Plant Identification : HAULOTTE Boom
HA 20 RTJ-PRO

	Potential Hazard	Risk Yes	Risk No	Control Methods currently in Place	Additional Control Method Required	Confirmation and Acceptance
	Entanglement – Can anything become entangled in moving parts?	Y		Engine compartment is fitted with cover. Fan is cover fitted. Hydraulic motors mounted in hubs. Guarding installed over controls. Precautions provided in operator manual	Address during company induction. Operators to be aware of clothes and materials hanging near moving parts	
	Crushing/Striking – Can anyone be crushed or struck by moving objects due to:					
	Material falling off or onto the plant?	Y		Kick guards fitted as part of platform Precautions provided in operator manual	Tool and equipment may be attached by lanyard if required per the site assessment	
	Uncontrolled or unexpected movement of the plant or its load?	Y		Deadman foot pedal plus movement selection button require dual input for a movement Movement alarm provided Amber flashing beacon Emergency stop switches fitted to platform and ground controls	None	
	Lack of capacity for the plant to be slowed, stopped or immobilised?	☐	N	E-stops immobilise plant from the any movement Braking system design tested for auto-engagement of brakes.	None	

	The plant tipping or rolling over?	Y		Stability tested in accordance with AS1418.10 Max slope limits provided on data plate Warnings provided in manual to not carry material in platform that will increase wind surface area in wind-affected environments Load management (Overload protection) system fitted which prevents movement when overloaded Tilt sensor fitted which alarms and restricts movement when plant is on slope greater than the permissible.	Operate machine ONLY in accordance with load, and wind limits Do not overload platform or carry material which increases wind surface area	
	Parts of the plant collapsing?	Y		Dual Load holding valves fitted to lift cylinders Inspection schedule provided in operator manual	Inspection, cleaning, maintenance and repair to be conducted when machine is stationary	
	Coming into contact with moving parts of the plant during testing, inspection, operation, maintenance, cleaning or repair?	Y		Ground controls fitted with hold-on switches Control stations located at suitable distance from moving parts Plant has NO drive function at ground controls Precaution in operator manual	Site management to ensure body harness to be correctly worn and connected at all times to the designated anchorages when in basket/platform Trained and competent ground personnel required to use ground controls.	

	Being thrown off or under the plant?	Y		Tested to AS1418.10 Guard rails fitted to platform Fall arrest harness anchorages fitted to platform and identified Drive is limited to Creep speed when elevated Warning provided in operator manual	Platform occupant to wear full body harness and connected at all times to the designated anchorages when in basket/platform	
	Being trapped between the plant & materials or fixed structures?	Y		Dead man pedal actuation required to protect against inadvertent movement Guard over controls to protect against continued movement. Emergency stop fitted if movement causes trapping Warning decals attached	Collision with overhead objects and operator entrapment can occur depending on site structures. Address during company induction Activ'Shield Bar provided as an option	
	Other factors not mentioned?	☐	N			
	Cutting, Stabbing or Puncturing – Can anyone be cut, stabbed or punctured due to:					
	Coming in contact with sharp or flying objects?	☐	N	No visible sharp objects. Instrument panel, controls and handrails are rounded Engine fan enclosed.		

	Uncontrolled or unexpected movement of the plant?	Y		Deadman pedal fitted and dual input by operator is required Emergency stop fitted. Movement alarm and flashing beacon fitted Time out interlocks provided if controls are held on without movement /actuation. Controls must be in neutral position. Interlocks prevent movement at start up.	Training and Supervision to be provided by site management	
	Parts of the plant or work pieces disintegrating?	☐	N	Inspection schedule provided in manual to identify disintegrating components	Conduct pre-operational inspection and periodic inspections as per the schedule	
	Work pieces being ejected?	☐	N	Guards, covers, keeper pins and lock pins fitted		
	Coming in contact with moving parts of the plant during testing, inspection, operation maintenance, cleaning or repair?	☐	N	Guarding fitted Warning Decals fitted Serviceable components (hydraulic, engine, battery) all in enclosures and in accessible locations		
	Other factors not mentioned?	☐	N			

	Shearing – Can anyone's body parts be sheared between two parts of the plant, or between a part of the plant and a work piece structure?	Y		Operator position located not adjacent to moving parts . Grab handle located on the inside of the handrails fitted on platform. Warning Decals fitted Precautions in operator manual	JSA, Training and Supervision to be provided by site management. Bystanders to keep clear when machine is operational	
	Slipping or Tripping – Can anyone using or near the plant, slip or trip due to:					
	Uneven or slippery work surfaces?	Y		Non slip surface provided on platform		
	Poor housekeeping, e.g. spillage not cleaned up?	Y		Platform provided in clean condition	Supervision by site management to ensure machine remains in clean, safe condition	
	Obstacles being placed in the vicinity of the plant or platform?	Y		Deadman pedal is enclosed. Designated storage location for operator manuals	Supervision to be provided by site management to ensure platform and work area remains free from obstacles	
	Other factors not mentioned?	☐	N			
	Falling – Can anyone fall from a height due to:					
	Lack of proper working platform?	☐	N	Work platform fitted. Warning provided not to climb on rails	Operator to remain within and standing on platform floor at all times	
	Lack of proper stairs or ladders?	☐	N	Platform lowers to ground for entry and exit purposes		
	Lack of guard rails or other suitable edge protection?	☐	N	Guard rails fitted.		

	Unprotected holes, penetrations or gaps?	☐	N	Guardrails fitted Appropriate spacing between rails		
	Poor floor or walking surfaces, such as the lack of a slip-resistant surface?	☐	N	Platform has slip resistant surface		
	Steep walking surfaces?	☐	N	Basket levelling allows operator to adjust platform to level. Tilt sensor cuts off movement when plant exceeds the permissible slope.		
	Collapse of the supporting structure?	☐	N	Inspection requirements detailed in operator manual		
	Other factors not mentioned? Ejection from plant due to sudden movement of chassis (ground collapse, driven over drop-off etc)	Y		Fall arrest harness anchor points provided for occupant.	Site management to ensure correct body harness is worn by all platform occupants	
	Suffocation – Can anyone be suffocated due to lack of oxygen or atmospheric contamination?	Y		Open air platform		
	Electrical – Can anyone be injured by electrical shock or burnt due to:					
	• The plant contacting live electric conductors?	Y		Electrical Decal specifying minimum clearance is fitted to work platform	JSA, Training and Supervision to be provided by site management to ensure safe working clearance from electrical fields	
	• The plant working in close proximity to electrical conductors?	Y		Electrical Decal specifying minimum clearance is fitted by control panel Precaution in operator manual	JSA, Training and Supervision to be provided by site mgt to ensure safe working clearance from electrical fields	

	• Overload of electrical circuits?	☐	N	Regular service intervals indicated in manual including inspection and testing of electrical circuits		
	• Damaged or poorly maintained electrical leads & cables?	☐	N	No signs of damage	Inspect regularly for any damaged leads	
	• Damaged electrical switches?	☐	N	No signs of damage	Inspect regularly for any damaged switches	
	• Water near electrical equipment?	Y		Electrical components are of level IP54		
	• Lack of isolation procedures?	☐	N			
	• Other factors not mentioned?	☐	N			
	High/Low Temperature or Fire –					
	Can anyone come into contact with moving parts or other objects at high temperatures?	Y		Engine enclosed and exhaust cover provided		
	Can anyone be injured by fire?	Y		Emergency lowering device provided at ground controls i	Fire extinguishers to be provided as deemed necessary following job assessment JSA, Training and Supervision to be provided by site mgt	
	Can anyone suffer ill-health due to exposure to high or low temperatures?	☐	N			
	High Pressure Fluid – Can anyone come into contact with fluids under high pressure, due to plant failure or misuse of the plant?	Y		Pipe clamps fitted Relief valve fitted Precautions in manual for repair on high pressure fluids Hydraulic system designed to meet burst pressure requirements	Correct PPE be worn during maintenance of hydraulic system.	

	Explosion – Can anyone be injured by explosion of gases, vapours, liquids, dusts, etc., triggered by the operation of the plant or by material handled by the plant?	Y		Warning decal on battery	Charge batteries in a well ventilated area.	
	Other Hazards – Can anyone be injured or suffer ill-health from exposure to					
	• Chemicals?	☐	N			
	• Toxic gases or vapours?	☐	N			
	• Fumes?	Y		Warning provided in manual regarding charging of battery	Charge batteries in a well ventilated area.	
	• Dust?	☐	N			
	• Noise?		N	Applicable values in manual		
	• Vibration?	☐	N	Applicable values in manual		
	• Radiation?	☐	N			
	• Other factors not mentioned?	☐	N			
	Ergonomics – Can anyone be injured due to:					
	Poorly designed seating?		N	No seat required or provided		
	Workstation Layout?		N	Clear information is provided on control panel and in operator manual Warning lights provide important and instantaneous information	Replace control panel decal if illegible or damaged.	
	Inadequate provision of devices/tools/controls?		N	Joysticks and switches provided for movement. Controls marked and actuate in direction of movement		

	Repetitive body movement?	☐	N	Controls Box is easy-reach Controls are hold-on and do not require repeat actions		
	Constrained body posture or the need for excessive effort?	☐	N	Electronic controls require minimal effort Upper and lower Controls located at recommended height for percentile male Deadman (foot) pedal adjacent to the plane of controls, and positioned for operator to stand freely at the controls.		
	Design deficiency causing mental or psychological stress?	☐	N			
	Inadequate or poorly placed lighting?	☐	N			
	Lack of consideration given to human error or human behaviour?	☐	N			
	Excessive number of simultaneous tasks required ?			Single movement of controls provide simple actions. Drive joystick includes steer buttons for a one-hand operation for drive & steer	Site management to ensure operators do not overload machine	
	Mismatch of the plant with human traits and natural limitations?	☐	N			
	Other Plant Specific Hazards not covered above:					
	Injury, instability or damage due to overload above platform limits	Y		Plant limits, detailed on signs/decals in platform Load management (Overload protection) system restricts overload and stops movement.		

	Instability due to operation at greater than allowable slope	Y		Tilt sensor system prevents drive and boom functions when slope exceeds allowable. Instructions to test the tilt system in the manual	Site management to ensure operators are trained in EWP operation and machines are operated within limits	
	Injury due to inadvertent movement	Y		Controls and direction of controls clearly marked. Instructions of use provided in operator manual Dual input (commonly referred to as Enable/deadman switch) required for functions at platform and ground controls Interlocks prevent movement at startup/engine ignition.		
	Machine malfunction due to insufficient inspection and maintenance	Y		Inspection schedule and maintenance requirements provided in operator manual and maintenance manual	Owner to ensure that the plant is inspected and maintained per the instructions provided in the manual.	
	Incorrect function or stability due to excessive deflection as a result of wear	Y		Wear limits and inspection schedule provided in workshop manual		
	Access to operator if assistance required	Y		Emergency lowering system provided from ground controls, including an auxiliary power source if main power is disconnected		

	Injury, instability or damage during Emergency Operations	Y		Secondary electric power provided for emergency retrieval. Operation listed in manual. Deadman input required	Site management to ensure a ground crew member is trained in emergency retrieval on machine	
	Inadvertent activation / interference when plant not in use	Y		Removable key provided		

Risk Assessment carried-out by:	
Name:	Shahid Qureshi
Role:	Haulotte - Director Product Safety APAC
Date:	20th April, 2016
Project/Plant Managers Review:	
Name:	
Role:	
Signed:	
Date:	