



WRC 2025 Croatia Risk Assessment



RISK ASSESSMENT OF: Workshop - Air Chiesel Demonstration

PREMISES

EQUIPMENT

VEHICLE

SYSTEM OF WORK

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RISK ASSESSMENT BY: Ian Marritt

DATE COMPLETED: September 2025

DISCIPLINE LEAD SIGN OFF:

DATE FOR REVIEW: August 2026

Notes:
See separate risk assessment for Logistics vehicle preparation and Extrication Competition.

Control of public/spectators is covered by a separate risk assessment.

TASK	HAZARDS IDENTIFIED	WHO MAY BE HARMED AND HOW?	EXISTING CONTROLS	IS THE RISK ADEQUATELY CONTROLLED? (YES / NO)	ADDITIONAL CONTROL MEASURES & COMMENTS	SECTION / PERSON RESPONSIBLE
1. Site set-up & zoning	Unauthorised access; poor segregation; trip hazards	Learners, instructors, observers – struck by moving items, slips/trips	Designated training area; barriers/cones; instructor briefing; marshal at access	Y	Signage; hot/warm/cold zones; clear egress routes; tool table and hose routes defined	Training Lead
2. Compressor selection & placement	CO exposure (petrol units), noise, hot surfaces, exhaust; unstable footing	All – inhalation risk, burns, trips	Electric powered compressors to be utilised indoors. If petrol powered units they must be used outdoors; secure, level base	Y	Exclude any petrol powered units from indoors; cordon hot surfaces; direct exhaust downwind when used outdoors; spill kit where fuel present	Safety Officer

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3. Airline management	Hose “whip” on failure; trip hazards; uncontrolled movement	All – impact injuries, trips	Rated hoses; visual inspection; routed away from feet	Y	Fit whip-checks/retainers; <u>install pressure relief valves</u> ; protect hoses at crossings; quick-release couplers with check valves	Tool Controller
4. Pressure regulation & lubrication	Over-pressure; dry running; sudden acceleration of tool	Operator/nearby – loss of control, hand injury	Regulator set to tool <u>specification</u> ; in-line oiler/mist where required; function check <u>prior to use</u>	Y	Lock regulator; nominate single “air controller”; tag tool with operating pressure	Tool Controller / Instructors
5. Tool & bit selection	Wrong bit for task; burrs; cracked or worn tooling	Operator/observers – fragment ejection, cuts	Pre-use inspection; remove damaged/worn bits; correct shank/retainer	Y	Maintain asset register; quarantine defects; store bits in holders with tip guards	Tool Controller
6. PPE	Flying fragments; noise; vibration; sharp edges	All – eye/face injury, hearing loss, lacerations, <u>Hand Arms Vibration Syndrome (HAVS)</u>	Mandatory PPE: eye protection/face shield, hearing protection, cut-resistant gloves, <u>energy absorbing gloves</u> , long sleeves, boots	Y	Add forearm protection/ <u>add energy absorbing gloves</u> ; issue spare eye protection for observers	Safety Officer

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7. Demonstration run (off-vehicle test piece)	Tool kick, recoil, sudden start/stop	Operator – wrist/hand/arm injury	Tutor demonstration first; two-handed grip; stance brief	Y	Use clamp/vice for test pieces; small trigger inputs (“feathering”)	Instructors
8. Cutting on vehicle panels/structures	Flying shards, swarf; heat and sparks; sharp edges; tool jamming	All – eye/skin injury; cuts; minor burns; loss of control	Protective drapes/boards; adhesive film/magnetic swarf catchers; tape sharp edges	Y	Maintain <u>3m</u> exclusion <u>zone</u> ; <u>impact rated shields</u> /protection boards; spotter controls crowding	Safety Officer , Spotter
9. Proximity to simulated patient	Contact injury; noise/stress; debris ingress	Simulated patient/learners – knocks, anxiety	Use a manikin by default; casualty guardian role	Y	<u>No live patients to be used</u> : reinforce protection, continuous <u>communications</u> , stop authority	Medical Lead / Safety Officer
10. Vehicle systems & hidden hazards	SRS deployment zones; wiring/pyros; fuel lines; HV cabling <u>on Hybrids/EV’s</u>	All – impact, burns, electric shock	Vehicle safety brief; avoid SRS zones; engine off; keys controlled	Y	Consider 12V isolation where safe; mark <u>all</u> avoidance zones <u>prior to commencement</u> ; <u>Identify and reveal all</u> “orange” cabling	Instructors
11. Noise & vibration exposure	Hearing damage; HAVS risk	Operators/spotters – cumulative harm	Hearing protection enforced (<u>Muffs not ear plugs</u>); rotation of operators	Y	Record exposure time in line with local HAVS policy;	Training Lead

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					anti-vibration gloves if approved	
12. Fire & hot-work by-products	Sparks to combustibles; vapour ignition	All – burns, fire	Pre-check for spills; remove combustibles; <u>DCP/Water extinguishers within 3 metres of scenario</u>	Y	Use wet towel/blanket as spark barrier; <u>ensure that adequate fire suppression equipment is available</u>	Safety Officer
13. Ergonomics & posture	Awkward stances; slips on swarf	Operators – strains, slips	Stable stance brief; clear footing; keep area tidy	Y	Non-slip mats; scheduled micro-breaks; <u>no tool use longer than 3 minutes</u> ; change hands where competent	Instructors
14. Communication & command	Miscommunication; delayed stop	All – escalation of error	Pre-agreed calls/hand signals; single point of command; “STOP, STOP, STOP” word	Y	Assign Operator, Spotter, Protection Lead, Safety Officer; radio use as required	Training Lead
15. Post-use handling & maintenance	Hot tips; sharp burrs; residual pressure	Operators – cuts/burns; hose whip	Isolate air; bleed line; cool tips; tip guards on	Y	Tag defects; wipe down, oil as per manufacturer; secure storage	Tool Controller
16. Housekeeping & demobilisation	Left sharps; swarf; trip hazards	All – cuts, trips	Area sweep; magnet/swarf	Y	Sharps bin for damaged tips; waste	Safety Officer

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			collection; tool count-back		disposed appropriately	
<div>1. Objective Enable learners to understand capabilities, limitations and safe operating procedures of air chisels used in vehicle extrication, including setup, controlled use, casualty protection and post-use maintenance.</div> <div>2. Scope Applies to all instructors, learners, safety staff and observers participating in the session at the designated training area, using training vehicles, sacrificial panels and standard protection/cribbing.</div> <div>3. Responsibilities<ul style="list-style-type: none">• Training Lead: Overall session control; ensures this risk assessment and the session plan are implemented.• Safety Officer: <u>Enforces 3 metre exclusion zones</u>, Zoning, dynamic risk assessment (DRA), stop authority, PPE compliance.• Tool Controller: Compressor/airline setup, pressure regulation, lubrication, inspections, defect quarantine, <u>all equipment checked against OEM documentation</u>.• Instructors: <u>Accountable for the scenario safety</u>, brief/demonstrate/supervise; enforce controls and comms; manage operator rotation.• Protection Lead: <u>Ensure the use of impact rated shields/protection</u> drapes, manage debris control and sharp-edge taping.• Spotter: Monitors tool control, exclusion <u>zone</u> and bystander spacing; calls immediate stop if unsafe.• Casualty Guardian/Medical Lead: Protects simulated patient; monitors welfare and noise exposure.</div> <div>4. Procedures<div>4.1 Pre-session briefing<ul style="list-style-type: none">• Learning outcomes; hazards; controls; role allocation; communication plan and emergency word (“STOP, STOP, STOP”).</div></div>						

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	<ul style="list-style-type: none"> Confirm PPE: face shield or safety specs with side shields, hearing protection, cut-resistant gloves, long sleeves, safety boots; bump cap/helmet and hi-vis where appropriate. <p>4.2 Area & vehicle preparation</p> <ul style="list-style-type: none"> Establish hot/warm/cold zones and egress routes. Stabilise vehicle (chocks, gear/P-brake); remove loose items; tape or cover sharp edges; identify/mark SRS zones and vulnerable systems. <p>4.3 Compressor & airline set-up</p> <ul style="list-style-type: none"> Place electrically powered compressor (no hydrocarbon powered compressor to be utilised indoors). If hydrocarbon powered compressor is utilised it must be positioned outdoors, exhaust downwind; calibrated/tested regulator fitted and, where required, in-line oiler. Inspect hoses, fit whip-checks, ensure valves installed for pressure relief, route away from walkways; set and lock operating pressure to tool specification. <p>4.4 Tool checks & bit selection</p> <ul style="list-style-type: none"> Inspect body, trigger, retainer and safety clip; select correct bit for task; discard damaged or mushroomed tips; apply tip guards for carriage. <p>4.5 Demonstration – off-vehicle</p> <ul style="list-style-type: none"> Instructor demonstrates stance, two-handed grip, controlled trigger “feathering”, starting angle, bite control, and stopping protocol. Conduct function test on clamped scrap panel before any vehicle work. <p>4.6 Practical – on vehicle</p> <ul style="list-style-type: none"> Fit impact rated protection shields and drapes; apply adhesive film or magnetic swarf catchers; maintain 3 metre exclusion arc around operator. 					

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	<ul style="list-style-type: none">Operator conducts short, controlled bursts; Spotter observes stability, debris, and proximity to casualty spaces; Protection Lead manages debris and sharp-edge taping as cuts progress.					
	4.7 Noise/vibration management					
	<ul style="list-style-type: none">Enforce hearing protection; rotate operators; record exposure time in line with local HAVS policy.					
	4.8 Abnormal events / emergency					
	<ul style="list-style-type: none">Any uncontrolled movement, hose failure, excessive heat/sparks, or loss of tool control: call “STOP, STOP, STOP”, isolate air at source, step back to warm zone; Instructor recovers safely.					
	4.9 Post-use & maintenance					
	<ul style="list-style-type: none">Isolate and bleed line; allow tips to cool; fit guards; clean and lightly oil per manufacturer guidance; tag and quarantine defects; secure storage.					
	5. Training & Competency					
	<ul style="list-style-type: none">Ratio suited to experience (guide 1:4–1:6); demonstration then closely supervised practice.Learner sign-off on knowledge (pressures, bits, PPE, comms, casualty protection) and a short practical check before on-vehicle work.					
	6. Monitoring & Review					
	<ul style="list-style-type: none">Safety Officer conducts ongoing DRA; near misses recorded.Debrief after session: equipment performance, controls, comms, suggested improvements.Review this assessment at least annually or after incidents/equipment changes.					



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Risk Assessment Author/ <u>Authorisation</u>	Date	Role	Approved	Amendments required	Amendments actioned
Ian Marritt		Education Lead	<u>DRAFT</u>		
<u>David Cockbain</u>		<u>Health and Wellbeing lead</u>	<u>Yes</u>	<u>Updated RA + RCM's</u>	
		Discipline Lead			
		Director Of Operations			

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