

Overhead Crane Risk Assessment: Operations Section

Serial Number	Inspection Items	Risk Sources	Possible Accident Characteristics and Consequences	Control Measures	Possibility (P)	Severity (S)	Risk (R)	Risk Level	Risk Color Code	Remarks
1	Trial Operation	Failure to Conduct Test Runs: No performance test was conducted for the overhead crane after installation or major overhaul. Safety devices were not functionally tested or recorded. Prescribed no-load, rated load, static load, and dynamic load tests were not performed. Daily pre-use safety test runs and safety device checks were not conducted. Abnormalities during test runs were ignored, and the crane was still put into operation.	Equipment damage and personnel injuries.	Supervision and Inspection for Installation: Proactively request supervision inspections from the local inspection agency before crane installation or conduct initial inspections after installation is completed. Strictly follow supervision and initial inspection procedures. Address all issues found during inspections, ensuring full compliance before operation. Adhere to daily pre-use inspections and test-run procedures, improve safety checklists and processes, and have results confirmed by the on-duty technical manager before operation.	4	5	20	1	Red	
2	Operator Work (General Bridge Crane)	Unqualified Crane Operators: Operations were conducted by untrained and uncertified operators. Emergency stop buttons were missing on the control console. Operational procedures and fault shutdown plans were not established. Communication devices in the driver's cab were missing or non-functional. Information exchange between operators and command personnel was poor, and unauthorized personnel entered restricted areas.	Equipment out of control, leading to equipment damage and personnel injuries.	Driver's Cabin Daily Checks: Conduct daily checks to ensure equipment in the driver's cabin is intact, operation buttons function properly, and communication devices are operational. Maintain an unobstructed view from the driver's cabin. Only certified crane operators are allowed to operate from the cabin. Provide safety training for operators and record any faults and causes during operation. Set warning signs to prevent unauthorized personnel from entering the cabin.	3	5	10	3	Yellow	
3	Command Personnel (General Bridge Crane)	Unqualified Command Personnel: Command personnel lacked required training and certification. Command instructions were not performed properly, and communication with operators was poor. Safety protective equipment was not fully worn.	Equipment damage and personnel injuries.	Command Personnel Training and Certification: Command personnel must be certified through training and examinations. They should be proficient in various command signals and wear proper safety protective gear during operations.	3	5	10	3	Yellow	
4	Slinging Personnel	Improper Slinging Operations: Slinging operations did not adhere to crane specifications, resulting in overload lifting. Improper sling positioning led to dropped loads.	Equipment damage and personnel injuries.	Slinging Personnel Competency: Slinging personnel must be familiar with the characteristics of the crane and proficient in proper slinging methods for lifting objects.	3	5	10	3	Yellow	

5	Bridge Crane Equipment Inspection	Inadequate Equipment Protection: Rotating equipment lacked protective guards, or guards were incomplete. Maintenance work was carried out while the crane was in operation.	Malfunction, equipment damage, and personnel injuries.	Daily Inspection of Safety Devices: Safety devices must be inspected daily to ensure they are functional. Only certified crane operation and management personnel are permitted near the equipment. Provide safety training for crane personnel and restrict access to the operational area. Provide safety briefings to non-crane personnel entering the area and ensure they are accompanied by authorized personnel. High-voltage equipment operations should involve at least two persons.	3	3	9	3	Yellow
6	Maintenance Work	Unsafe Maintenance Practices: Maintenance personnel were unlicensed or performed unapproved tasks. Safety measures and conditions were inadequate, and inspections were incomplete or unverified. Maintenance work was conducted while the crane was in operation.	Falling, impact, electric shock, collision, crushing, equipment damage, and personnel injuries.	Approval and Safety Measures for Maintenance Work: Only trained and certified personnel may perform maintenance. Maintenance work must go through the approval process with corresponding safety measures in place. On-site maintenance should have designated supervisors and acceptance procedures. Records of maintenance work must be archived. Maintenance should not be performed while the crane is in operation.	3	4	12	3	Yellow
7	Working at Heights	Unsafe Work Conditions: Workers exhibited poor physical or mental states and failed to wear personal protective equipment correctly. Outdoor work occurred in adverse weather conditions, such as wind speeds above level 6, without reliable communication with crane operators. Violations in operations and command practices were present.	Falling, impact, electric shock, collision, crushing, equipment damage, and personnel injuries.	Revised High-Altitude Work Procedures: Update high-altitude operation procedures and regularly organize safety training for certified workers. Before operations, safety officers or supervisors must check worker conditions, complete approval forms, and provide safety briefings. Workers should wear appropriate protective equipment and take necessary safety measures.	4	5	20	1	Red
8	Welding Work	Unsafe Welding Operations: Welding personnel lacked certification and were in poor physical or mental condition. Personal welding protective equipment was not worn properly. Outdoor welding was conducted in adverse weather, equipment grounding was unreliable, flammable materials were not isolated, and fire extinguishers were not prepared nearby.	Electric shock, burns, equipment damage, and personnel injuries.	Revised Welding Safety Procedures: Update welding safety operation procedures. Conduct regular safety training for certified welding personnel. Workers must wear proper protective equipment, implement fire prevention measures on-site, and take any other necessary safety precautions.	2	5	10	3	Yellow