

SWITCH - Scottish Waste Industry Training, Competency, Health & Safety Forum

Ensuring Safety in RCV Operations

Presenter: Alasdair Meldrum, Treasurer

Alasdair Meldrum - BSc Hons, FCIWM, FCIWEM, CEnv, CIOSH

- Owner / Director of Albion Environmental Ltd
- 30 years + Experience in the Waste Industry
- Chartered Waste Manager
- Waste Management Consultant
- Assessor for Waste Management Qualifications (COTC's) and previously senior external verifier for SQA for waste qualifications
- Treasurer of SWITCH and member of Education, training and competence (ETC) group

Automatic Bin Lifting Equipment

- Recent changes to the formal standard (BS EN 1501-5)
- Safeguards and interim solutions
- Future considerations and developments

- WISH Guidance highlighted the issue in September 2019

WISH

Waste Industry Safety and Health Forum

SUPPORTING REFERENCE DOCUMENT

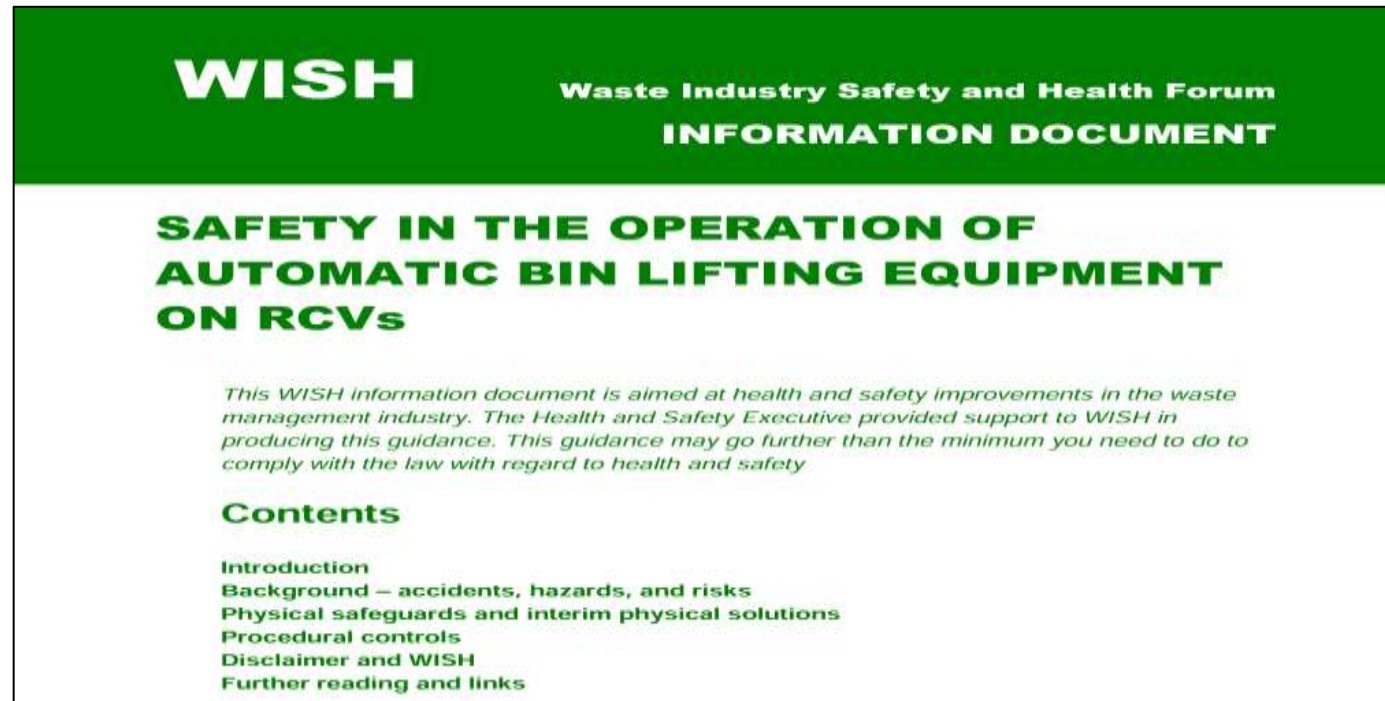
**CASE STUDIES: BIN LIFTERS AND BINS
ON WASTE COLLECTION LORRIES**

- [Case Studies](#): Bin Lifters And Bins On Waste Collection Lorries
 - Provide Instances of Serious Injury and Fatality Related to Bin Lifters

Risk - Waste collector (loader) struck by the bin, still attached to the bin lifter, as it returns to ground level

Case study: A refuse collection worker was at the vehicle's side mounted control panels when the raised bin lid fell off and struck the stop button on the other side of the vehicle. As he walked under the raised bin to release the stop button, his colleague released it from the other side of the vehicle and proceeded to lower the bin lifter. The collection worker was crushed between the bin and the ground, sustaining injuries as a result.

March 2023: WISH issued a position statement on the safe use of Refuse Collection Vehicle – Bin Lorry (RCV) bin-lift equipment in automatic mode



WISH INFO 26 Safety in the operation of automatic bin lifting equipment on RCVs v1 January 2024

Refuse Collection Vehicles - General Requirements & Safety Requirements

- [Part 5: “Lifting Devices for Refuse Collection Vehicles”](#) Standard fails to meet essential health and safety requirements provided for in point 1.2.1 Safety and reliability of control systems of Schedule 2, Part 1 (Annex I) to S.I. 2008/1597

(b) Following an objection made in respect of the standard EN 1501-5:2021 'Refuse collection vehicles – General requirements and safety requirements – Part 5: Lifting devices for refuse collection vehicles', it is concluded that the standard fails to meet the essential health and safety requirements provided for in point 1.2.1 Safety and reliability of control systems of Schedule 2, Part 1 (Annex I) to S.I. 2008/1597. In particular, the standard does not prevent reasonably foreseeable human error leading to hazardous situations through

Refuse Collection Vehicles - General Requirements & Safety Requirements

The standard doesn't stop human error causing dangerous situations, like accidentally activating the lifting mechanism when people lean on it or get caught in it during tasks like clearing spills or loading large items, even in automatic mode

[Part 5: "Lifting Devices for Refuse Collection Vehicles"](#)



Product Safety Report

Office for [Product Safety and Standards report](#) on Terberg OmniDEKA hydraulic bin lift with sonar N1 Sensor

Office for Product Safety & Standards	
Product Safety Report	
Terberg OmniDEKA hydraulic bin lift with sonar N1 sensor	
Aspect	Details
Images	
Alert Number	2306-0080
Product Type	Machinery – Hydraulic bin lifter
Product Identifiers	Brand: Terberg Model: OmniDEKA Variant: Sonar N1 start sensor Manufacturing period: 2016 to May 2023
Product Description	High-level automatic split bin lift (two lifting chairs side by side) which utilises a sonar sensor (referred to as the N1 sensor) to start the lifting cycle when an object is detected within range. The product is supplied as partly completed machinery intended to be incorporated on the rear of a compatible refuse collection vehicle. The product displays conformity marking (either CE or CE and UKCA)

Office for [Product Safety and Standards report](#) on Terberg OmniDEKA hydraulic bin lift with sonar N1 Sensor

- The manufacturer has voluntarily withdrawn the product from the GB market until compliance is achieved
- A retrofit option is being designed by the manufacturer to enhance the safety of existing machines
- Owners of RCVs using this product are advised to contact their supplier for additional details

David Carpenter: Prevention of Future Deaths Report. The [coroner's report](#) brought to attention the safety hazards present within the waste collection industry, following the tragic death of a 60-year-old refuse collector employed by Coventry City Council. Mr. Carpenter was fatally injured while operating a Dennis Eagle bin lorry equipped with a Terberg 'Omnideka' automatic bin lift system when his coat became entangled in the lifting mechanism, leading to his death during the automatic compaction cycle.

5 CORONER'S CONCERNS

During the inquest, the evidence and information revealed matters giving rise to a concern. In my opinion, there is a risk that future deaths will occur unless action is taken. In the circumstances, it is my statutory duty to report them to you.

The **MATTER(S) OF CONCERN** are as follows:

The inquest explored issues such as the safety of the machinery (the bin lorry, in particular the bin lift system in automatic mode).

The life span of this type of machinery i.e. Bin lorries is 8 – 12 years. There are thousands of bin lorries of this or similar design still in circulation in April 2024.

The evidence was it is *estimated* 4 to 6 million residential bins are lifted every day by bin lorries provided by the manufacturers.

It was/ is foreseeable that both workers (e.g. refuse collectors) and members of the public will approach the danger zone at the rear of the RCV. In the case of workers, for example, to remove debris/ detritus which occurs frequently on residential waste collection rounds.

The circumstances of this inquest touching upon the death of David Carpenter in January 2023 accentuated this point.

A risk of inadvertent whole-body lifting into the manufactures bin lorry hopper of a person in the danger zone carries with it a risk of death.

Requirements

- New Vehicles
- Existing Vehicles
- Procedural Controls



Until BS EN 1501-5 is amended (as explained earlier), new machines will need a competent third-party assessment to ensure that manufacturers have addressed the risks of individuals being in the 'danger zone' during bin lifting, tipping, and lowering.

BS EN 1501-5:2021

Refuse collection vehicles. General requirements and safety requirements - Lifting devices for refuse collection vehicles

Current · Published: 30 Apr 2021

FCC Environment

Changing behaviours to Reduce Risk – Loading RCVs Smarter

SiteZone Safety



HSE is collaborating with industry, manufacturers, and WISH to develop solutions for retrofitting physical interlocking safeguards and/or sensing/detection systems onto the existing GB RCV fleet

Key requirements for any physical safeguarding measure/system:

- Adheres to PLd (Performance Level 'd') of BS EN ISO 13849-1, ensuring robustness and reliability. Meeting PLd in the design risk assessment is essential for this

Key requirements for any physical safeguarding measure/system cont.

- Prevent the automatic compaction cycle of the RCV from starting
- Halt any ongoing compaction cycle
- Cease movement of all lifting arms, including multiple/split refuse container lifting arms if equipped
- All safeguarding systems must be designed to "fail to safe" rather than to danger

Risk Assessment – You should assess how your workers operate RCVs

Consider the following:

- WISH WASTE 04 “waste and recycling vehicles in street collection” accessible at WASTE 04
- WISH INFO 10 “safe use of refuse collection bin-lifters and bins”, available at INFO 10
- WISH REF02 “case studies bin lifters and bins on collection lorries” accessible at REF 02
- Additionally, utilise the information provided by your bin-lift supplier/s

Training, Information, Instruction & Monitoring

- Guarantee secure work practices and provide suitable instruction and training to workers
- This is especially crucial for agency or temporary staff
- Regularly reinforce instruction and training



Training to Include

- Highlight the higher risk of automatic bin-lift operation compared to manual, and how safety protocols reduce these risks
- Specify instances where presenting bins for lifting and tipping is inappropriate, like with damaged or overloaded bins (“grinning” or “top hatting”)
- Determine when to use automatic and manual modes based on supplier guidelines and risk assessments

Training to Include (cont.)

- Individual RCV bin collection to be risk assessed (refer to WISH WASTE 23 “Safe Waste & Recycling Services)
- Make sure workers understand the basic principles of operating lifting equipment modes, enabling individual crews to make suitable decisions
- Stress that automatic mode should not be the default without proper risk assessment, training, safety measures, and supervision to handle resulting risks

Situations Inappropriate for Automatic Mode

- **Trade Waste:** Larger trade waste bins should not be emptied using automatic lifting mode
- **Spaced Collection Points:** Automatic mode should not be used in areas with well-spaced collection points, such as some rural areas
- **Hand loading:** Manual lifting mode should be exclusively used for loading bagged, side waste, or other hand-loaded wastes

- Measures in place to prevent workers and the public from approaching an open bin-lift (without a bin) operating in automatic mode
- Monitoring, instruction, and training protocols to ensure effective adherence to risk assessments, procedures, and training requirements



- Are you comfortable your current RCV's meet these requirements
- Does your training include details about when to use automatic / manual modes?
- Do your route risks assessments include details on when you use automatic / manual modes?
- What is best practice in this area? How do you share this across the sector?

- Clear working procedures provide guidelines for safe practices, addressing issues like bin placement, safe positions during lifting cycles, and handling jams or debris
- Training and monitoring, especially for temporary workers, are pivotal in ensuring adherence to safety protocols
- Understanding the hazards of automatic mode, situations inappropriate for its use, and the importance of supervision and risk assessment are vital for operational safety

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MyBINS

<https://www.my-bins.co.uk/>



By Albion Environmental

The Rubbish Talk podcast is brought to you by staff from Albion Environmental, to widen the conversation about managing waste and resources in the UK.

Episodes Released Fortnightly

<https://rubbishtalk.co.uk/>

What is SWITCH?

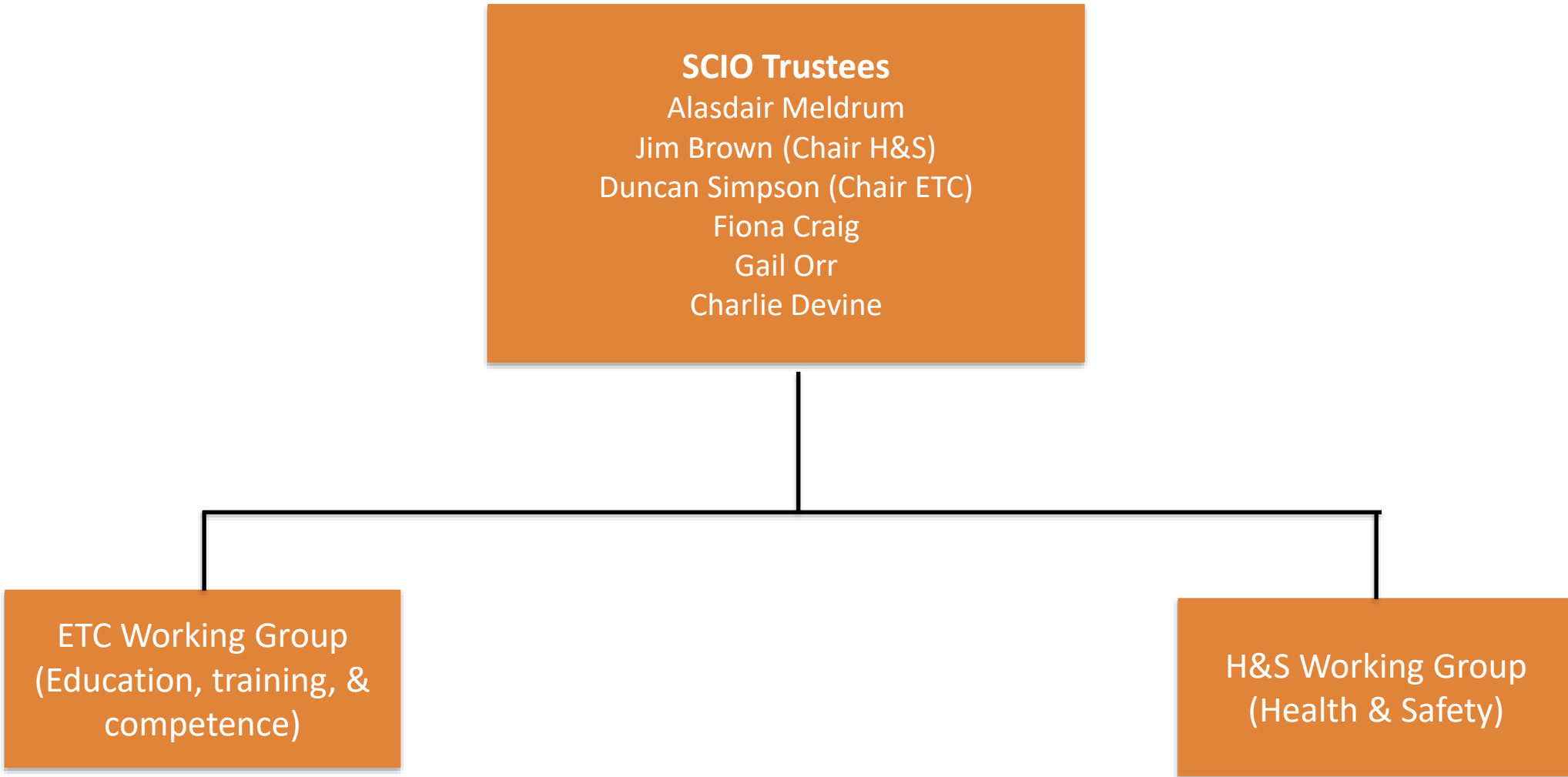
- A multi-partnership forum made up of organisations across all sectors within the resource management industry
- Aim to provide leadership by working collaboratively to raise standards of H&S, training, learning and development, and technical competence, and to promote the Scottish resource management industry as an attractive career choice



SWITCH Stakeholders



Waste
Managers
Network



- Improving H&S and training and development across all the resource management sector
- Building on the success of the Competence framework, SHEA Passport and other SWITCH resources
- Working collaboratively to become the central point of information for health and safety, training, learning and development, and technical competence within the Scottish resource management industry!

BECOME A SWITCH FORUM MEMBER



As a member of SWITCH I will become an ambassador for the waste and resource management sector.

As an ambassadors I will make every reasonable effort to -

- Promote the SWITCH SCIO and its objectives.
- Actively promote SWITCH activities within my organisation and networks.
- Support events and other promotional activities; e.g. by providing speakers for events, developing case studies, writing articles and demonstrating good practice.
- Promote Health and Safety in my sector
- Promote Learning and Development in my sector

I agree

[Request to join SWITCH](#)