

Risk Assessment - Vintage Steam Equipment Showman's Engine

Identifying Mark:	Reg No:	Makers No:
Equipment Description:	
Assessment Location:	Various locations where members of public are present	
Owner/Operator:	
Assessor	As above	
Date of Assessment:/...../.....	Ref No:
Reassessment Date:	Anniversary of Date of Assessment – (see also Addendum)	

Potential Hazard	Control Measures
<p>1. Steam raising system – Risk of inadvertent escape of steam, scalding, burns injury to operator and members of public</p>	<p>All hot pipework and fittings, lagged where appropriate</p> <p>The boiler control system includes water level indicators, calibrated pressure gauge, boiler feed water injectors, mechanical feed pump, calibrated safety valves and a fusible plug. Where practical all safety devices are operated under test at least once during each operating cycle of the plant. In order to suppress sparks and ash emissions a 'spark arrestor' is fitted to the chimney.</p> <p>The boiler pressure parts, safety equipment and joints and seals are inspected annually by a competent person (per NTET Code of Practice for Engine Owners) – reports available for inspection</p> <p>The boiler is maintained as per guidelines in the NTET Code of Practice for Engine Owners</p> <p>The operator is fully familiar with all aspects of control and management of the steam raising plant or is working at all times under the close supervision of a competent person</p> <p>Residual Risk – Low</p>
<p>2. Mechanical and Rotating parts - Risk of entrapment</p>	<p>The integral design of the 'engine' utilises an open crank assembly with associated piston rods, linkages and eccentric driven valve gear all of which are mounted high on the top of the boiler structure and extend into the area protected by the construction of the exterior of the firebox top and by motion gear enclosures. Road gears are encased in guards.</p> <p>Any wire rope equipment is tethered to prevent accidental unwinding of the rope.</p> <p>When the 'engine' is used to drive the 'smoke box' mounted dynamo via a belt from the flywheel to the dynamo pulley, a flange, fitted to the dynamo pulley, assists in preventing the belt from slipping off the pulley while in motion. Also the rear road wheel extends across the lower part of the flywheel by approximately of the flywheel surface area; this assists with preventing the flywheel from slipping off the flywheel.</p> <p>'Scotches' are applied as necessary to the rear wheels(s)</p>

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Potential Hazard	Control Measures
	<p>to reduce a potential hazard from movement of the 'engine' while driving the dynamo.</p> <p>In addition the engine operator and assistant(s) monitor and assist the public to maintain a safe distance from the 'engine' while it is operating. These measures are used to prevent and/or reduce potential injury to the operator and the public.</p> <p>The operator is fully familiar with all aspects of control and management of the 'engine' or is working at all times under the close supervision of a competent person.</p> <p>As an additional measure, and following consultation with the incumbent event safety officer, use of suitable temporary barriers and/guards will be considered and erected as necessary to protect the public.</p> <p>Residual Risk – Low</p>
<p>3. Self propelled 'engines' - Risk of inadvertent contact with a Third Party causing property damage or physical injury to operator or member of public</p>	<p>The operator is fully familiar with all aspects of control of the 'engine' and is the holder of a category 'B' class licence. An operator who is not familiar with this type of engine will be closely supervised at all times.</p> <p>Movement of the engine will only be undertaken with the express permission of the incumbent safety officer. Where appropriate to the manoeuvre being undertaken or because crowd densities are deemed to be high by the incumbent safety officer a 'flag man' may precede the engine to warn of its approach. A pair of 'scotches' is carried to block the engine when parked up or when changing gear. Usually the engine is crewed by two persons working as a team.</p> <p>The engine may be used to tow a trailer in which case draw pins will have securing devices fitted and also a pair of 'anti-runaway' chains will be securely connected between the engine and the trailer.</p> <p>Occasionally unlicensed people, including young people and members of the Steam Apprentice Club, will be allowed to steer the engine when conditions (including low crowd density) permit. In such circumstances the operator will be fully licensed and will instruct the 'pupil'.</p> <p>Additional, practical, safety measures may be taken following discussions on concerns by an 'Incumbent Event Safety Officer'.</p> <p>Residual Risk – Low</p>

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Potential Hazard	Control Measures
<p>4. Electrical Power Generation –</p> <p>a) Risk of inadvertent electric shock</p> <p>b) Risk of tripping hazard or damage to members of public or operators or third party property caused by cables laid from the 'engine' equipment using power source</p>	<p>a) The 'engine' may be used to generate electrical power from the dynamo via a belt. The output from this source is 110v DC thus minimising the risk of electric shock. Therefore the terminals used on the 'connection panel' of the generator to couple the cables are openly accessible</p> <p>b) The length of cables connecting between the 'engine' and the driven apparatus are kept as short as is practical. Where appropriate, or required by the incumbent event safety officer, the cables will be buried or covered</p> <p>Residual Risk - Low</p>
<p>5. Notes</p>	<p>The above apparatus is comprehensively insured using a bespoke 'vintage steam' policy effected by The Insurance Policy Number is: This Road Traffic Act policy includes Public Liability cover for injury to third parties and property, boiler explosion, and sparks & ashes damage. This annual policy is issued only against the presentation of a current 'boiler inspectors' certificate of inspection that authorises continued use for a fixed period of time.</p> <p>A NTET Insurance Disc Number is displayed on the 'engine' to demonstrate that the test status and insurance are current and meet the NTET Code of Practice.</p>
<p>6. Overall Residual Risk</p>	<p>The Owner/Operator: hasyears experience in the maintenance and operation of steam road vehicles of the following type(s):</p> <p>Given all of the above and noting the safety factors built into the integral design of the equipment the Overall Residual Risk is considered to be Low.</p>
<p>7. Addendum</p>	<p>In addition this Risk Assessment shall also be reviewed under the following circumstances:</p> <ul style="list-style-type: none"> • Changes to applicable NTET Code of Practice, legislation and/or insurance requirements • Following any incident and/or accident <p>No additional requirements and/or changes to the above referenced documents have been identified during this review period</p>

This risk assessment was carried out by:

Signed : _____ Date : _____

*Owner/User/Other - state position _____
(*Mark or complete as appropriate)