AHCMOM314 - Transport machinery (Release 2)

Knowledge Evidence

Transporting machinery

- Machinery transport includes movement to, from, and around sites for various purposes.
- Diverse machinery types like dozers, excavators, loaders, and harvesters require transportation.
- The process involves loading, securing, transporting, and unloading, posing inherent risks.
- Compliance with safety regulations, including CoR and LRG, is essential during all operations.

Legislation pertaining to transport of heavy vehicles and machinery

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- Legal requirements for machinery transport vary based on factors like size, transport method, and location.
- Heavy Vehicle National Law (HVNL) applies to vehicles exceeding 4.5 tonnes GVM or ATM, including various trucks and vehicles.
- HVNL includes diverse vehicle types, including trucks, buses, articulated vehicles, and agricultural vehicles on public roads.

Legislation pertaining to transport of heavy vehicles and machinery

- NHVR regulates vehicle mass, dimensions, and loading to ensure safety and protect infrastructure.
- Fatigue management rules enforced by NHVR include work hours, breaks, and driver schedules.
- Vehicle standards for safety and roadworthiness are maintained through inspections and defect notices.
- NHVR manages permits and access for oversize/overmass vehicles on designated routes.
- Chain of Responsibility (CoR) holds all supply chain parties accountable for HVNL compliance.

Legislation pertaining to transport of heavy vehicles and machinery

- NHVR enforces load restraint guidelines to ensure safe transport of heavy vehicles.
- Load Restraint Guide outlines methods for securing loads based on vehicle type and conditions.
- Light Vehicle Load Restraint Guide assists with safe loading on vehicles up to 4.5 tonnes.
- Compliance with load restraint laws is essential for all vehicles to ensure safety and prevent damage.

Legislation pertaining to transport of heavy vehicles and machinery

- Most Australian states and territories have harmonised their health and safety legislation.
- Work Health and Safety (WHS) Act and Regulations are adopted with slight variations across states.
- Victoria retains the Occupational Health and Safety Act and Regulations.
- Despite differing terms, the principles and requirements of WHS/OHS legislation are consistent nationally.

Legislation pertaining to transport of heavy vehicles and machinery

- All workers have a duty of care to ensure their own safety and the safety of others in the workplace.
- PCBUs (employers) have a primary duty of care to ensure workplace health and safety for workers and others.
- PCBUs must provide a safe work environment, plant, systems, and facilities, and ensure information, training, and supervision.
- PCBUs are responsible for monitoring workplace health and conditions to prevent illness or injury.

Legislation pertaining to transport of heavy vehicles and machinery

- The WHS Act defines ‘worker’ broadly, including employees, contractors, volunteers, and more.
- Workers must take reasonable care for their own health and safety and avoid harming others.
- Workers must comply with reasonable instructions and cooperate with workplace health and safety policies.
- Workers have a responsibility to contribute to a safe work environment.

Machinery operating principles and operating methods used for earth moving and agricultural operations

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- Machinery operation must comply with workplace procedures and road rules when applicable.
- Site-specific competency verification is required, even with a nationally recognised licence.
- Pre-start inspections and documentation are mandatory for all machinery before operation.
- Safe operating practices include adjusting to terrain, maintaining stability, and communicating effectively.

Tying down procedures for large machinery

Tying down procedures for large machinery

- Vehicle and mobile equipment transport must adhere to Load Restraint Guide 2018 guidelines.
- Prioritise manufacturer's loading and restraint recommendations for compliance.
- Use low loaders for enhanced stability when transporting large equipment.
- Use direct lashings and/or blocking with clearly identified lashing points.

Tying down procedures for large machinery

- Use front and rear towing brackets as lashing points, ensuring secure attachments.
- Avoid round pins in towing brackets, use shackles for chain connections to prevent damage.
- Use two separate lashings for direct restraint, not a single lashing passed through a point.
- Engage steering locks on articulated machines and relieve hydraulic pressure before transport.
- Ensure lashing points are clearly identified with colour coding or labels and rated capacity.

Tying down procedures for large machinery

- Restrain all movable or rotating equipment parts to prevent shifting during transport.
- Use direct lashings for forward and rearward restraint of tracked equipment.
- Angle front and rear chains appropriately when using four chains for tracked equipment.
- Employ two chains at both front and rear for sideways restraint when front is blocked.
- Combine tie-down and direct lashings for tracked equipment on timber or rubber surfaces.

Tying down procedures for large machinery

- Use direct lashings for forward and rearward restraint of rubber-tyred vehicles and equipment.
- Maintain correct tyre pressure to prevent lashing slack and ensure securement.
- Secure chain tensioners with chain assemblies or wire to prevent detachment.
- Use vertical lashings with adequate capacity and tightness, or remove wheels to prevent bounce.

Relevant legislation with regard to vehicle operation and licensing requirements

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- Vehicle operation and licensing are governed by federal and state/territory laws.
- Specific laws vary across states and territories, covering aspects like licensing, registration, and roadworthiness.
- All vehicles used on public roads must be registered for legal operation.
- Licence classes are categorised based on vehicle type and intended use, such as C for cars and HR for heavy rigid vehicles.

Relevant legislation with regard to vehicle operation and licensing requirements

- Trailer licensing requirements depend on trailer weight and towing vehicle type.
- Car licences allow towing trailers up to 4.5 tonnes GTM, with GCM limits.
- Heavier trailers require higher licence classes like LR, HR, HC, or MC.
- Trailers must meet requirements for brakes, registration, and roadworthiness.

Workplace procedures relevant to health and safety in the workplace requirements to transport machinery safely

Workplace procedures relevant to health and safety in the workplace requirements to transport machinery safely

- Machinery transportation involves inherent risks during loading, securing, and unloading.
- Pre-operation inspections of vehicles, trailers, and equipment are essential for safety.
- Licensing, competency assessments, and adherence to SOPs are mandatory.
- Workplace and HVNL fitness for work requirements must be followed, including fatigue management.
- Safe practices include hazard identification, PPE use, exclusion zones, and manual handling techniques.

Industry practice and workplace procedures relevant to transport of machinery.

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- Industry practice and workplace procedures ensure safe and compliant machinery transport.
- Both prioritise compliance with HVNL, CoR, Load Restraint Guide, and road laws.
- Examples include securing loads, inspecting vehicles, and managing driver fatigue.
- They aim to protect all personnel involved and the public during transport operations.

Elements and Performance Criteria

Element 1. Load machines

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

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- Confirm work requirements with supervisor or client before machinery transportation.
- Work activities include preparing, loading, securing, transporting, and unloading machinery.
- Identify, assess, and control hazards associated with each task and the work environment.
- Implement controls to eliminate or reduce risks by decreasing likelihood or severity of harm.

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

- The hierarchy of control prioritises risk elimination as the most effective measure.
- If elimination is not possible, minimise risks by working through the hierarchy.
- Lower-level controls like administrative measures and PPE are less effective and should be used as supplements or last resorts.
- Prioritise higher-level controls that address hazards at the source to effectively manage risks.

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

- Eliminating hazards is the most effective control measure, achieved by preventing their introduction.
- If elimination is not feasible, substitute with safer alternatives, isolate hazards, or implement engineering controls.
- Substitution involves replacing hazardous materials or processes with less harmful options.
- Isolation physically separates the hazard from people through distance or barriers.

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

- Engineering controls use physical measures like machinery guards and safety devices.
- Administrative controls include procedures, training, and policies to minimise hazard exposure.
- Personal protective equipment (PPE) should be used as a last resort to minimise remaining risks.

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

- Risk management is a continuous cycle of identifying, assessing, controlling, and reviewing hazards.
- Identify hazards that could cause harm in the workplace.
- Assess risks to understand the nature, severity, and likelihood of harm.
- Control risks by implementing effective measures and regularly review their effectiveness.

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- Safety hazards create unsafe working conditions, such as exposed wiring or damaged flooring.
- Biological hazards include harmful substances like viruses, bacteria, and bodily fluids.
- Physical hazards are environmental factors that can cause harm, such as noise, radiation, and temperature extremes.

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- Ergonomic hazards can cause musculoskeletal injuries due to poor workstation setup or manual handling.
- Chemical hazards pose risks to workers handling dangerous substances, potentially leading to health issues.
- Psychosocial hazards negatively impact mental health, including stress, harassment, and violence.

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

- Identify hazards through various methods, including workplace inspections and consulting safety documentation.
- Risk assessment involves determining potential harm and likelihood of occurrence.
- Consequence and likelihood descriptors are used to assess risk levels using a risk matrix.
- Higher risk ratings require robust controls, potentially including hazard elimination and supervisor approval.

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- JSAs and SWMSs are risk assessment tools for safe work practices.
- JSAs detail job steps, hazards, risks, and control measures.
- SWMS are mandatory for specific high-risk construction work.
- Both tools help identify and manage risks to ensure safe work environments.

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

- Machinery transportation can be classified as high-risk construction work under certain conditions.
- High-risk scenarios include a risk of falling over 2 metres or working near a confined space.
- Working on or near traffic corridors or with powered mobile plant also qualifies as high-risk.
- A SWMS is required for any machinery transportation task meeting the high-risk definition.

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

- Hazards include moving machinery, manual handling, weather conditions, and uneven ground.
- Risks involve falls from heights, musculoskeletal injuries, and heat-related illnesses.
- Potential incidents include impact injuries and falling loads during loading, unloading, or transport.
- Safety measures and risk mitigation are essential to prevent these hazards and incidents.

1.1. Confirm activity to be undertaken, including identifying potential hazards and risks and implementing safe workplace procedures for transporting machinery and managing risks

- Inspect vehicles, trailers, machinery, and tiedown equipment before use to ensure safety.
- Conduct risk assessments for complex operations and Take 5 for simpler tasks.
- Ensure operators are licenced, competent, and authorised for machinery and vehicle operation.
- Adhere to workplace and HVNL fitness for work requirements, including fatigue management.
- Implement exclusion zones, correct PPE, and safe manual handling techniques during loading and unloading.

1.2. Prepare trailer, low loader or float for loading according to contractor policy

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- Prepare the trailer by parking it securely on a stable surface and applying brakes.
- Conduct a pre-start inspection and address any defects or hazards before proceeding.
- Ensure the trailer is clean, clear, and suitable for the machinery's weight and dimensions.
- Position and secure ramps, ensuring they are suitable for the load and free of damage.
- Establish a loading exclusion zone with barricading and signage to ensure safety during loading.

1.3. Load machine according to safe operating procedures and workplace procedures

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- Prepare the machine for loading by removing or securing attachments and checking tyre condition.
- Ensure machine brakes are functional and install necessary covers for protection during transport.
- Inspect and remove any loose items or contaminants that could pose risks during transportation.

1.3. Load machine according to safe operating procedures and workplace procedures

- Each machine has specific loading requirements based on its characteristics and transport vehicle.
- A spotter is essential for safe loading, with clear communication and hand signals established beforehand.
- Prepare the machine by securing attachments, relieving hydraulic pressure, and ensuring correct clearance.
- Distribute the machine's weight correctly during loading to avoid overloading or imbalance.

1.3. Load machine according to safe operating procedures and workplace procedures

- Align machinery with ramps for straight loading, using a low gear and steady throttle.
- Maintain alignment and gradually reduce throttle as the machine transitions onto the deck.
- Position the machine for even weight distribution and lower attachments for stability.
- Engage parking brake, secure the cabin, and follow specific instructions for each machine type.

1.4. Complete tie down procedures according to industry practice

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- Choose between tie-down and direct restraint methods based on load and vehicle characteristics.
- Tie-down restraint uses friction to secure the load, requiring adequate contact and pre-tensioned lashings.
- Direct restraint attaches the load directly to the vehicle, suitable for loads with low friction.
- Inspect fasteners and load restraint systems for correct condition and correct usage before use.

1.4. Complete tie down procedures according to industry practice

- Vehicle and mobile equipment transport must adhere to Load Restraint Guide 2018 guidelines.
- Prioritise manufacturer's loading and restraint recommendations for compliance.
- Use low loaders for enhanced stability when transporting large equipment.
- Use direct lashings and/or blocking with clearly identified lashing points.

1.4. Complete tie down procedures according to industry practice

- Use front and rear towing brackets as lashing points, ensuring secure attachments.
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1.4. Complete tie down procedures according to industry practice

- Restrain all movable or rotating equipment parts to prevent shifting during transport.
- Use direct lashings for forward and rearward restraint of tracked equipment.
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1.5. Secure machine to prevent movement in transport according to industry practice

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- Secure machines during transport to prevent load shift caused by various forces.
- Employ methods like parking brakes, wedges, and chocks to prevent movement.
- Use blocking and containing techniques to restrain loads horizontally.
- Restrain movable parts and attachments according to the Load Restraint Guide.

1.6. Display signs indicating oversized loads according to legislative requirements

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- Oversize vehicles must display warning signs exceeding 2.5m wide, 4.3m high, or 19m long.
- Signs must be at least 1200mm long and 450mm high, with a black OVERSIZE in 200mm high letters.
- Signs must be fitted horizontally with the bottom edge above the bumper or 500mm above ground.
- Signs must have a yellow reflective surface with a black border and display manufacturer information.

1.6. Display signs indicating oversized loads according to legislative requirements

- Warning lights on oversize vehicles must emit yellow rotating/flashing light visible at 500m.
- Oversize vehicles wider than 2.5m or longer than 25m need four red/yellow flags at front and rear.
- Loads projecting over 150mm require a warning light and two delineators on each projecting side.
- Delineators must be yellow, at least 300mm in size, and comply with AS 1906 reflectivity standards.

1.6. Display signs indicating oversized loads according to legislative requirements

- Oversize vehicles wider than 3m require a warning light during daytime operation.
- Oversize vehicles used at night need side markers along the sides and rear of the vehicle and load.
- A warning light is required at night for vehicles wider than 2.5m or longer than 22m.
- Oversize vehicles must use low-beam headlights during daytime operation.

1.7. Arrange permits, clearances and escorts for transporting oversized loads

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- Transporting oversize loads requires permits with specific safety and operating conditions.
- Permits may include route restrictions, travel times, and escort requirements.
- Oversize and Overmass (OSOM) permits are necessary for loads exceeding standard limits.
- Different permit classes exist based on load type and dimensions, such as Class 1 for indivisible loads.
- Operators must provide permit information to pilot and escort drivers to ensure compliance.

1.7. Arrange permits, clearances and escorts for transporting oversized loads

- Clearances are required for oversize loads to ensure safe passage through specific routes and infrastructure.
- Piloting provides warnings and guidance to oversize loads without traffic control authority.
- Escorting involves authorised personnel with the power to direct and manage traffic.
- Both piloting and escorting aim to enhance safety for oversize load movements on public roads.

Element 2. Transport machines

2.1. Plan transport route ensuring compliance with oversized loads, permits, clearances and relevant legislation

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- Plan the route using the permit and HVNL requirements, selecting the most direct and safe route.
- Review route specifics, including restricted areas, challenging sections, and stopping points.
- Use commercial trucking software or the NHVR Route Planner to assist with route planning.
- Refer to state road transport authority mapping websites and other resources for additional information.

2.2. Drive machines on or off road in compliance with relevant licensing requirements and regulations

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- Operating machinery on public roads requires specific licences and registration based on GVM.
- Machinery exceeding size or weight limits needs permits, and some may require pilot vehicles.
- Machinery must be in safe operating condition with functional safety features for public road use.
- On private land, licensing and competency requirements are determined by the landowner, not road rules.

2.3. Transport machinery safely to destination according to licensing requirements and regulations

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- Practise defensive driving by observing surroundings and anticipating potential hazards.
- Maintain appropriate speed for conditions, allowing for safe stopping distance.
- Position the vehicle to maximise space from hazards and create a safety buffer.
- Factor in reaction and response time to manage crash avoidance space.
- Reduce speed and brake gradually in wet conditions to maintain control.

2.3. Transport machinery safely to destination according to licensing requirements and regulations

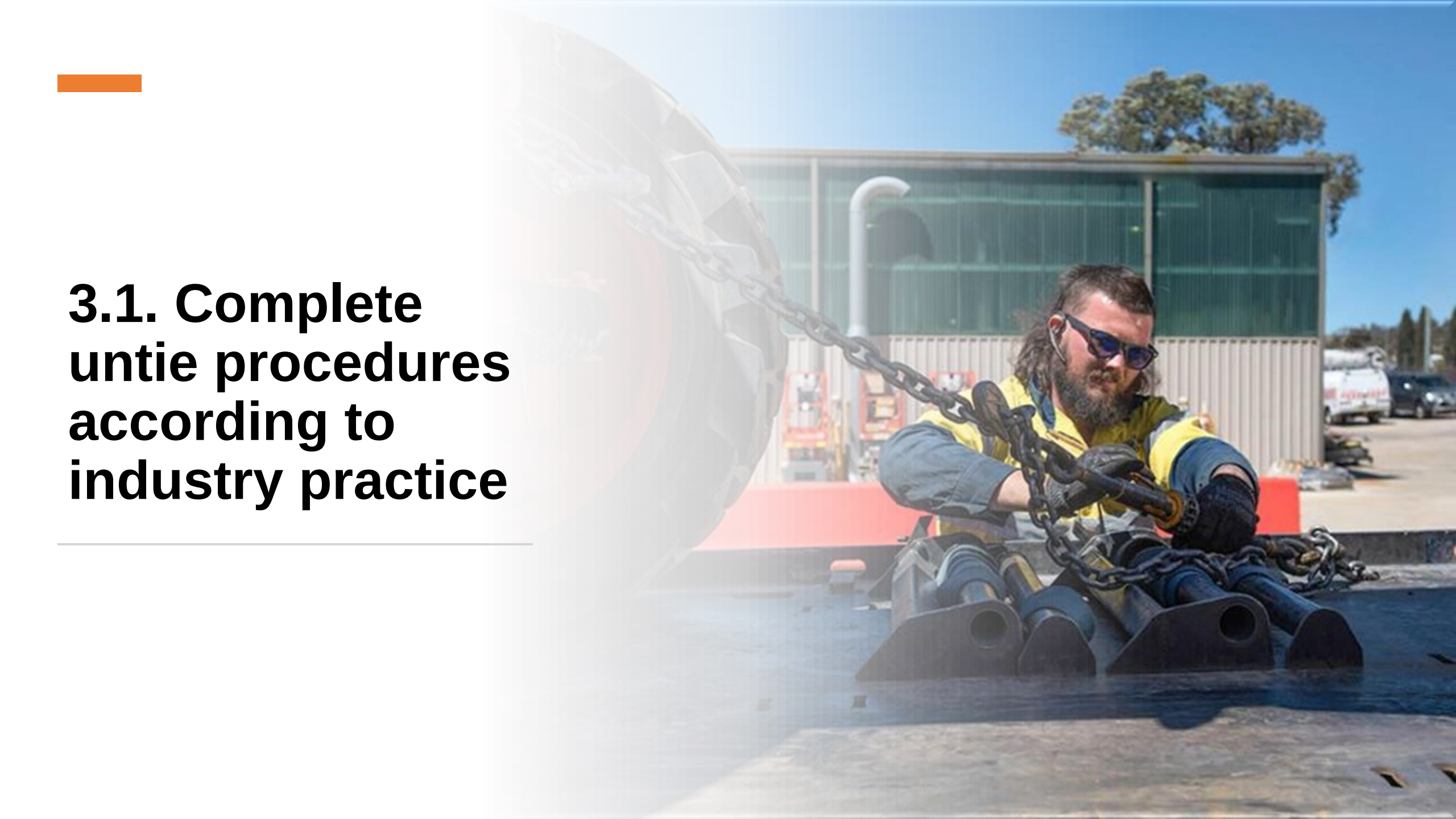
- Manage load shift to prevent danger and damage by considering forces during transport.
- Adhere to load limits to ensure safety and reduce wear on infrastructure.
- Understand the effects of load type and position on vehicle stability, steering, and braking.
- Consider external factors like wind and adjust driving practices accordingly to maintain control.

2.3. Transport machinery safely to destination according to licensing requirements and regulations

- Recheck loads and lashings regularly during the journey to ensure security.
- Frequency of checks depends on load type, road conditions, and restraint system.
- Understand load characteristics to determine appropriate checking intervals.
- Check loads after specific events like braking, bumps, or sharp turns.

Element 3. Unload machines

3.1. Complete untie procedures according to industry practice



3.1. Complete untie procedures according to industry practice

- Park in a designated, flat area and establish a loading/unloading exclusion zone (LUEZ).
- Release tension on restraints slowly and sequentially, watching for load movement.
- Collect and store restraints correctly to prevent damage or injuries.
- Double-check for any remaining restraints before unloading the machine.

3.2. Unload machines according to safe operating procedures and workplace procedures

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- Unload the machine using the reverse of the loading process, ensuring a clear unloading area.
- Secure the trailer with brakes and wheel chocks, and use ramps safely if applicable.
- Follow spotter directions and drive the machine off the trailer slowly and cautiously.
- After unloading, secure the transport vehicle, complete paperwork, and prepare for the next task.

3.3. Complete workplace documentation in required format

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- Complete all relevant documentation upon completion of machinery transportation tasks.
- Documentation may include worker diaries, pre-start checklists, and permit records.
- Ensure all documentation is legible, accurate, and in the required format.
- Maintain a record of training hours, fuel usage, and vehicle maintenance information.

End of Presentation.