoking, hot work or open electrical circuits in the vicinity of refuelling activity • Impervious gloves to be worn during refueling	⇨	**Severity 4 x likelihood 2 = Risk 8**
CONTACT WITH ELECTRICTY **Major Injury** **Electric shock - Fatality** **Crew Members** **Contractors**	⇨	• Competent person to visually inspect all electrical equipment prior to use • Prove dead prior to accessing circuits • Confirm residual current devices are operational pre-use and daily • No unauthorised modifications • Low Voltage electricity to be used	⇨	**Severity 4 x likelihood 2 = Risk 8**

Crew competencies

For the purposes of this test installation there are only 3 crew (excluding TM and bridge staff).

Roger Barrett
Project Director
Providing ground crew role

Competencies
CSCS - PQP (Professionally Qualified Person)
Technician Member - IStructE
Specialist Member – International Institute of Risk & Safety Management

Damian Walsh
Rigging Technical Manager
Providing Up-rigger role

Competencies
IRATA Level 3
IRATA Rescue Supervisor
NRC3 (National Rigging Certificate)

Ben Connolly
MEWP Operator

Competencies
IPAF PAL

Insurance cover
(Individual certificates available on request)

integro
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Star Events Limited
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MK44 2DF

30 April 2015

Dear Celine,

We thank you for your instructions and confirm that insurance cover has been arranged for you as follows:

Cover Type	Entertainment Elite Combined Liability & All Risks Policy - Employers Liability £10,000,000 - Public & Products Liability £2,000,000
Insurer	Allianz Insurance Plc
Policy Number:	**SZ/23159833/01426**
Period of Cover:	1st May 2015 to 31st August 2016, both dates inclusive

Cover Type	Excess of Public/Products Liability Policy - Public & Products Liability £8,000,000 (over primary £2,000,000)
Insurer	CNA Insurance Company Limited
Policy Number:	**PC631527**
Period of Cover:	1st May 2015 to 31st August 2016, both dates inclusive

Cover Type	Excess of Public/Products Liability Policy - Public & Products Liability £10,000,000 (over primary £10,000,000)
Insurer	QBE Insurance (Europe) Limited
Policy Number:	**YO56745QBE0115A**
Period of Cover:	1st May 2015 to 31st August 2016, both dates inclusive

Cover Type	Professional Indemnity Insurance
Insurer	CNA Insurance Company Limited
Policy Number:	**10166611**
Period of Cover:	30th April 2015 to 31st August 2016, both dates inclusive

The policy documentation is now being prepared and I expect most of this to be with you today, but if there are any further queries in the meantime please do not hesitate to contact us.

Kind regards,

Gary Brooks Cert CII
Telephone: (0161) 419 3089
gbrooks@doodsonbg.com

Humber Bridge – Event lighting installation

L4 SSOW completed by:	Adam Wright Group Health and Safety Manager	Date:	05.08.2016

Person in charge of this activity		
Date	**Name**	**Signature**

All members of the crew completing this task to sign the work party declaration below to confirm they have read, understood and agree to follow this L4 SSOW					
Date	**Name**	**Signature**	**Date**	**Name**	**Signature**

SHOULD YOU DISCOVER ANY OTHER HAZARD OR RISK ASSOCIATED WITH THIS TASK OR IF YOU'RE UNSURE NOTIFY YOUR SUPERVISOR

De-Brief – To be completed after the activity by the person in charge & forwarded to SEL H&S Manager
Any lessons learned?