

Swing-Up Stabiliser Safety

ALLMI Guidance Note 033

Swing-up stabilisers are fitted to lorry loaders predominantly to negate the need for large-scale relocation of chassis furniture during installation and they have been widely used over many years. They may be manually or hydraulically operated, either by levers at the crane base or via remote control, dependent upon specification.

This Guidance Note focuses primarily on the safe retraction of swing-up stabilisers. Guidance is required because where the swing-up stabiliser rotates across the position of fixed hold-to-run controls (on one or both sides of the vehicle), there is a risk of the Operator being crushed if they fail to correctly use and observe the stabiliser throughout the retraction process.

Note: The terms 'tilting stabilisers' and 'rotating stabilisers' are also used. 'Swing-up stabilisers' has been chosen for use in this guidance as it is the most commonly adopted term in the UK.

1. Who the Guidance is aimed at:

- Loader crane installers.
- Persons and organisations undertaking maintenance / service / repair activities within the lorry loader industry.
- Persons and organisations that own and operate lorry loaders.
- Persons and organisations receiving goods being delivered by lorry loaders.
- Appointed Persons.
- Lorry Loader Operators.

2. What the Law says:

Product design Standard, BS EN 12999, provides one means for loader cranes to comply with the essential health and safety requirements of the Machinery Directive 2006/42/EC, which is implemented in the UK by the Supply of Machinery (Safety) Regulations.

BS EN 12999:2020 stipulates the following requirements regarding stabilisers:

- Clause 5.8.1 (extract): *A control station for each stabilizer function shall be positioned so that the operator has an unobstructed view of the movements being controlled. If the stabilizers can be operated with a suspended load, a two stage control action shall be required for the operation. The control station for stabilizer extension deployment shall only operate movements in full view of the operator. These requirements also apply to stabilizer extensions that are remote controlled, in which case a device shall be provided that detects that the operator can have a clear view of a stabilizer extension before it may start to extend or retract.*
- Clause C.2.4 (an informative Annex): *The safety function for **stabilizer extension clear view** prevents remote controlled stabilizer extensions from being extended or retracted unless it is detected that the operator can have a clear view of the area where the stabilizer extensions are to be moved.*

a) *This safety function is only required if the crane has remote controlled stabilizers.*

- b) *It should prevent stabilizer extensions from being extended or retracted unless it is detected that the operator can have a clear view of the area where the stabilizer extensions are to be moved.*
- c) *The permitted time for operation of stabilizer extensions should be limited based on the time it takes to extend or retract the stabilizer extensions and the related tasks associated with it, e.g. placing foot plates.*

As such, with lorry loaders built in compliance with BS EN 12999:2020 (or previous revisions or amendments) the primary safeguard is the use of hold-to-run controls for individual movements from a position where the Operator has a clear and unobstructed view; with a requirement that the stabiliser can only be operated once a device has been activated by the Operator on that particular side of the vehicle. This is typically by the use of an acknowledgement button that the Operator must press. The residual risks are highlighted in warning signage attached to stabiliser legs.

3. Guidance:

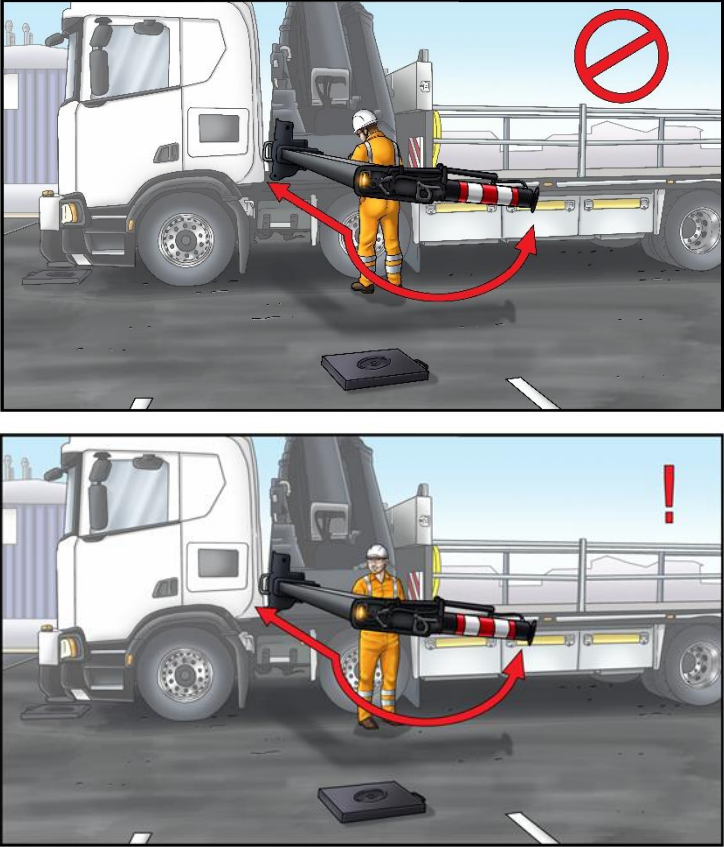
In all cases, where lorry loaders are fitted with swing-up stabilisers:

- There is a potential crush risk on the side where the swing-up stabiliser tilts towards the Operator / levers at the crane base. To avoid this, the control measures listed below should be followed.
- Swing-up stabilisers should be pinned / locked in the vertical / upright position before the stabiliser beam is deployed or retracted.
- It is essential that Operators fully observe the operation of the stabiliser leg during deployment and stowage.
- Operators must be made aware that the operation of the swing-up function must be separate from the movement of the stabiliser beam (i.e. they should not use both functions simultaneously).
- Operators must be fully conversant with the manufacturer's instructions regarding the deployment and stowage of swing-up stabilisers. There can be considerable variation between different manufacturer systems.
- Operators must not be positioned in (or lean / reach into) danger zones where there is a risk of crushing.
- If swing-up stabilisers are used on sites where the stabiliser is only partially deployed, there is an increased risk of creating a danger zone where the swing-up stabiliser tilts towards the Operator / levers at the crane base. In this case, consideration should be given to repositioning the vehicle to ensure further extension of the stabiliser beam is achievable prior to the swing-up leg being deployed.
- Residual risk warning stickers / decals must be visible and maintained.
- All loader cranes with remote control have the option to use emergency levers at the crane base. Such levers are only required in the event of remote control failure,

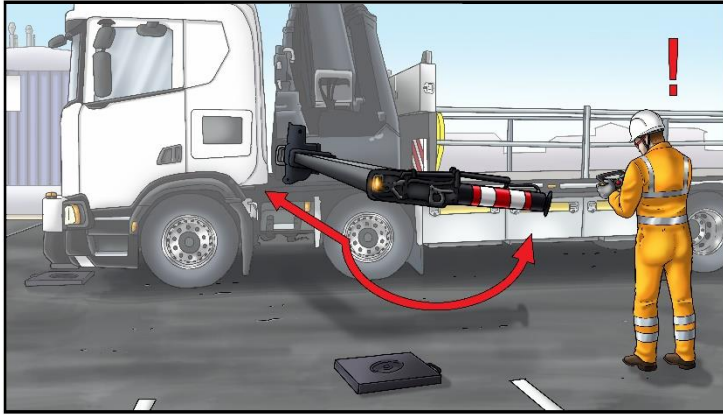
following confirmation that the spare battery does not resolve the issue and failure of the remote control 'umbilical cord' (i.e. the umbilical cord should be tried first, before using the emergency levers). Fleet owners are advised to confirm the umbilical cord is available in the cab at all times and is serviceable / fit for use. Should emergency levers need to be used, the above guidance applies in the same way as it would to standard controls.

- Fleet owners should ensure that Operators are competent and have been monitored in the correct use of stabiliser legs.
- Training providers should include coverage of this guidance during Operator courses, regardless of stabiliser type (as Operators may move between vehicles).
- Those conducting familiarisation training on lorry loaders (such as during new vehicle handover or when Operators move to different equipment) should include coverage of this topic.

Those involved in lorry loader operations should risk assess the potential crushing hazard from stabiliser deployment and stowage, and include control measures in all lorry loader procedural documentation, such as lift plans. To aid the identification of lorry loaders that may require additional control measures, the following guidance is provided:

<p>Scenario 1: Swing-up stabiliser rotates across the position of fixed controls on one or both sides of the vehicle</p> 	<p>Additional control measures required.</p> <p>For example:</p> <ul style="list-style-type: none"> • Additional Operator training, particularly familiarisation training at handover / when receiving a new vehicle (including hire vehicles, etc.). • Lift plan risk assessments and procedures tailored to include the importance of continual stabiliser observations and to stow and secure stabilisers as per the manufacturer's instructions. • Consider additional members of the lifting team being provided, such as a Crane Supervisor, when appropriate. • Consider enhanced lone working procedures. • Refer to this Guidance Note. <p>Note: Some sites may have specific rules regarding this type of lorry loader.</p> <p>Note: Lorry loaders of this type are compliant with all revisions and amendments of EN 12999 at the time of manufacture.</p>
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Scenario 2: Swing-up stabiliser rotates across the position of fixed controls on one or both sides of the vehicle where there is the additional option to operate via remote control



Additional action required.

Consideration should be given to disabling the fixed control option to ensure the Operator always uses the remote control for stabiliser operation.

In most cases, this simply requires the removal of fixed levers which should then be stored in the cab for emergency use.

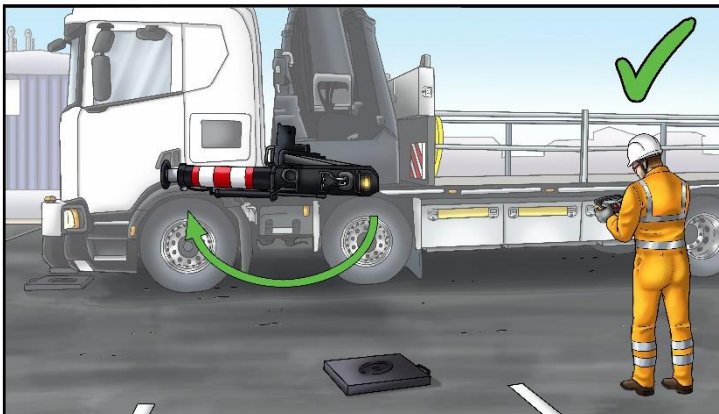
If in any doubt, contact the loader crane manufacturer for guidance.

Operator training, familiarisation training, risk assessments and lift plans, etc. must contain the importance of operating the stabilisers from a safe position.

For further guidance, refer to the ALLMI Safe Use of Remote Controls campaign material:

<https://www.allmi.com/guidance-documents/safe-use-of-remote-controls>

Scenario 3: Swing-up stabiliser rotates in either direction, but can only be operated by remote control



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For further guidance, refer to the ALLMI Safe Use of Remote Controls campaign material:

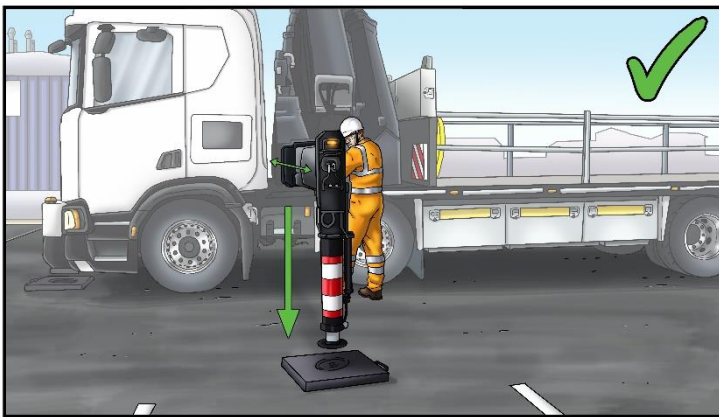
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Scenario 4: Swing-up stabiliser rotates away from fixed controls on both sides of the vehicle



The direction of swing-up rotation is manufacturer dependent.

Scenario 5: Swing up stabiliser retrospectively fixed in the downward position for both use and travel



This will only be achievable where the positioning of chassis furniture permits and is unlikely to be achievable for most installations.

The loader crane manufacturer must be contacted for approval prior to any retrospective solution being applied.

Scenario 6: Manually operated swing-up stabilisers



Manually operated swing-up stabilisers are not hydraulically (or otherwise) powered. They require the Operator to physically push the stabiliser leg into its correct stowage position, typically aided by a gas spring. Locking functions must be disengaged/released before the swing-up or swing-down movement is possible.

Stabilisers with a manually operated swing-up function cannot be retracted at a 90° horizontal position, so there is no risk of crushing when the stabiliser beam is retracted.

Scenario 7: Swing up-stabiliser retro-fitted with manufacturer approved safety system



Such systems may take various forms. E.g., preventing full retraction of the stabiliser unless it is in an upwardly vertical position.

Documentary evidence of the upgrade must be available in the cab. This may be in the form of user instructions and guidance.

The loader crane manufacturer should be contacted for approval prior to any retrospective solution being applied.

Further sources of reference:

Note: this is a non-exhaustive list of references consulted in the formulation of this guidance.

- BRITISH STANDARDS INSTITUTION, 2016. BS 7121-1:2016. Code of practice for safe use of cranes - Part 1: General. London, England: BSI.
- BRITISH STANDARDS INSTITUTION, 2010. BS 7121-4:2010. Code of practice for safe use of cranes - Part 4: Lorry loaders. London, England: BSI.
- BRITISH STANDARDS INSTITUTION, 2020. BS EN 12999-2020. Cranes - Loader cranes. London, England: BSI.
- CONSTRUCTION PLANT-HIRE ASSOCIATION (CPA) & ASSOCIATION OF LORRY LOADER MANUFACTURERS AND IMPORTERS (ALLMI), 2010. Safe use of lorry loaders: CPA - ALLMI Best Practice Guide. London, England: CPA & Chippenham, England: ALLMI.

Disclaimer

This note is for guidance only. It should be studied and the information applied with the assistance of expert advice as necessary. Every effort has been made to ensure the accuracy of the information provided, which is based on the best possible interpretation of the applicable guidance from legislation and standards at the time of writing, but no legal liability can be accepted by ALLMI for any errors or omissions, nor for any consequences thereof.