

Equipment operator training and qualification

In the construction industry, machinery and equipment play a pivotal role in project success. It is the responsibility of the employer/contractor to:

- Ensure a safe work site by eliminating hazards.
- Teach recognition and avoidance of unsafe conditions.
- Use equipment, tools, and materials safely.

Developing a formalized training and qualification program can help safeguard employees and the public from severe injuries/fatalities/property damage, increase project efficiency, help promote a positive reputation, and help comply with safety and health regulations.

Remember, prior experience doesn't always guarantee safe and competent operation. The fact that an employee has prior experience operating a specific piece of machinery does not always correlate to that employee being able to operate such machinery safely and competently. This is why it is critical each employer establish an equipment qualification and training program. These resources were built to help assist with that process.

According to the Bureau of Labor Statistics, contact with objects and heavy equipment causes nearly 800 fatalities and 18,000 injuries annually in the United States.



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Equipment operator training and qualification program

Scope

This resource is applicable to a wide range of construction jobs involving equipment operation. However, it's important to note that the scope outlined in this overview does not address certain scenarios including:

- Crane certification, forklift operation, or any other equipment subject to specific OSHA and jurisdictional standards.
- Equipment such as derricks, side boom cranes, or those with a maximum hoisting capacity of 2,000 pounds or less have distinct training requirements.
- Multi-purpose heavy equipment designed for both crane and standard operations must adhere to applicable crane standards.

For guidance in those areas, companies should consult relevant industry standards.



Steps

To ensure the health and safety of your work site, it is essential to implement consistent procedures for assessing and authorizing equipment operators. Basic program steps include:

1. Establish Qualification Guidelines

- Define minimum qualifications related to experience, licensing, and safety awareness in accordance with equipment safety protocols.
- Follow [Equipment Authorization Checklist](#) to help establish and document qualification, training, evaluation, and authorization of each operator.

2. Operator Training:

- Provide comprehensive training and controlled instruction.

3. Evaluate Operators During a Skills Test:

- Assess operators' competence through evaluations and skills tests.

4. Equipment Authorization or Re-training Needs:

- Re-train or provide additional skill development if needed per skill evaluation.
- Document re-training needs if operator did not successfully pass skills assessment.

5. Monitor Operator and Site Safety:

- Continuously oversee operator performance and overall site safety.



Operator training

Operators, whether new to the company, position or equipment, should complete a comprehensive training program. This training should integrate classroom instruction with practical experience under controlled conditions. The program could cover the following essential areas:

1. Program Overview

- Understand operator responsibilities, guidelines for safe operation, and maintenance requirements.

2. Classroom and Controlled Instruction

- Deliver comprehensive training on essential equipment topics to enhance understanding and skillfulness in meeting operational standards.
 - [Hover mouse/cursor for recommended training topics.](#)

3. Awareness of Hazardous Working Conditions

- Recognize and address challenges related to weather, terrain and communication requirements at each worksite location.

4. Practical Experience

- Operators gain hands-on experience by inspecting and operating machinery under the supervision of qualified individuals in safe and designated locations. Trainers closely monitor their performance during equipment operation.



Evaluate operator abilities

[Operator evaluations](#) play a crucial role in verifying equipment operation (in the field) aligns with company standards and expectations. Operators should demonstrate their skills and knowledge to obtain and maintain authorization. Operators should safely showcase every skill on the checklist, as determined by the company.


The following addendums were created to assist in this process:

Task Specific Skills

- This is a repository of specific skills that can be incorporated into the Operator Skills Assessment based on the type of equipment being operated and exposures presented.

LOSS CONTROL SERVICES

Field operation skills test



Employee Information

Operator Name: _____ Evaluator Name: _____
Department/Division: _____ Location of Evaluation: _____
Location of Evaluation: _____

Model(s) of Authorization

Examples: Cat 320, Deere 700L, Komatsu SK715-8: _____

Skill/Activity	Ratings			Comments
	Adequate	Inadequate	N/A	
Pre-operation checks				
Startup and shutdown operation				
Operation				
Roading the equipment				

Every organization should tailor the Operator Skills Assessment to the unique requirements of the equipment and incorporate necessary skills relevant to the tasks to thoroughly evaluate operators' abilities and safety awareness

Authorization

Equipment operating authority is granted by meeting minimum qualifications, classroom training, controlled instruction, and evaluation of operator's skills by a competent individual. Authorization is documented by company designated individuals properly marking the authorization section at the bottom of the Equipment Authorization Checklist.

It is recommended company leadership include an operator authorization status level based on the experience and verified abilities, by a competent evaluator, of the operator.

Level 1 (Operator-in-Training):

- Individuals have limited prior experience operating equipment.
- Once authorized, they operate machinery under controlled and designated circumstances/jobs/tasks.
- They are subject to re-evaluation once they achieve the minimum required hours/experience to progress to Level 2.

Level 2:

- Individuals have and/or attain a higher level of prior work experience operating equipment.
- Once authorized, they operate equipment under standard jobsite oversight.
- To achieve this level, operators must meet the following criteria:
 - Fulfill established qualifications, finish operator training and successfully complete skill evaluations.
 - Have or attain a minimum level of experience/hours in the seat (as determined by the company).
 - Authorized/competent assessors can utilize the [Equipment Reauthorization form](#) for this process if moving from Level 1 to Level 2.

Resources designed to assist management with tracking and verifying qualification status of individual employees for specific equipment in the field.

Sample Operator Card

- Includes operator name and type(s) of equipment authorized to operate.
- Designed for operator to carry with them on the jobsite.

Master Operator Authorization List

- Assists management in maintaining a centralized list of authorized operators.
- Include details such as names, authorization levels, expiration dates, and equipment categories.

Reauthorization

In addition to initial authorization, all organizations should periodically re-evaluate equipment operators in accordance with their written policies. A reauthorization page has been created to assist with the various scenarios, including:

1. Qualify and authorize operator from Level 1 to Level 2.

- Ensure the operator has met the minimum experience levels (e.g., years of experience, seat hours)
- Confirm completion of required classroom instruction
- Verify successful completion of controlled instruction.
- Administer the Field Operation Skills Test, aligning with company expectations.

2. Re-evaluation of an operator following incident (accident, near miss, or noted unsafe operation). Steps include:

- Investigate the incident thoroughly to determine proper follow up efforts.
- If competent person/company leadership determines the operator could continue operating at the company, assess the operator's performance and adherence to safety protocols.
- Determine what/if additional training or corrective actions are necessary.
- Reauthorize the operator using this checklist based on the evaluation outcome and successful completion of process.

3. Periodic review of operator skills, in line with established company policies, to ensure compliance with acceptable equipment operation.

- Best Practice: Annual re-evaluation.
- Minimum Standard: Every three (3) years, in line with OSHA's forklift re-evaluation requirement (CFR 1910.178(I)(4)(ii)(E)).



Continuous monitoring

After granting authorization, it is crucial to ensure adherence to safety protocols in equipment operation. Your risk management program should continuously monitor activities related to equipment use. The following steps offer guidance on effective monitoring and management of equipment operators:

Ongoing safety assessments:

- Conduct regular jobsite observations where equipment operators are active.
- Jobsite observations should include equipment hazards or defects, operator training issues, trends identified, etc.
- Solicit feedback from equipment operators on ways to improve safety.
- Regularly review near miss or accident data and conduct [root cause analysis](#) to prevent re-occurrence.

Additional monitoring activities:

1. Regular audits of master authorization:

- Ensure employees are still employed and active.
- Verify new hires have been trained and qualified on equipment.
- Ensure re-authorizations are up to date.
- Spot check jobsite and validate operator cards.
- Address any discrepancies promptly.



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Continuous monitoring, continued

2. Training updates:

- Provide ongoing training (e.g., refresher courses, updates on safety guidelines).
- Ensure operators are aware of any changes in procedures or regulations.

3. Incident reporting and investigation:

- Promptly investigate any incidents involving equipment operation.
- Determine root causes and take corrective actions.
- Reassess operator skills and adherence to safety protocols if necessary.

4. Continuous communication:

- Maintain open communication channels with operators and supervisors.
- Encourage reporting of near misses, safety concerns, and operational challenges.



Link index

- [Equipment authorization checklist](#)
- [Equipment reauthorization](#)
- [Operator skills test \(interactive form\)](#)
- [Task specific skills page](#)
- [Operator authorization cards](#)
- [Master equipment operator list](#)

Additional resources

- [MyLossControlServices.com](#)
- [Nationwide toolbox talks](#)
- [OSHA training and reference materials library](#)
- [Common Ground Alliance 811](#)
- [CDC Construction Visibility Diagram Resources](#)

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