

GREEN BRIEFING

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"Cost to Workers: ZERO. Benefit: LIFETIME"

Courtesy: GMS

Till Date

911	14,923	70
Training Sessions	Workers Trained	Topics Covered

SSORP
Sustainable Ship and Offshore Recycling Program

LRQA VERIFIED

SAFE LIFT, SAFE SHIFT: SAFE CRANE & WINCH OPERATION IN SHIP RECYCLING

In a ship recycling yard, cutting is only one stage of removing steel. Heavy blocks, deck plates, machinery and structural sections must be moved from the vessel to designated processing areas within the facility. Crawler cranes, mobile cranes and wire-rope winches are used for these operations, often while cutting, material handling and other activities continue nearby.

These operations involve considerable weight and force. A suspended steel section can swing unexpectedly. A crane boom can fail if its working capacity is exceeded. A damaged wire rope can snap under tension. A worker standing close to a moving section can become trapped between the load and another structure.

The danger is not limited to crane drivers and winch operators. Helpers, riggers, cutters, signallers and workers passing through the area can also be exposed. A lifting operation that appears routine to the operator may create serious hazards for somebody working below or beside the movement path.

Safe crane and winch operation therefore begins before the equipment moves. The load, lifting method, equipment condition, ground stability, worker positions and communication arrangements must be checked before permission is given to proceed.

Dr. Anand Hiremath, CEO of the Sustainable Ship and Offshore Recycling Program (SSORP), explains:

"Every heavy lift involves decisions that affect people beyond the crane operator. Management must provide suitable equipment and trained personnel, while supervisors must ensure that the load, working conditions and lifting arrangements have been checked. No movement should begin until the team understands the risks."

This month's Green Briefing focuses on safe crane and winch operations in ship recycling, with particular attention to equipment inspection, load limits, rigging, exclusion zones, communication, weather conditions, maintenance and emergency response.

TRAINING REACH AND PRACTICAL FOCUS

Crane and winch safety training is intended for everyone working in the ship recycling yard, not just those operating the equipment.

Crane drivers, winch operators, riggers and helpers need to understand equipment limitations, inspection requirements and safe operating procedures. Supervisors must know how to assess a planned lift, verify the arrangements and respond when conditions change.



Other workers need to recognise lifting zones, suspended-load hazards and tensioned wire ropes. They must also understand warning signs, hand signals and their responsibility to report unsafe conditions.

The training places particular emphasis on practical questions. Is the load weight known? Can the crane safely handle that weight at the required radius? Has the wire rope been inspected? Is the ground suitable? Are workers clear of the lifting route? Who is giving the signal?

These questions should be answered before the lift or pull begins

UNDERSTANDING CRANE AND WINCH HAZARDS

Ship recycling presents challenging lifting conditions because dismantled sections are often large, irregularly shaped and difficult to balance.

A steel block may contain stiffeners, brackets or attached machinery that affect its weight distribution. If these factors are not considered, the load may tilt or swing when lifted.

Crane boom failure can result from overloading, incorrect boom angle, excessive working radius, damaged structure or unsuitable ground conditions. Mobile cranes also depend on correct outrigger positioning and adequate ground support.

Hooks and chains can fail because of worn links, stretched components, deformed hooks, missing safety latches or sudden loading. Wire ropes may fail after developing broken wires, corrosion, kinks or crushing damage.

Winches introduce additional hazards. Workers can become trapped near rotating drums, moving ropes or sections being pulled. A failed rope or anchor can release stored tension suddenly, exposing anyone standing nearby to serious injury.

Equipment breakdowns involving brakes, hydraulic systems or limit switches can also cause unexpected movement.

The work team must therefore assess both the equipment and the surrounding area. A safe operating position for the crane driver does not mean that everyone near the load is protected.

LIFTING AND PULLING DANGER ZONES

RED ZONE: Never stand beneath or near a suspended load where falling or moving steel could strike you.

YELLOW ZONE: Only authorised personnel may enter the designated swing and working area.

WINCH LINE: Never stand beside, cross or approach a tensioned wire rope.

MOVING LOAD: Keep clear of the space between the load and fixed structures.

RESTRICTED AREA: Do not remove barriers or enter until the responsible supervisor confirms that the operation is safe.

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PLANNING THE LIFT BEFORE MOVEMENT BEGINS

Lifting preparation should begin by identifying the steel section, its estimated weight, lifting points, movement route and intended landing position.

The supervisor and lifting team need to consider whether the section is fully separated from the vessel, whether surrounding structures may obstruct movement and whether the load can be handled without exposing nearby workers.

The crane's position is also important. The load must be lifted and landed without exceeding the crane's safe working load (SWL) at any point during the operation, taking into account the actual working radius.



A route that requires the crane to reach farther than originally planned can change the safe working conditions. Nearby cutting activities, temporary steel storage and vehicle movement may also affect the lifting area.

Mr. Rahul Singh, SSORP Coordinator in Alang, explains:

“Before lifting a cut block, the team should know exactly where it will travel and where it will be placed. Workers sometimes pay attention only to the lifting point. The landing area, surrounding structures and people moving through the yard must also be checked.”

The lifting plan must reflect the actual worksite. If the proposed route becomes obstructed or the crane position changes, the supervisor should review the arrangement before movement continues.

UNDERSTANDING SAFE WORKING LOAD AND WORKING RADIUS

Every crane and winch has operating limits that must be respected.

For cranes, Safe Working Load (SWL) must be considered in relation to the actual equipment configuration and working radius. The working radius is the horizontal distance between the crane's centre of rotation and the load's centre.

As the radius increases, the crane's permitted lifting capacity generally decreases. A load that can be lifted safely near the crane may exceed its capacity when moved farther away.

The total weight supported by the crane must include the steel section, slings, shackles, spreaders, hook block and other lifting accessories, as applicable to the load chart.

Operators must use the correct load chart and rated capacity indicator for the actual configuration. The crane's maximum advertised capacity should never be treated as its capacity at every working position.

Winch operators must also respect the equipment's rated pulling capacity and approved operating arrangement.

When the actual load or working capacity is uncertain, the operation should not proceed until the information has been confirmed.

INSPECTING EQUIPMENT BEFORE USE

Every crane and winch has operating limits that must be respected.

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Daily pre-operation inspections are intended to identify defects before lifting or pulling begins.

Crane drivers and helpers should examine wire ropes, hooks, chains, safety latches, brakes, limit switches, alarms and visible structural components. Hydraulic leaks, loose parts, unusual sounds and abnormal movement must also be investigated.

Wire ropes require particular attention. Broken wires, corrosion, kinks, crushing and damaged end connections can reduce their strength. Sheaves and drums should be checked for damage, and the rope should be correctly seated.

Hooks should be examined for deformation, damaged safety latches and excessive wear. Chains and shackles should be inspected for visible damage and suitability for the load.

Defective lifting equipment must be removed from service according to the yard's procedure. It should not remain available for another operator to use accidentally.

Mr. Amrish Pandey, SSORP Coordinator in Alang, explains:

“A damaged hook or wire rope should never be treated as something that can wait until the next maintenance day. If the defect is found before lifting, the correct action is to stop, report it and arrange the necessary inspection or replacement.”

Periodic maintenance supports these daily checks. Weekly activities may include lubrication, inspection of sheaves and drums, and checking bolts, pins and guards. Monthly examinations may cover boom structure, welds, hydraulic cylinders, hoses, electrical systems and load indicators.

The manufacturer's instructions and the yard's maintenance programme determine the applicable inspection intervals and methods.

CALIBRATION, LOAD TESTING AND RECORD KEEPING

Equipment inspections alone do not replace the need for periodic calibration and load testing.

Cranes and winches must be tested by competent persons before first use, after major repairs or modifications, and at the intervals required by applicable rules and equipment procedures.

A calibrated load cell may be used during appropriate testing arrangements to verify the applied load.

Inspection and testing results should be documented. Maintenance records need to identify defects, the date they were reported, corrective actions, repairs and the person who authorised the equipment's return to service.





Operation logs and incident reports provide additional information about recurring problems.

A crane or winch should not return to normal operation simply because a repair has been completed. The required checks and approval must also be completed.

RIGGING, TEST LIFTING AND CONTROLLED MOVEMENT

Correct rigging is necessary to keep the load secure throughout lifting.

Slings, chains, shackles and hooks must be suitable for the weight and shape of the section. The rigging arrangement should distribute the load correctly and prevent unwanted movement.

Before a full lift, the operator should conduct a controlled test lift. The load is raised slightly and held while its balance, rigging and brake performance are checked.

If the section tilts unexpectedly or the rigging shifts, it should be returned to a safe condition and reassessed.

During movement, the crane operator should avoid sudden starts, abrupt braking and shock loading. The load should be moved along the agreed route and lowered onto a prepared landing area.

Workers must not attempt to stop a heavy swinging load with their hands or stand beneath it while adjustments are made.

A lift is completed only when the load is securely landed and the lifting equipment can be released safely.

SAFE WINCHING AND THE SNAP-BACK HAZARD

Winches are commonly used to pull heavy steel sections across the recycling yard, including operations near the shoreline and intertidal areas.

Before pulling begins, the anchor points, wire rope, drum and end connections must be checked. The load's path and possible obstructions should also be identified.

A tensioned wire rope stores mechanical energy. If the rope breaks, an anchor slips or a connection fails, the released energy can cause the rope to recoil rapidly.

Workers should remain outside the line of pull and the potential snap-back area. Nobody should touch a moving rope, approach the drum unnecessarily or stand between the moving section and a fixed obstruction.

Pulling should begin slowly and continue steadily under the agreed signals.

If the load becomes stuck, the rope spools incorrectly or the anchor moves, the operator must stop. Applying additional force without identifying the problem can increase the risk of failure.

Muhammad Usman, Coordinator in Pakistan, explains:

“A wire rope under tension must always be treated with care, even when it is not moving. Workers should stay outside the pulling line and report any unusual movement, sound or change in the anchor position before the operation continues.”

COMMUNICATION AND SIGNALLING

Clear communication is necessary because crane operators may not be able to see every part of the lifting or landing area.

One designated signaller should direct each lift using agreed hand signals or radio communication. The operator must understand the instructions before movement begins.

Other personnel should not distract the operator or issue conflicting movement instructions.

Every worker must understand the STOP signal. Anyone who identifies an unsafe condition can call for the operation to stop.

If a radio fails, the signaller is no longer visible or an instruction becomes unclear, movement must stop until communication is restored.

WHEN CRANE OR WINCH WORK MUST STOP

The load weight, working radius or rated capacity is uncertain.

The rope, hook, brake, anchor or another critical component shows a defect.

An unusual sound, unexpected movement or equipment malfunction occurs.

A worker enters the lifting or pulling exclusion zone.

The designated signal or radio communication is lost.

Wind, lightning, high currents, poor visibility or unstable ground make the operation unsafe.

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If any condition is unsafe or unclear, stop and inform the supervisor. Resume only after the problem has been assessed and corrected.

TRAINED PERSONNEL AND STANDARD OPERATING PROCEDURES

Crane and winch operations should be carried out only by trained, assessed and authorised personnel.

A typical operator training process includes induction, supervised practical experience, assessment, written authorisation and periodic refresher training.

Experience is valuable, but familiarity with a machine does not replace inspection, load calculations or proper communication.

Standard Operating Procedures (SOPs) must reflect the equipment, work activities and actual layout of the recycling facility.

Procedures should define responsibilities, pre-use checks, the operating sequence, stop-work conditions, emergency actions and required records.

This training is provided FREE of cost to workers, proudly sponsored by GMS under the Sustainable Ship & Offshore Recycling Program (SSORP).

HSE personnel must ensure that operators and helpers understand the safety procedures applicable to the equipment involved in their assigned tasks.

PERSONAL PROTECTIVE EQUIPMENT AND WORKER POSITIONING

Workers involved in lifting and pulling operations should wear appropriate PPE, including safety helmets, gloves, safety boots and high-visibility clothing.

Eye protection, hearing protection and fall protection may also be required depending on the work and location.

PPE should fit correctly, be maintained and be replaced when damaged.

Normal PPE does not provide protection against the impact of a falling steel section or the energy released by a snapping wire rope.

Preventing exposure is therefore a stronger control. Workers should remain outside restricted areas rather than depend on protective clothing to reduce the consequences of entering them.

WEATHER, GROUND CONDITIONS AND INTERTIDAL OPERATIONS

Weather can change the safety of a lifting or pulling operation during a shift.

Strong winds may cause suspended loads to swing or become difficult to control. Heavy rain can affect ground stability, while poor visibility can interfere with signalling and safe load movement.

Crane operations must stop when wind exceeds the manufacturer's permitted limit. Lightning and other unsafe weather conditions also require work to stop and equipment to be secured.

Ground stability needs attention, particularly where mobile cranes use outriggers or crawler cranes operate on uneven surfaces.

In intertidal areas, high currents and changing water conditions can affect winch operations, anchoring and material movement.

Supervisors should reassess conditions when weather or ground conditions change. Work should resume only after the operation has been confirmed safe.

EMERGENCY READINESS AND RESPONSE

Equipment failure, a dropped load, wire-rope snapping, crane instability or sudden severe weather can create an emergency.

Workers need to know how to stop the operation, warn others and raise the alarm. The emergency response should follow the yard's approved Emergency Preparedness and Response Plan.

If a crane or winch behaves abnormally, the operator should use the appropriate safe stopping procedure. Nearby workers should move away from the affected area without approaching the load or tensioned rope.

The supervisor must arrange for the area to be secured and activate the required emergency support.

Only trained and authorised personnel should carry out recovery operations involving damaged equipment, unstable loads or tensioned lifting systems.

IF A LIFTING OR WINCHING INCIDENT OCCURS

- Stop all movement using the safe emergency stop procedure.
- Warn workers and keep everyone clear of the affected area.
- Raise the alarm and report the exact location and hazard.
- Do not approach a suspended load, damaged rigging or tensioned wire rope.
- Activate trained emergency responders and arrange first aid where required.
- Keep the equipment out of service until it has been inspected and approved for use.

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LEARNING FROM A PRACTICAL LIFTING SCENARIO

Consider a steel block being removed from a vessel during dismantling.





The lifting points have been attached, but when the crane raises the block slightly, one side begins to tilt. The team also realises that the landing area requires the crane to reach farther than originally planned.

Continuing the lift would introduce additional uncertainty. The block's balance may be incorrect, and the revised working radius may reduce the crane's available capacity.

The safe response is to stop, return the section to a safe condition and review the lifting arrangement.

The team must confirm the load weight, rigging, balance, working radius and landing position before another attempt is made.

This example demonstrates why the test lift and load-chart verification are necessary. They allow problems to be identified before the section is fully suspended or moved across the worksite.

When incidents or near misses occur, the review should consider equipment condition, planning, supervision, communication and training, rather than focusing only on the action of the operator.

FIELD OBSERVATIONS AND REGIONAL COORDINATOR INSIGHTS

Practical crane and winch training is most useful when workers can connect the safety rules to the machinery and movement routes on their own recycling yard.

In Alang, training can focus on identifying the complete lifting route, including areas beneath the suspended load, nearby access paths and the final landing location.

Mr. Rahul Singh's emphasis on checking the surroundings helps workers understand that a lift affects people who may not be directly involved in the operation.

Mr. Amrish Pandey's approach to equipment defects supports practical demonstrations of hook, chain and wire-rope inspection. Workers should learn to identify damage and report it before the equipment is used.

In Pakistan, attention can be given to winch anchoring, rope condition, line-of-pull hazards and safe worker positioning during movement of large sections.

In Bangladesh, the focus can include communication, exclusion zones and the importance of responding immediately to unsafe movement.

Mr. Zamil Uddin, SSORP Coordinator in Bangladesh, explains:

"A worker does not need to operate the crane to help prevent an accident. If somebody enters the lifting area or a suspended section starts moving unexpectedly, the worker should warn others and call for the operation to stop. The warning must be taken seriously."

These training discussions should help workers identify hazards in normal operations and understand the specific action expected when something is unsafe.

PRACTICAL PRE-LIFT AND PRE-PULL CHECKLIST

Before starting crane or winch operations, the work team should confirm:

- The lifting or pulling plan has been agreed and the load weight verified.
- The crane or winch is suitable for the planned operation.
- The total suspended weight is within the crane's load chart at the actual working radius.
- Pre-use inspections have been completed and recorded.
- Slings, shackles, hooks, ropes and safety devices are in acceptable condition.
- Ground conditions, outriggers or winch anchor points have been checked.
- Exclusion zones have been established and unnecessary personnel removed.
- The designated signaller and communication method are confirmed.
- Weather, tide and current conditions are suitable.
- Emergency arrangements and stop-work instructions are understood.

During the operation, workers must continue watching for abnormal movement, equipment defects, changing ground conditions and people entering restricted areas.

If any answer is NO or uncertain, the operation should not begin or continue until the condition has been reviewed.

SAFER LIFTING THROUGH PREPARATION AND CONTROL

Crane and winch operations are necessary throughout ship recycling, but every movement must be planned and controlled.

A steel section that was lifted safely yesterday does not prove that today's operation is safe. The load, working radius, equipment condition, ground, weather and nearby activities may be different.

A safe lifting sequence begins by identifying the load and verifying its weight. The team then selects suitable equipment, checks the rigging, confirms the ground and route, establishes exclusion zones and agrees communication. A controlled test lift follows before the section is moved and landed safely.

For winching, the anchor, rope, drum and pulling route must be checked before tension is applied. Workers must remain clear throughout the operation.

The main life-saving messages should remain easy to remember.

PLAN THE LIFT BEFORE MOVEMENT BEGINS.

NEVER EXCEED THE RATED SAFE WORKING LOAD (SWL).

INSPECT THE EQUIPMENT BEFORE EVERY USE.

NEVER STAND UNDER A SUSPENDED LOAD OR BESIDE A TENSIONED ROPE.

ONE SIGNALLER DIRECTS THE MOVEMENT. ANYONE CAN CALL STOP.

If workers and supervisors follow these controls consistently, lifting and pulling operations can proceed without placing people unnecessarily in danger.

“The strength of a team is shown when someone speaks up and everyone listens.”

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ROUND-UP OF MONTHLY TRAINING ACTIVITIES – SAFE CRANE & WINCH OPERATION IN SHIP RECYCLING

Country	Training No.	Yard	Course Date	No. of Trainees
Bangladesh	912	MAK Corporation	04-10-2026	12
	913	Janata Steels Ltd.	10-10-2026	10
	914	Mahinur Ship Recycling	12-10-2026	10
	918	S. H. Enterprise	19-10-2026	15
	919	Mehreen Ship Recycling	22-10-2026	14
	920	Z. H. Steel Ltd.	24-10-2026	23
India	915	Leela Ship Recycling Pvt. Ltd.	14-10-2026	31
	916	Inducto Steel Ltd.	16-10-2026	12
	917	Leela Responsible Recycling LLP	16-10-2026	14
	921	Shree Ram Shipping Industries Pvt. Ltd.	24-10-2026	19
	922	Leela Greenship Recycling Pvt. Ltd.	24-10-2026	17
	923	Green Tara Recycler LLP	27-10-2026	24
Pakistan	924	Jamaluddin & Co	28/10/2026	70
	925	Prime Green Recyclers	28/10/2026	29
	926	Sap Green Recycling	28/10/2026	14

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