# Plant Risk Assessments
## Fallshaw Wheels and Castors, Sunshine
## July, 2008

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## 1. Introduction

National Safety Council Australia (NSCA) was engaged by Mr Michael Calladine, Engineering and Quality Manager, Fallshaw Wheels and casters, to carry out Plant Risk assessments and guarding assessments on the following items of plant supplied by the company:

- The Liftmaster BLEH 12 and BEH 240

## 2. Report Scope

The scope of the report was limited to the identification of hazards associated with the design and manufacture of the plant. Hazards introduced by the method and environment in which the plant is used should be identified and assessed by the employer responsible for the workplace in which the plant is used.

## 3. Methodology

The methodology consisted of:

- A thorough examination of each item of plant
- A review of the documentation supplied by Fallshaw Wheels and castors with each item of plant.
- The application of Victorian WorkSafe Plant Hazard Checklist
- Comparison with the Australian Standard AS 4024.1 – 2006 Safety of Machinery

## 4. Key Findings

Key findings included the following:

### 4.1. The Liftmaster BLEH 12 and BLEH 240

The Liftmaster BLEH 12 and BLEH 240 has a pinch point where the lifting arm pivots on the main frame. A recommendation has been made to have this area guarded to prevent injury. Refer to the Risk Assessment at Appendix A. Minor recommendations have been included in relation to the safe operating procedure. These relate to the actual use by the end user and will assist them in operating the plant correctly.

Should require any further information, I can be contacted on 0409 995 593.

Graeme Nightingale
Principal Consultant
National Safety Council of Australia

## Appendix A: Plant Risk Assessment BLEH 12 and BLEH 2400

### PLANT HAZARD CHECKLIST

| | |
|---|---|
| ***Date:*** | ***18th August 2008*** |
| Assessment No.: | - |
| Plant/Asset No.: | - |
| Plant Name: | Liftmaster BLEH 12 and BLEH 240 |
| Plant Location: | Fallshaw Casters 2A Ayton Street, Sunshine |
| Description: | The Liftmaster BLEH is designed to lift 240 Litre and 120 litre Plastic wheelie bin and invert them so that the contents will run from the wheelie bin into a larger receptacle, such as a skip. The LBEH Liftmaster can be powered by a 12 volt battery or 240 volts. |

### Assessment Team:

| Name | Position |
|---|---|
| Graeme Nightingale | Principal Consultant – NSCA, Vic. |

### Notes:

- Consider the hazards in relation to the affect they may have on plant operators, anyone working, or in the near vicinity of the plant, visitors and contractors
- Consider the hazards for the Start Up, Operation, Cleaning, Maintenance, Shut Down, and Modification phases.
- Refer to the Victorian OHS Regulations (2007) and associated Code of Practice for Plant (1995) for specific details.
- If 'yes' is the answer to a question in the following checklist, the plant, parts of the plant and/or the situation associated with the hazard, should be identified on the checklist.

**The following information is based upon the Victorian WorkCover Authority Plant Hazard Check-sheet (1995).**

# PLANT HAZARD CHECKLIST

| A | ENTANGLEMENT | |
|---|---|---|
| 1 | Can anyone's hair, clothing, gloves, necktie, jewellery, cleaning brushes, rags or other materials become entangled with moving parts of the plant, or materials in motion? | **No**<br>All moving parts, with the exception of the actual lift device, are guarded. |

| B | CRUSHING | |
|---|---|---|
| 1 | Can anyone be crushed due to: | |
| a. | Material falling off the plant? | **No**<br>The bin is locked into the lifting device and is supported during the lift. It is also protected on each side by the rubbish chute. |
| b. | Uncontrolled or unexpected movement of the plant or its load? | **No** |
| c. | Lack of capacity for the plant to be slowed, stopped or immobilised? | **No**<br>Pendant control allows for full control of the plant. |
| d. | The plant tipping or rolling over? | **Yes.**<br>In the event where it is being operated on unstable ground or on a steep incline.<br>Safety notes on instruction recommend slopes no greater than 6 Degrees. |
| e. | Parts of the plant collapsing? | **No.** |
| f. | Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair? | **Yes.**<br>In the event where maintenance activities are being performed without first disabling the plant or if the maintainer is not qualified and trained to perform maintenance activities. |
| g. | Being thrown off or under the plant? | **No.** |
| h. | Being trapped between the plant and materials or fixed structures? | **Yes.**<br>In the event where an individual(s) puts there hand in the vicinity of the point where the frame and the bin lifting device pivots.<br>It is possible that an injury could happen in this fashion. The areas should be guarded to prevent such an accident. |
| i. | Other factors not mentioned? | **No** |

| C | CUTTING, STABBING & PUNCTURING | |
|---|---|---|
| 1 | Can anyone be cut, stabbed or punctured due to: | |
| a. | Coming in contact with sharp or flying objects? | **No.** |
| b. | Coming in contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair of the plant? | **No.** |

| C | CUTTING, STABBING & PUNCTURING | |
|---|---|---|
| c. | The plant, parts of the plant or work pieces disintegrating? | **No.** |
| d. | Work pieces being ejected? | **No.** |
| e. | The mobility of the plant? | **No** |
| f. | Uncontrolled or unexpected movement of the plant? | **No.** |
| g. | Other factors not mentioned? | **No.** |

| D | SHEARING | |
|---|---|---|
| 1 | Can anyone's body parts be sheared between two parts of the plant, or between a part of the plant and a work piece or structure? | **Yes.**<br>In the event where an individual(s) puts there hand in the vicinity of the point where the frame and the bin lifting device pivots.<br>It is possible that an injury could happen in this fashion. The areas should be guarded to prevent such an accident. |

| E | FRICTION | |
|---|---|---|
| 1 | Can anyone be burnt due to contact with moving parts or surfaces of the plant, or material handled by the plant? | **No.** |

| F | STRIKING | |
|---|---|---|
| 1 | Can anyone be struck by moving objects due to: | |
| a. | Uncontrolled or unexpected movement of the plant or material handled by the plant? | **Yes.**<br>If the plant were to move whilst lifting the wheelie bin. Instruction state that casters are to be locked prior to lifting. If instructions are followed the likelihood of such a hazard is highly unlikely. |
| b. | The plant, parts of the plant or work pieces disintegrating? | **No.** |
| c. | Work pieces being ejected? | **No.**<br>. |
| d. | Mobility of the plant? | **Yes.**<br>If the plant were to move whilst lifting the wheelie bin. Instruction state that casters are to be locked prior to lifting. If instructions are followed the likelihood of such a hazard is highly unlikely. |
| e. | Other factors not mentioned? | **No**. |

| G | HIGH PRESSURE FLUID | |
|---|---|---|
| 1 | Can anyone come into contact with fluids under high pressure, due to plant failure or misuse of the plant? | **Yes.**<br>In the event where a high-pressure hydraulic hose(s) bursts when the plant is in operation. Pressure is low and a burst hose protection valve is fitted. The risk of injury is low in these circumstances. |

| H | ELECTRICAL | |
|---|---|---|
| 1 | Can anyone be injured by electrical shock or burnt due to: | |
| a. | The plant contacting live electrical conductors? | **No.**<br>The fully extended lift arm of the binlifter would not reach electrical conductors at normal heights. |
| b. | The plant working in close proximity to electrical conductors? | **No.** |
| c. | Overload of electrical circuits? | **No.** |
| d. | Damaged or poorly maintained electrical leads and cables? | **Yes.**<br>A damaged electrical cord could present a hazard of electrocution. Normal inspection and maintenance would prevent this from occurring. |
| e. | Damaged electrical switches? | **No.** |
| f. | Water near electrical equipment? | **Yes.**<br>All electrical connections have been coated with electro coat to resist water penetrations and humidity. Users advised in instruction not to leave binlifter in weather unnecessarily. |
| g. | Lack of isolation procedures? | **NOT APPLICABLE.** |
| h. | Other factors not mentioned? | **NO** |

| I | EXPLOSION | |
|---|---|---|
| 1 | Can anyone be injured by explosion of gases, vapours, liquids, dusts or other substances, triggered by the operation of the plant or by material handled by the plant? | **Yes.**<br>In the event where the battery is incorrectly ventilated, enabling fumes to be directed near an ignition source. |

| J | SLIPPING, TRIPPING & FALLING | |
|---|---|---|
| 1 | Can anyone using the plant, or in the vicinity of the plant, slip, trip or fall due to: | |
| a. | Uneven or slippery work surfaces? | **Yes.**<br>Only if plant used in an environment where slips and trip could occur. |
| b. | Poor housekeeping, eg. swarf in the vicinity of the plant, spillage not cleaned up? | **Yes.**<br>If there is spillage of rubbish or liquids from the bin, however this is unlikely. |
| c. | Obstacles being placed in the vicinity of the plant? | **Yes.**<br>The potential for an individual(s) to slip, trip and/or fall around the plant exists in the event where housekeeping standards are not maintained to a high level. |
| d. | Other factors not mentioned? | **No** |

| J | SLIPPING, TRIPPING & FALLING | |
|---|---|---|
| 2 | Can anyone fall from a height due to: | |
| a. | Lack of a proper work platform? | **No.** |
| b. | Lack of proper stairs or ladders? | **No.** |
| c. | Lack of guardrails or other suitable edge protection? | **No.** |
| d. | Unprotected holes, penetrations or gaps? | **No.** |
| e. | Poor floor or walking surfaces, such as the lack of a slip-resistant surface? | **No.** |
| f. | Steep walking surfaces? | **No.** |
| g. | Collapse of the supporting structure? | **No.** |
| h. | Other factors not mentioned? | **No** |

| K | ERGONOMIC | |
|---|---|---|
| 1 | Can anyone be injured due to: | |
| a. | Poorly designed seating? | **No.** |
| b. | Repetitive body movement? | **No.** |
| c. | Constrained body posture or the need for excessive effort? | **No.** |
| d. | Design deficiency causing mental of psychological stress? | **No.** |
| e. | Inadequate or poorly placed lighting? | **No.** |
| f. | Lack of consideration given to human error or human behaviour? | **No.** |
| g. | Mismatch of the plant with human traits and natural characteristics? | **No.** |
| h. | Other factors not mentioned?<br>(For more information on hazards associated with manual handling refer to the Victorian Manual Handling Code of Practice.) | **No** |

| L | SUFFOCATION | |
|---|---|---|
| 1 | Can anyone be suffocated due to the lack of oxygen, or atmospheric contamination? | **NOT APPLICABLE.** |

| M | HIGH TEMPERATURE FOR FIRE | |
|---|---|---|
| 1 | Can anyone come into contact with objects at high temperatures? | **No.** |
| 2 | Can anyone be injured by fire? | **No.** |

| N | TEMPERATURE (THERMAL COMFORT) | |
|---|---|---|
| 1 | Can anyone suffer ill-health due to exposure to high or low temperature? | **No.** |

| O | OTHER HAZARDS | |
|---|---|---|
| 1 | Can anyone be injured or suffer ill-health from exposure to: | |
| a. | Chemicals? | **Yes.** The potential for skin related conditions can occur when handling, lubricants and hydraulic fluids. |
| b. | Toxic gases or vapours? | **No.** |
| c. | Fumes? | **No.** |
| d. | Dust? | **No.** |
| e. | Noise? (For more information on hazards associated with noise, refer to the Victorian Noise Code of Practice.) | **NO.** |
| f. | Vibration? | **NOT APPLICABLE.** |
| g. | Radiation? | **NOT APPLICABLE.** |
| h. | Other factors not mentioned? | **NO** |

## PLANT HAZARD - RISK ASSESSMENT SUMMARY
## RISK CONTROL STRATEGIES

**(The following risk control strategies have been developed to ensure the safe operation of the plant for all users and people working in the vicinity of the plant)**

**A. ENTANGLEMENT**
Not Applicable

**B. CRUSHING**
This risk can result in injury if the hydraulic apparatus were to fail at the same time as the burst hose protection valve during operation or maintenance. This is unlikely however the safe work procedure should be amended.

**RECOMMENDATION.**

*The safe work procedure should be amended to following.*

*Move to the side of the binlifter and take hold of the operating pendant:*

- *Make sure that no personnel or obstacles are with Two (2) Metres in front* ***or to the rear*** *of the binlifter (the swing arm may hit them)*

In the event of the hydraulic apparatus were to fail at the same time as the burst hose protection valve during maintenance, the swing arm could fall onto a maintenance person working under the swing arm.

**RECOMMENDATION.**

*A notation could be added to the Safety Notes stating "Maintenance is only to be carried out when swing arm is down,"*

The risk of crushing due to movement of the plant has been addressed in the safe work procedure:

- We recommend slopes no more than 6 degrees and
- Activate total brake on both caster by pressing down on red pedal with your foot.

Compliance with the safe work procedure will prevent the risk of injury from this hazard. No further recommendations in relation to this hazard.

The crushing hazard whereby a person could get their hand caught in the pivot point of the swing arm should be addressed.

**RECOMMENDATION**

*Install guarding to prevent a person putting their hand near the pivot point where the swing arm connects to the main frame. The guarding should prevent a person from putting their hand into this area.*

**C. CUTTING, STABBING & PUNCTURING**

No hazards detected.

**D. SHEARING**

See recommendation regarding the crushing of a person's hand in the vicinity of the pivot point where the main frame meets the lifting arm.

**E. FRICTION**

Not applicable

**F. STRIKING**

The risk of striking due to movement of the plant has been addressed in the safe work procedure:

- We recommend slopes no more than 6 degrees and
- Activate total brake on both casters by pressing down on red pedal with your foot.

Compliance with the safe work procedure will prevent the risk of injury from this hazard. No further recommendations in relation to this hazard.

**G. HIGH PRESSURE FLUID**

Operators could come into contact with high pressure hydraulic fluid in the event of a hose failure. The risk level is low due to the relatively low pressure in the hoses and the position of the hoses. Regular inspection and maintenance should prevent such an occurrence.

**H. ELECTRICAL**

Electrical hazards can occur if the electrical cable or attachments are damaged. As this damage would occur through the operation or the operating environment, this hazard is beyond the control of the manufacturer.

**RECOMMENDATION**

*Consider adding a recommendation that all electrical cord and lead are checked damage by the operator, prior to operating.*

**I. EXPLOSION**

Battery vapours from a battery being charged can explode under extreme circumstances.

**RECOMMENDATION**

*Add the warning that "the binlifter should be charged in a well ventilated area" to the safety notes.*

**J. SLIPPING, TRIPPING & FALLING**

Trip slip and fall hazards are only present if the environment in which the bin lifter is used. This is beyond the control of the manufacturer and is the responsibility of the operator.

**RECOMMENDATION**

*Consider included the following statement in the Safe Operating Procedures. :"Check area for trip slip and fall hazards prior to operation".*

**K. ERGONOMIC**

NOT APPLICABLE.

**L. SUFFOCATION**

NOT APPLICABLE.

**M. HIGH TEMPERATURE FOR FIRE**

NOT APPLICABLE.

**N. TEMPERATURE (THERMAL COMFORT)**

NOT APPLICABLE.

**O. OTHER HAZARDS**

**(CHEMICALS)**

Personal protective equipment (PPE) should be worn by persons involved with the in the maintenance of the plant or when handling lubricating products and hydraulic fluids in order to minimize the potential for skin irritations.

**(TOXIC GASES OR VAPOURS)**

NOT APPLICABLE.

**(FUMES)**

NOT APPLICABLE.

**(DUST)**

NOT APPLICABLE.

**(NOISE)**

NOT APPLICABLE.

**(VIBRATION)**

NOT APPLICABLE.

**(RADIATION)**

NOT APPLICABLE.