GREEN BRIEFING

JULY 2025 EDITION

Till Date

723	11,081	69
Training Sessions	Workers Trained	Topics Covered

SSORP
Sustainable Ship and Offshore Recycling Program

LRQA VERIFIED

SAFE GAS CUTTING OPERATIONS DURING SHIP RECYCLING

Gas cutting, or oxy-fuel cutting, is one of the most common and critical activities in ship recycling yards. It enables workers to dismantle complex steel structures, cut heavy plates, and access internal spaces of end-of-life ships. However, this thermal process, which combines flammable gases like LPG or PNG with oxygen, also presents one of the highest fire, explosion, and respiratory risks in the ship recycling environment.

When conducted without appropriate safety controls, gas cutting can turn deadly within seconds. Training, equipment maintenance, vigilance, and a commitment to safety protocols are essential to ensure that workers remain safe during these high-risk operations.

A HIGH-RISK TASK AT THE CORE OF SHIP RECYCLING

The dangers associated with gas cutting are manifold. As Dr. Anand Hiremath, CEO of the Sustainable Ship and Offshore Recycling Program (SSORP), explains:

> **"Gas cutting is integral to ship dismantling, but the hazards, from fire outbreaks to toxic gas exposure, make it one of the most dangerous tasks on a yard. Managing this risk begins with awareness, preparation, and disciplined execution of safety procedures."**

Gas cutting involves the use of a high-temperature flame to melt steel and pure oxygen to blow away the molten metal. The setup typically consists of oxygen cylinders or a secure oxygen tank pipeline, LPG or PNG gas supply, flashback arrestors, regulators, cutting torches, and hoses. The potential for explosion, flashbacks, leaks, or fire is ever-present, especially in confined spaces or elevated areas.

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UNDERSTANDING THE TOOLS AND RISKS

Gas cutting equipment is deceptively simple, but each component must be treated with respect. All regulators should be set within manufacturer-approved pressure limits. Non-return valves and flashback arrestors are critical for preventing flames from traveling backward into hoses and cylinders, a leading cause of explosions in cutting operations.

Color-coded hoses (red/orange for fuel, blue for oxygen), leak checks using soap solution (never flames), proper securing of supply lines, and regular equipment inspection are essential daily routines. Workers must understand how these systems function and how even minor damage can result in catastrophic consequences.

> **"Flashbacks and hose damage are silent killers. We see many accidents happen when workers get used to routine and stop inspecting hoses or assume equipment is in good condition. We drill this into every training session: inspect, verify, and never assume."**
> - Mr. Rahul Singh, SSORP Coordinator in Alang

PRE-WORK PREPARATION: PLANNING IS PROTECTION

Before a single torch is lit, the job site must be inspected and prepared. This begins with a thorough Job Safety Analysis (JSA) and Risk Assessment.

Dynamic Risk Assessment — Stay Alert, Stay Alive

Gas cutting tasks are fluid. Hazards can emerge after work begins. Dynamic Risk Assessment (DRA) involves:

- Constant situational awareness
- Re-evaluating risks as work progresses
- Stopping work if new hazards appear
- Reporting changes to supervisors immediately

“Dynamic risk assessment is the safety net that moves with you.”
- Mr. Rahul

The area must be deemed safe for entry and safe for hot work. This includes checking for the presence of flammable vapors, verifying structural integrity, ensuring proper ventilation, and confirming that no unauthorized personnel are in the vicinity. If work is to be conducted in a confined space, oxygen levels and toxic gases must be monitored, and emergency response plans must be in place.

“Preparation is everything. If you walk into a job with your torch ready before assessing the space, you’re gambling with your life.”
“In confined spaces, especially, the margin for error is nearly zero.”
- Mr. Muhammad Usman, SSORP Coordinator in Pakistan

Confined Space Essentials

- Atmospheric testing for oxygen, toxic, and flammable gases
- Trained attendant posted at entry
- Lifelines and harnesses for workers
- Emergency retrieval and ventilation procedures
- Fire watch present outside the space

THE HOT WORK PERMIT SYSTEM: NOT JUST PAPERWORK

One of the most crucial elements in preventing gas cutting accidents is the Hot Work Permit (HWP) System. A valid HWP confirms that:

- The area has been inspected for flammables
- Necessary fire protection is in place
- A fire watch is assigned and trained
- Emergency contact procedures are communicated
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- Emergency contact procedures are communicated

“Permits are not just administrative hurdles. They are life–saving procedures in documented form.”
“We train yard supervisors to treat every permit like an accountability contract, with themselves and their teams.”
- Mr. Amrish Pandey, SSORP Coordinator in Alang

CUTTING AT HEIGHT: DOUBLING THE DANGER

Cutting at height adds another layer of complexity. The risk of falling, dropping tools, or initiating a fire from falling molten slag becomes very real. Workers must be always tied off, and proper platforms or scaffolds must be used instead of unstable ladders or makeshift supports.

“One spark can travel, one slip can end a life.”
“We emphasize using guardrails, harnesses, and netting for any elevated gas cutting work. You cannot afford shortcuts here.”
- Mr. Zamil Uddin, SSORP Coordinator in Bangladesh

Minimum Safety Measures for Cutting at Height

- Certified full-body harnesses with double lanyards
- Steel scaffolds with guardrails and toe boards
- Barricaded drop zones below the cutting area
- Fire blankets to protect lower levels
- Dedicated fire watch for elevated work zones

FIRE PREVENTION AND EMERGENCY RESPONSE

Gas cutting is classified as hot work for a reason. Fire is an omnipresent threat. Prevention begins with clear planning and continues through active vigilance.

Fire extinguishers appropriate to the cutting task (usually Class B and C) must be available, inspected, and easily accessible. Fire watch personnel must be trained in extinguisher use and remain on post not only during but for at least 30 minutes after work ends.

"In most fire cases we've studied, the flame didn't come during cutting, but from a smoldering ember left behind."
"Post–work monitoring is as important as the job itself."
- Dr. Anand Hiremath

Workers must also be trained to recognize flashbacks, backfires, and gas leaks. Daily leak tests using soap solutions, not flames, are mandatory.

Fire watch responsibilities

- Monitor for signs of fire or smoldering debris during and after work
- Know exact locations of fire extinguishers and alarms
- Communicate with workers during cutting operations
- Perform visual checks of nearby flammable materials
- Initiate evacuation and emergency procedures as needed

PERSONAL PROTECTIVE EQUIPMENT (PPE): THE LAST LINE OF DEFENCE

PPE cannot replace good practice, but it can save lives when something goes wrong. Required PPE for gas cutting includes:

- Flame-resistant coveralls
- Respiratory protection (especially in confined or poorly ventilated areas)

- Heat-resistant gloves
- Safety boots with steel toe and non-slip soles
- Eye protection (goggles or face shields)
- Helmets with chin straps
- Hearing protection (due to cutting noise and proximity to heavy machinery)

"PPE doesn't prevent mistakes, but it can mitigate the outcome of one. We've seen burns, eye injuries, and even respiratory issues avoided because workers were properly suited."
- Mr. Rahul Singh

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Workers should also practice STOP WORK authority, meaning anyone can halt operations if they notice unsafe conditions, and peer-checking, where team members look out for one another.

REINFORCING SAFE BEHAVIOURS AND YARD-WIDE CULTURE

No safety program succeeds in isolation. The culture of the yard, defined by management's enforcement of safety protocols, open communication, and access to quality training, determines whether gas cutting is managed safely.

"Safety is not a worker's burden alone. Yard owners must create an environment where safety procedures are respected, PPE is available, and shortcuts are discouraged."
"We train both workers and supervisors to ensure a shared understanding of safe practices."
- Mr. Zamil Uddin

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SSORP's approach includes hands-on demonstrations, simulation of flashback incidents, JSA walkthroughs, and practical PPE use.

EQUIPMENT RELIABILITY AND MAINTENANCE

Even the best training cannot compensate for faulty gear. All components used in gas cutting, cylinders, regulators, hoses, and torches must be regularly inspected and maintained.

"Damaged gear must be removed from service immediately."
"We advocate for regular inspection logs, proper storage practices, and equipment tagging systems."
- Dr. Anand Hiremath

Safe Equipment Checklist

- Leak test hoses and joints daily with soap solution
- Inspect regulators for damage or corrosion
- Ensure flashback arrestors are installed and functional
- Replace cracked or damaged hoses
- Store cylinders upright, away from heat and direct sunlight
- Never use expired or uncertified equipment

Continuous Learning and Improvement

Safety in gas cutting is not static. It evolves with technology, training, and lessons from past incidents. SSORP works to continuously raise safety standards by offering free training to yards across the Indian Subcontinent, aligned with the Hong Kong Convention (HKC) on safe and environmentally sound ship recycling.

"We believe in consistent messaging, hands–on training, and empowering workers with the confidence to act safely."
. "We don't just train people to do tasks. We train them to think critically about risk."
- Dr. Anand Hiremath

Gas cutting is indispensable in ship recycling, but it must be approached with respect, precision, and unwavering safety commitment. Through training, culture, and collaboration between management and workers, the risks can be effectively mitigated.

"The torch can be a tool or a weapon depending on how it's used."
. "We don't just train people to do tasks. We train them to think critically about risk."
- Dr. Anand Hiremath

“It’s about responsibility, personal and shared.”
“Because in this line of work, there’s rarely a second chance.”
- Mr. Zamil Uddin

Before You Cut – Your Daily Safety Checklist

- JSA and hot work permit completed
- Area cleared, ventilated, and fireproofed
- PPE worn and checked
- Equipment inspected and leak tested
- Fire extinguishers and fire watch in place
- Communication and emergency plan established
- Buddy check completed
- STOP WORK authority understood

ROUND-UP OF MONTHLY TRAINING ACTIVITIES – SAFE GAS CUTTING OPERATIONS

Country	Training No.	Yard	Course Date	No. of Trainees
Bangladesh	710	Asadi Steels Ltd.	09/07/2025	22
	713	Chittagong Ship Breaking & Recycling Ind.	13/07/2025	20
	716	Janata Steels Ltd.	17/07/2025	17
	719	BOB Recyclers	22/07/2025	25
	720	MAK Corporation	24/07/2025	20
	723	Ferdous Steel Ship Recycling Industries	29/07/2025	23
India	711	Leela Sustainable Ship Recycling Pvt Ltd	12/07/2025	12
	712	Green Tara Recycler LLP	12/07/2025	20
	714	Leela Ship Recycling Pvt. Ltd.	16/07/2025	21
	715	Kamdar & Associates	16/07/2025	14
	717	Sagar Laxmi Ship Breakers.	18/07/2025	23
	718	Shree Ram Vessel Scrap Pvt. Ltd.	19/07/2025	18
Pakistan	721	Jamaluddin & Co	24/07/2025	10
	722	Prime Ship Breakers	24/07/2025	15

"SSORP is the only ship recycling program to be Verified and Vetted by Lloyd's Register Quality Assurance."

A crucial aspect of the SSORP is to increase occupational health and safety standards in ship recycling yards. Workers receive hazard–specific training to raise awareness and help to manage workplace risks. Training conducted through the SSORP is delivered free of charge to the yards and the training content is regularly reviewed to ensure it reflects best practices.

If you would like to find out more about the SSORP, or are interested in working with us to recycle your vessel/offshore asset in a responsible and HKC compliant manner, please contact us:

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