



Telehandler & Man Platform Incident Investigation Document

This document and the included Appendices should be used as a checklist to gather information regarding a **Telehandler / Rough Terrain Fork Truck Incident involving a Man-Platform or the Lifting of Personnel with a Telehandler in North America**. A unique document is required for each TELEHANDLER Incident.

Covered in this document.

<http://www.vertikal.net/en/news/story/21941/>



<http://www.vertikal.net/en/news/story/22741/>

<http://www.vertikal.net/en/news/story/6953/>

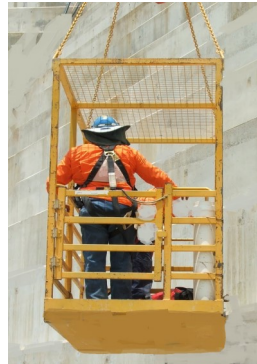
NOT Covered in this document.

Freely Suspended man platforms from cranes.

OSHA says that complying with the new standard, 29CFR1926.550(g), should prevent future accidents.

Lifting Freely suspended loads from telehandlers.

Not covered in ANSI/ASME B56.



Note: This document does NOT cover Cranes with freely suspended man platforms or Telehandlers with Freely Suspended (Hanging) loads.

Incident Investigation reasons are: **Tick appropriate box(s).**

Persons Injured. Section 3.

Property Damage. Section 4

While inspecting the Telehandler and the Site: **Do NOT try to operate the Telehandler. Provide observations only, no opinions or commentary.**

Before you visit the Site or conduct the Incident Investigation / Inspection: **Consider which other group is engaged, OSHA, Police, Manufacturer etc.** Note: the ownership of this document belongs to the writer and/or the person organizing the investigation/inspection. Sharing the document is at the discretion of the owner of the document. The same version of document can be downloaded and used by OSHA , Manufacturers, Police etc.

ANSI/ITSDF B56.6-2011 Safety Standard for Rough Terrain Fork Trucks, section 5.15, provides specific instructions for the operator and the platform occupants regarding the use of a work platform on a telehandler.

It is highly recommended that the Investigator read the extracts from ANSI and OSHA –CFR provided as an appendix in this document.



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Information for Incident Investigator– Security:

As in motor vehicle accidents or criminal cases where someone is killed or injured, scene preservation is critical to ensuring crucial evidence is not lost, masked, tampered with. In an ideal world, the same opportunity would be preferable for all workplace incidents where injury or death result. For many reasons, reality is different; where a machine has been involved in an incident that has resulted in property damage, injury or death, the first and usual response is to remove the machine from the incident scene. This could be for a number of reasons, such as;

- * To free a trapped and/or injured operator
- * To prevent further damage or injury to property or bystanders
- * To remove it from an area where it is impeding vehicle or pedestrian traffic.

This is a normal and natural response and in many cases it is the only response that is reasonable under the circumstances. Unfortunately however, in doing so, crucial evidence may be lost that could otherwise provide great insight into the cause or other factors that led to the incident, especially on newer machines that have components that provide diagnostic capability, such as “last movement” recording. If the last movement that led to an operator becoming trapped was a lift or drive function, releasing the operator and removing the machine could show the last movement as “lowering” or “forward drive”. It is important to bear this in mind when examining a machine that has been moved from the scene of an incident.

Where a machine has been recovered and removed from the incident scene, either to another location at the same site or to a location away from the site, security of a machine should still be paramount. The machine in whole, or in part, may possibly be used as evidence in legal proceedings later. Accordingly, when a machine involved in an incident is being examined/inspected after it has been recovered and removed from the incident scene, security of the machine must be carefully observed and recorded.

Some examples of things to look for and questions to ask:

When was the machine removed from the scene?

How was it removed from the scene, was it driven, lifted by crane, forklift truck etc. if removed from site, how was it removed and by whom?

Who has access to the TELEHANDLER keys?

Where are the operating instruction supplied with the machine? Any record of safety function repairs ?

Where are the copies of maintenance history from the date of first commission of the TELEHANDLER ?

Has the manufacturer been contacted regarding any upgrades, safety or otherwise, which may apply to this TELEHANDLER ?



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Section 1	Details of Person Completing Incident Investigation. Note: Can be multiple entities represented. (Tick appropriate Box/s)				
Manufacturer of TELEHANDLER		Owner of TELE-HANDLER (Contractor, Rental Company)		Site user of TELEHANDLER (Contractor)	
Operator at Time of Incident		State Regulator, OSHA		Site Safety Representative, Site safety Committee representative.	
Police or Emergency Service representative.		Insurance Investigator		Independent Engineer or Independent Investigator.	
Mines Department Representative.		DOT representative		Other :	
Name:		Organisation:			
Address:					
Tel:		Mobile:		Email:	
Date of Investigation:		Time:	AM/PM		

Section 2	Details of Incident Site.				
Site Name:			Site Address:		
State:	Zip Code:		Main Contractor :		
Date of Incident on Site:	Time:	AM/PM	Site Tel Contact:		
Weather Conditions at Time of Incident			Weather conditions at Time/Date of Inspection.		
Site Contact Name:			Organisation:		
Address:					
Tel:		Mobile:		Email:	



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Section 3. Persons Injured.	Details of Persons Injured in Incident
------------------------------------	--

Section 3.1. Name:			
Address:			
State:	Zip Code:	Age	Gender M/ F :
Language Spoken :		Telephone:	
Comment:			

Section 3.2. Name:			
Address:			
State:	Zip Code:	Age	Gender M/ F :
Language Spoken :		Telephone:	
Comment:			

Section 3.3. Name:			
Address:			
State:	Zip Code:	Age	Gender M/ F :
Language Spoken :		Telephone:	
Comment:			



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Section 4. Property Damage.

Details of Property Damage in Incident

4.1 Details of the “damage” to the TELEHANDLER at the Incident Site. *Note: Manufacturers details are covered in Section 6. **Indicate any pre-existing damage on the machine.***

Are there Photos of the TELEHANDLER damage?

Yes / No

How Many Photos, Number :

Note: Take wide angle and close up photos as per Appendix B.

4.2 Details of damage to other equipment in the vicinity in Incident. **Look for witness marks.**

Address if different to incident site:

Are there Photos of the equipment damage.

Yes / No

How Many Photos, Number :

Note: Take wide angle and close up Photographs.



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Section 4. Property Damage.	Details of Property Damage in Incident
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4.3 Details of damage to Structures & Property in Incident.

Address if different to incident site:

Are there Photos of the Property damage.	Yes / No	How Many Photos, Number :
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Note: Take Photographs, wide angle and close up .

Section 5. Details of Activity of the TELEHANDLER and Site. The site activity may be multiple uses, and the TELEHANDLER may be moved around site and used in different applications. Tick the appropriate boxes.

Building or Construction Site		Mine Construction and maintenance.		Demolition site	
Building repair and maintenance		Multi Story building		Aircraft maintenance	
Shipyards construction and maintenance.		Event, Race, Film production work.		Wind power installation.	
Film production and event control site.		Power station construction		Other:	

Details of activity of the TELEHANDLER involved in the incident on the site:



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Section 6. Details of the TELEHANDLER involved in the incident.

Note: Use a separate document for every TELEHANDLER. The TELEHANDLER may have NO damage, but the manufacturers details must be recorded.

Manufacturer: <i>Note manufacturers address on Compliance Plate.</i>	Country of Compliance: <i>(for current ANSI compliance , eg; B56 Series compliance must be stamped on the compliance plate)</i>
Model:	Serial Number:
Date Manufactured:	Date Commissioned:
Max Lift Height:	Max Outreach
Max Rated capacity.	Capacity at full height.
Machine weight as stamped:	Power Source:
Max capacity at full outreach.	Tire Information and pressure.
Max capacity on outriggers.	Record the tire pressure in each tire. Use 100psi gauge.
F/L PSI. F/R PSI.	R/L PSI. R/R. PSI.
Date of last Inspection:	
<i>Note: Take clear photographs of the compliance plates and stamped serial number and annual inspection plates.</i>	<i>Important Information : Check for tampering on the serial number plate and inspect to see that it looks original. Check with the Manufacturer for serial number and model number reference.</i>
ROPS & FOPS data for Cabin	Attachment Caution and de-rating capacity notices.

Owner of the TELEHANDLER:	
Address:	
TELEHANDLER Plant Number:	DOT State Road registration number if applicable:
Depot/storage yard.	Contact at Depot:
Telephone number:	Email:



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Section 7. Details of User of the equipment. *The User is the company performing the work on site. This can be a construction company, or a sole contractor etc.*

User:

Address:

Telephone:

Email:

Section 8. Operator of the TELEHANDLER. (the operator may or may not be the injured person) **Indicate the experience level of the operator, years operating telehandlers.**

Name:

Address:

Telephone:

Mobile:

Email:

Language spoken:

Training details and machines covered:

Who provided familiarization training.

Who provided site training?

Section 9. Occupants on the TELEHANDLER platform or person being lifted by the Telehandler at the time of the incident. (the other occupants may not be an operator) **Use additional Pages if required.**

Name:

Address:

Telephone:

Mobile:

Email:

Language spoken:

Training details and machines covered:

:

Who provided familiarization training.

Who provided site training?



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Section 10. Details of other equipment in the vicinity.

Note: The TELEHANDLER may have been impacted by another piece of equipment. Record information about equipment nearby and take distance and close up photographs. Look for witness marks on the other equipment. There may be more than one piece of equipment in the vicinity. Mark the equipment on the site map where appropriate.

10.1 Equipment in the Vicinity

Manufacturer:

Model:

Serial Number:

Owner of Equipment:

Visible damage:

Witness marks:

Photographs taken:

10.2 Equipment in the Vicinity

Manufacturer:

Model:

Serial Number:

Owner of Equipment:

Visible damage:

Witness marks:

Photographs taken:



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Section 11. Details of the person(s) responsible for completing the Site Risk Assessment Document before the TELEHANDLER Incident.

Name:	Organization:
Tel:	Email:
Where is the written copy of the Risk assessment:	

Section 12. Details of the Transport of the TELEHANDLER to the site. *Note: This section covers transport damage and unattended TELEHANDLER's that could be interfered with before entering site.*

When was the TELEHANDLER transported to site, Date:	Time:	AM/PM
Transport Company Name:		
Address:		
Telephone:	Email:	
Method of Transport: eg Tilt back, low bed loader, transport trailer etc.:		
Was the TELEHANDLER signed for at the site, or left unattended outside the site?		
Where are the transport documents?	Copy of transport document collected and secured.	

Section 13. Site conditions at the time of the TELEHANDLER incident. *Note: This is important information, and ground surface conditions, support surface incline and weather conditions are all measurable. Use some of the tools shown in Appendix A.*

Support Surface Material:	Support surface Incline:	Lighting condition:	Weather conditions:
Weather station report for area if excess wind loading was a factor:	Recent rainfall records if ground subsidence was a factor:	Dust and debris distribution. Is the dust controlled:	Sunlight or lighting glare affecting vision for the telehandler driver, view from the position of the driver. Photos:
Shadow issues from overhead structures at the time of the incident:	What are the normal shift start times and shift finish times:	Are there traffic lanes, overhead power cables etc close to the working position, Photos:	Are there cranes, excavators etc working in the vicinity? Photos.



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Section 14. Draw Site/Scene Map, shown the TELEHANDLER at the time of the incident.

A large, empty rectangular box with a thin orange border occupies the majority of the page. At the top center of this box is a north arrow icon, which is an orange outline of an arrow pointing upwards with the letter 'N' inside it.



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Section 15. TELEHANDLER/Machine items that need investigation. Page 1 of 3.

Are the level gauges in the cab working?	Who completes the services/inspection?
Are the wires connected to the back up alarms?	Who completes the Manufacturers instructions annual service/ inspection?
Is the horn working?	Who completes emergency repairs?
Do the controllers return to neutral?	Who completes daily inspections?
Do the switches return to neutral?	Who completes hose repairs?
What type of load was on the fork/pallet etc?	Has the hydraulic oil been replaced recently?
What type of load was in the fork mounted platform?	Has the Hydraulic oil been topped up recently?
Are the platform rails locked in place.?	What specification hydraulic oil was used?
Does the platform gate self close and latch and stay shut with pressure applied?	Is the emergency lowering system working?
Is the platform locked in place on the fork tynes?	Has the battery been replaced recently?
Are the fall arrest anchor points identified on the platform ?	Are the correct specification batteries installed?
Was fall arrest harness used in the platform ?	Is the machine installed with an oscillating axle?
Were the fall arrest harness's connected to the manufacturers designated anchor point?	Is the rear axle interlocked to prevent oscillation when platform elevated?
Was non standard equipment or signage connected to the platform?	Were the powered outriggers deployed at the time of the incident?
Are there any powered outriggers installed for use with platform.	Are the powered outriggers interlocked to prevent retraction when the platform is elevated?



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Section 15. TELEHANDLER/Machine items that need investigation. Page 2 of 3.

Does the work platform have load sensing system?	Are there additional loads applied to the platform, fixtures, fittings, pipes, clamps, pulleys and sheaves?
Does the load sensing system cut out functions?	If the telehandler work platform is used for tree work, Measure the diameter and length of cut tree sections in the vicinity?
Are the sensors connected?	Has the area been sterilized and cleaned before the investigation, ie no debris or material?
Are the impact marks on the platform rails?	Are there any extension leads, chains, wire ropes connected to the platform ?
Are there impact or scrape / wear marks under the platform support on the fork tynes?	Are there any electrical extension leads dangling from the platform to the ground?
On a rotating platform type machine, are the platform rotator shear bolts stripped or sheared?	What tools were being used in the platform,?
What attachments were being used when the incident happened ?	Was there a Jib or lifting hook attachment used or in the vicinity?
Check the Fork carriage compliance plate and record details?	Is there a load chart for the Jib attachment ?
Where are the load charts and operators manual for the Platform ?	
Is the Windscreen obscured or missing?	
Measure the position of the seat slider.	Record the seat spring tension setting.
Measure the length of fixed (non retractable) seat belts.	Are the mirrors installed?
<p>It is important in an investigation into an TELEHANDLER incident to be fully appraised of the actual load and its weight at the time of the incident, regardless of the nature of the incident or of the outcome. A layperson may not be aware of the significance of this. Use a bathroom scale to get a reasonable field record of the weights etc. Take photos and have a witness record data etc.</p>	



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Section 15. Telehandler Machine items that need investigation. Page 3 of 3.

<p>Transport tie down and park brake release instruction identified on the TELEHANDLER?</p>	<p>For Telehandlers that require envelope control calibration, where are the records for the last calibration? Need a copy.</p>
<p>Lifting Lugs and lifting position/procedure identified on the TELEHANDLER? Photos.</p>	<p>For Telehandlers with Envelope control systems, are there clear instructions on positioning the base far enough away from the work position so that the extended and raised boom/forks platform does not become trapped against the building during lowering or maneuvering?</p>
<p>TELEHANDLER Mass clearly stamped on the TELEHANDLER compliance /serial number plate? Can this be verified with a weighbridge ticket?</p>	<p>For Telehandlers with Man platform load charts showing rated capacity, is there clear instructions on the cabin regarding outrigger positioning, function changes and interlocking when using the larger rated capacity? Photos.</p>
<p>What is the Maximum Rated Capacity - How many persons, and how much equipment (in kg/pounds) can the platform support?</p>	<p style="color: red;">For TELEHANDLER's working on Barges or Pontoons, has the Site assessment taken note of the manufacturers specific instructions. Seek Engineer and/or third party approval.</p>
<p>Where are the LOAD CHARTS for the telehandler and attachment combination ?</p>	<p>For TELEHANDLER's travelling over and working on suspended slabs, is there an engineers document for permission to use the TELEHANDLER's on the slab?</p>
<p>Do the attachment part number match the LOAD CHART information ?</p>	<p>Has point loading, static and travelling loads been calculated based on the mass of the TELEHANDLER to be used and the combined load ?</p>



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Section 16. What happened ?



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Section 17. What are the witnesses saying that happened ?

Obtain a Copy of site investigation document if possible.



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Appendix A

List of tools and Equipment that will be useful and/or helpful.

Tape Measure (inch/feet)

Inclinometer (Android or Apple App on Phone)

Compass (Android or Apple App on Phone to identify machine orientation)

Weather App to identify Existing weather condition and condition at time of incident.

Camera (battery charged, and space on the memory card).

iPhone or Android Phone camera with GPS, time & date stamp. (Clean the Lens)

Map software to pinpoint location.

Digital Bathroom scales to check the weight of attachments, operators and debris in the platform. Essential tool to check the weight of the items.

100psi Tire (truck type) pressure gauge. (Car tire gauges do not record high enough pressure.)





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Appendix B Page 1 of 2. Photo Layout recommendation.

Clean the iPhone and/or camera lens. Ensure adequate light. **If Flash is used, repeat photo on low light setting.** Ensure that photos are from a distance away to get a wider angle, Include the material surrounding the telehandler and material on the ground. Photos of the telehandler in relation to its position on site are critical. Take photos of impact “witness marks” on the machine and on the ground surface.

<http://www.vertikal.net/en/news/story/10660/>





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Appendix B. Continued. Page 2 of 2

Camera Name and Type:		
Photo list. Telehandler. In a Clockwise rotation if possible	Yes/No	Number
Front LH side at 45 degree angle		
Front of machine		
Forks and Platforms		
Front RH side at 45 degree angle		
Side of machine,		
Engine Side		
Rear RH side at 45 degree angle		
Rear of machine and Counterweights.		
Rear LH side at 45 degree angle		
Boom assembly		
Boom Cylinder		
Oscillating axle if installed		
Wheels and Tires		
Steering system and linkages		
Boom extensionTrack systems (where Installed)		
Cabin Assembly External		
Cabin Assembly and controls internal		
Load Charts (all of them inside the cabin		
Operators Manual		
Lateral angle indicator		
Boom Angle Indicator		
Boom Length Indicators		
View from Cabin		
Seat position and Seat belt positions		
Fork Carriage mount		
Platform mounting		
Platform rotator (if Fitted)		
Guard rails and gate on Platform		
Platform controls (if fitted)		
Decals		
Impact witness marks		



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Appendix C

List of Applicable ANSI Standards and implementation Date.		
ANSI B56 6– 2011	Safety Standard for Rough Terrain Fork Trucks	2011
OSHA CFR 1926.502	OSHA 1926.502, SUBPART M, FALL PROTECTION	

Resource documents available from Industry Associations.		
ANSI/ITSDF B56.6-2011 Safety Standard for Rough Terrain Fork Trucks		
http://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB0QFjAA&url=http%3A%2F%2Fwww.lifttech.com%2Ffiles%2Fimages%2Ffiles%2FFORKLIFT_EXCERPTS_FOR_REGULAR_PRINTING.pdf&ei=36RPVZC4Kcjf8AXq-4GQCw&usg=AFQjCNGHhLFwMHUhBsjOxoaDwTKOfuSkA&sig2=UU2QPb9nqPTPDNYpU4no0A&bvm=bv.92885102,d.dGc		
Excerpts from ANSI and OSHA (see appendix F)		

Resource documents. Manufacturers Operator Manuals		
http://manuals.gogenielift.com/Operators/ENGomindex.htm		
https://csapps.jlg.com/OnlineManuals/Browse.aspx		



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Appendix D . SAMPLE Scene/Site Map, shown the TELEHANDLER at the time of the incident.

Sample Only



<http://www.vertical.net/en/news/story/10660/>

This layout diagram shows the investigator facing NORTH. (where possible)

South is behind the person, and shadow is on the machine for use in Northern hemisphere sites.

Be sure to check orientation of the machine, site, buildings, sun direction, time of day when photo is taken etc. Use the compass app on you smart phone.

Do not try to use an AWP to take photos from above and have an issue with soft ground overturn or excessive slope overturn!!



Appendix E . Preferred Technical Terminology for Northern America Market.

Use “cabin controls”.

Use Emergency Stop Switch. (Do not use E-Stop or EMS etc)

Use Stabilisers or Outriggers. (do not use Jacks or Stabs).

Use Platform or Basket. (Do not use Bucket, unless the person was using a material bucket as a platform, then describe as material bucket used as platform).

Use Telescope section ie, telescope out or telescope in or retract telescopic section..

Use Lift Up, Lift Down, Lift or Lower. (Do not use Crane terms “luffing” etc)

Use Hydraulic cylinder. (Do not use “ram”)

Use Urethane filled Tires. (Not Foam Filled Tires) Telehandlers generically use pneumatic tires and some later models use solid tyres.

Use Pneumatic Tires (not air filled Tires)

Use Joystick Controller for proportional controls.

Use Drive or travel. Do not use “tramping” etc.

Maximum Rated Capacity. (do not use SWL—Safe Working Load , unless the LOAD chart specifies SWL or Safe Work Load)

Load Sense Systems, do not use “weighing systems”.

This list is not exhaustive, but may ensure that details are referred to with a common “jargon” or “terminology”



Appendix F 4 pages

EXCERPTS FROM ANSI/ITSDF B56.6-2011 Page 1 of 2

5.15 Elevating Personnel

5.15.1

A rough terrain forklift truck shall not be used to lift people unless there is no other practical option. If a rough terrain forklift truck must be used to lift people, the following precautions for the protection of personnel shall be taken:

- (a) provide a personnel platform which complies with the design requirements listed in Part III of this Standard;
- (b) be certain that the platform is securely attached to the lifting carriage and forks;
- (c) be certain that the lifting carriage and forks are secured to prevent them from pivoting upward;
- (d) on trucks equipped with rotators, deactivate the rotation;
- (e) provide protection for personnel in their normal working position on the platform from moving parts of the rough terrain forklift truck that represents a hazard;
- (f) provide overhead protection as indicated to be necessary by the operating conditions;
- (g) be certain that the lifting mechanism is operating smoothly throughout its entire lift range, both empty and loaded [as described in para. 5.15.1(t)], and that all lift limiting devices and latches, if provided, are functional;
- (h) be certain that the mast or boom travel is vertical – do not operate on a side slope unless the rough terrain forklift truck is leveled;
- (i) be certain that the platform is horizontal and never tilt platform forward or rearward when elevated;
- (j) be certain that the rough terrain forklift truck has a firm footing;
- (k) be certain that required restraining means such as railings, chains, cable, body belt(s) with lanyard(s), etc., are in place and properly used;
- (l) place rough terrain forklift truck control(s) in neutral and set parking brake;
- (m) before elevating personnel, area shall be marked to warn of work by elevated personnel;
- (n) be certain that the path of platform travel is clear of hazards, e.g., storage racks, scaffolds, overhead obstructions, and electrical wires;
- (o) keep hands and feet clear of controls other than those in use;
- (p) lift and lower personnel smoothly, with caution, and only at their request;
- (q) always lower the platform if you must move the rough terrain forklift truck for adjustments in positioning;
- (r) alert elevated personnel before moving the platform. Then move the platform smoothly and with caution.
- (s) a trained operator shall be in position to control the rough terrain forklift truck, or available to operate controls if the platform is not equipped with controls. When the operator is not in the operating position, block the truck wheels and apply the parking brake with all travel controls in neutral.
- (t) the combined mass (weight) of the platform, load, and personnel shall not exceed one-third of the capacity at the related load center position as indicated on the information plate(s) of the rough terrain forklift truck on which the platform is used;
- (u) personnel are to maintain firm footing on platform floor unless secured by body belt and lanyard. Use of railings, planks, ladders, etc., on the platform for purpose of achieving additional reach or height is prohibited;
- (v) be certain that personnel and equipment on the platform do not exceed the available space;
- (w) platform shall be lowered to floor level for personnel to enter and exit. Personnel shall not climb on any part of the rough terrain forklift truck in attempting to enter and exit.
- (x) any body belt, lanyard, or deceleration device which has sustained permanent deformation or is otherwise damaged shall be replaced;
- (y) prohibit modification to the platform that is detrimental to its safe use.



EXCERPTS FROM ANSI/ITSDF B56.6-2011 Page 2 of 2

8.24 Platforms for Elevating Personnel

8.24.1

Design requirements for the manufacture of the platform shall include the following:

- (a) a platform floor having a slip resistant surface located not more than 8 in. (200 mm) above the normal load supporting surface of the fork;
 - (b) floor dimensions which shall not exceed two times the load center distance listed on the rough terrain forklift truck nameplate, measured parallel to the longitudinal center plane of the truck, nor have a width greater than the overall width of the truck [measured across the load bearing tires plus 10 in. (250 mm) on either side]. Minimum space for each person on the platform shall not be less than 18 in. (450 mm) in either direction.
 - (c) a 4 in. (100 mm) minimum height toe plate which may be omitted at the access opening;
 - (d) an overhead protection device, when requested by the user;
 - (e) protection for personnel in their normal working position on the platform from moving parts of the rough terrain forklift truck that represent a hazard;
 - (f) information prominently indicated on the platform:
 - (1) maximum work load including personnel and equipment;
 - (2) weight of empty platform.
 - (g) means so that the platform can only be centered laterally on the rough terrain forklift truck and retained against the vertical face of the forks, carriage, or lifting mechanism;
 - (h) a means to securely attach the platform to the lifting mechanism, and to prevent the platform from inadvertent pivoting;
 - (i) controls, when supplied for use on the elevating platform, shall be readily accessible to the operator and protected from damage and inadvertent actuation. They shall include provision to stop and start the engine of the rough terrain forklift truck and to lower the platform in case of engine failure;
 - (j) means shall be provided to render inoperative all operating controls, other than those on the elevating platform, when the controls on the elevating platform have been selected for use.
- Only one location of controls shall be capable of being operated at one time, with the exception of the emergency control(s) covered in para. 8.24.1 (k);
- (k) when controls are provide on the platform, a clearly identified emergency lowering means available at ground level shall be provided. Such means shall be protected against misuse.
 - (l) restraining means such as a guardrail or a means for securing personnel such as a body belt or lanyard. A guardrail or similar structure shall have a nominal height to the platform floor of 42 in. (1066 mm) around its upper periphery and include a midrail. It may be hinged, removable, or of chains, and used if proper positioning is easily discernible. Such restraining means shall be capable of withstanding a concentrated horizontal force of 200 lb (890 N) applied at the point of least resistance without permanent deformation. A body belt and lanyard is to have an attachment point provided overhead for freedom of movement, and its length is to limit free-fall to 5 ft (1500 mm) measured from the point of attachment to the operator. The complete system shall be capable of withstanding three consecutive drop tests to simulate a 250 lb (113 kg) person falling 6 ft (1800 mm) without allowing the test weight to fall free to the ground. A deceleration device may be included.
 - (m) lanyards, when provided, shall be arranged so as not to cause a tripping hazard;
 - (n) body belts, when provided, should have a width of at least 1.75 in. (44 mm);
 - (o) structural safety factor – all load supporting structural elements of the work platform shall have a structural safety factor of not less than 2 to 1 based on the minimum yield strength of the materials used.



EXCERPTS FROM OSHA 1926.502, SUBPART M, FALL PROTECTION Page 1 of 2.

1926.502(a)(2)

Employers shall provide and install all fall protection systems required by this subpart for an employee, and shall comply with all other pertinent requirements of this subpart before that employee begins the work that necessitates the fall protection.

1926.502(b)

"Guardrail systems." Guardrail systems and their use shall comply with the following provisions:

1926.502(b)(1)

Top edge height of top rails, or equivalent guardrail system members, shall be 42 inches (1.1 m) plus or minus 3 inches (8 cm) above the walking/working level. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of this paragraph.

Note: When employees are using stilts, the top edge height of the top rail, or equivalent member, shall be increased an amount equal to the height of the stilts.

1926.502(b)(2)

Midrails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking/working surface when there is no wall or parapet wall at least 21 inches (53 cm) high.

1926.502(b)(2)(i)

Midrails, when used, shall be installed at a height midway between the top edge of the guardrail system and the walking/working level.

1926.502(b)(2)(ii)

Screens and mesh, when used, shall extend from the top rail to the walking/working level and along the entire opening between top rail supports.

1926.502(b)(2)(iii)

Intermediate members (such as balusters), when used between posts, shall be not more than 19 inches (48 cm) apart.

1926.502(b)(2)(iv)

Other structural members (such as additional midrails and architectural panels) shall be installed such that there are no openings in the guardrail system that are more than 19 inches (.5 m) wide.

1926.502(b)(3)

Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds (890 N) applied within 2 inches (5.1 cm) of the top edge, in any outward or downward direction, at any point along the top edge.

1926.502(b)(4)

When the 200 pound (890 N) test load specified in paragraph (b)(3) of this section is applied in a downward direction, the top edge of the guardrail shall not deflect to a height less than 39 inches (1.0 m) above the walking/working level. Guardrail system components selected and constructed in accordance with the Appendix B to subpart M of this part will be deemed to meet this requirement.

1926.502(b)(5)

Midrails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds (666 N) applied in any downward or outward direction at any point along the midrail or other member.

1926.502(b)(6)

Guardrail systems shall be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

1926.502(b)(7)

The ends of all top rails and midrails shall not overhang the terminal posts, except where such overhang does not constitute a projection hazard.

1926.502(b)(8)

Steel banding and plastic banding shall not be used as top rails or midrails.

1926.502(b)(9)

Top rails and midrails shall be at least one-quarter inch (0.6 cm) nominal diameter or thickness to prevent cuts and lacerations. If wire rope is used for top rails, it shall be flagged at not more than 6-foot intervals with high-visibility material.



EXCERPTS FROM OSHA 1926.502, SUBPART M, FALL PROTECTION **Page 2 of 2.**

1926.502(d)

"Personal fall arrest systems." Personal fall arrest systems and their use shall comply with the provisions set forth below.

Effective January 1, 1998, body belts are not acceptable as part of a personal fall arrest system. Note: The use of a body belt in a positioning device system is acceptable and is regulated under paragraph (e) of this section.

1926.502(d)(15)

Anchorage used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds (22.2 kN) per employee attached, or shall be designed, installed, and used as follows:

1926.502(d)(15)(i)

as part of a complete personal fall arrest system which maintains a safety factor of at least two; and

1926.502(d)(15)(ii)

under the supervision of a qualified person.

1926.502(d)(16)

Personal fall arrest systems, when stopping a fall, shall:

1926.502(d)(16)(i)

limit maximum arresting force on an employee to 900 pounds (4 kN) when used with a body belt;

1926.502(d)(16)(ii)

limit maximum arresting force on an employee to 1,800 pounds (8 kN) when used with a body harness;

1926.502(d)(16)(iii)

be rigged such that an employee can neither free fall more than 6 feet (1.8 m), nor contact any lower level;

1926.502(j)

"Protection from falling objects." Falling object protection shall comply with the following provisions:

1926.502(j)(1)

Toeboards, when used as falling object protection, shall be erected along the edge of the overhead walking/working surface for a distance sufficient to protect employees below.

1926.502(j)(2)

Toeboards shall be capable of withstanding, without failure, a force of at least 50 pounds (222 N) applied in any downward or outward direction at any point along the toeboard.

1926.502(j)(3)

Toeboards shall be a minimum of 3 1/2 inches (9 cm) in vertical height from their top edge to the level of the walking/working surface. They shall have not more than 1/4 inch (0.6 cm) clearance above the walking/working surface.

They shall be solid or have openings not over 1 inch (2.5 cm) in greatest dimension.

1926.502(j)(4)

Where tools, equipment, or materials are piled higher than the top edge of a toeboard, paneling or screening shall be erected from the walking/working surface or toeboard to the top of a guardrail system's top rail or midrail, for a distance sufficient to protect employees below.

1926.502(j)(5)

Guardrail systems, when used as falling object protection, shall have all openings small enough to prevent passage of potential falling objects.



Telehandler / Rough Terrain Fork Truck USA Version . ANSI B56-6.

Telehandler & Man Platform Incident Investigation Document

Appendix G

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