UNIVERSITY OF Southampton

RECORD OF RISK ASSESSMENT

Title of the risk assessment	Area Risk Assessment for nCATS Laboratories Building 7
Date risk assessment carried out	24th July 2017
Describe the work being assessed	Tribological and surface engineering testing and characterisation for Teaching, Research and Commercial Clients.
Describe the location at which the work is being carried out	nCATS laboratories Building 7 room 2023, 2025, 2027 & 2031
Where appropriate list the individuals doing the work and the dates/times when the work will be carried out	Visitors, Technical, Academic Staff, Research and Project Students
List any other generic or specific risk assessments or other documents that relate to this risk assessment – use hyperlinks if possible	Everybody undertaking experimental work will undertake a laboratory induction. Equipment based risks will be covered in training and Equipment Risk Assessments. Undergraduate student (and where appropriate staff) research activities to be risk assessed on individual basis.
Name and post of risk assessor	Terry Harvey, Area Academic Lead
List the names and post of those assisting in compiling this risk assessment	
Name, post and where required, signature of the responsible manager/supervisor approving the risk assessment	Tomas Polcar, Head of Group
Reference number and version number of risk assessment	Version One

Assessment

Title of risk assessment

Risk Acceptability	
1-3	Risk Acceptable
4-6	Risk to be reduced if readily possible
7-14	Risk to be reduced if reasonably practicable
15-25	Risk Unacceptable

Risk Matrix			Severity				
			very low	low	medium	high	very high
			1	2	3	4	5
Likelihood	Certain	5	5	10	15	20	25
	Likely	4	4	8	12	16	20
	Possible	3	3	6	9	12	15
	Less likely	2	2	4	6	8	10
	Improbable	1	1	2	3	4	5

ref	Task/Aspect of work	Hazard	Harm and how it could arise	Who could be affected?	Existing measures to control risk	Risk Factors: Overall Likelihood	Risk Factors: Overall Severity	Residual Risk Score	Any changes or extra controls?
1	All areas	Slips, Trips & Falls	Injury	All	Walk ways kept free from obstruction. Trailing leads covered or routed away from walk ways. Spills should be cleaned immediately.	2	2	4	no
2	Chemical Handling	Fire, Fumes, Dermatitis, Poisoning, Skin irritation and eye injuries.	Burning, inhalation, allergic reaction and splashing.	User	Only small amounts (>500 ml) of flammable solvents to be used or stored openly on bench. Larger quantities to stored in flammables cupboard. Toxic chemicals to be stored in chemicals cupboard, all containers to be clearly and appropriately marked. Heated tribological experiment to use localised extraction. PPE supplied, follow Good Laboratory Practice and COSHH regulations, Fire extinguishers.	2	2	4	no
3	Electrical equipment	Electricity	Electrical shock/burn	User	Installation and maintenance of equipment conducted by qualified electricians PAT testing.	1	2	2	no
4	Moving and lifting heavy equipment.	Manual handling	Bruising, back injury, strains	User and nearby standing person	Training given, and lifting equipment provided.	2	3	6	no
5	Computer controlled instrument operation	VDU	Eye strain	User	Lighting, Chair, VDU, Keyboard, Temperature and Noise assessed	1	1	1	no

6	Sample preparation	Sharps	Body injury, cuts.	User	Experience, training and laboratory induction. Ensure that broken glassware is cleaned up immediately using the appropriate tools. Broken glassware should be placed in a suitable (impermeable) marked container. Hand protection should be used when handling broken glass. Sharps bins are provide for safe disposal Use glassware only for the purpose in which it was designed.	1	2	2	no
7	Tribological, lapping, corrosion and electrochemical equipment	Finger Traps movement of machine	Crush injury, bruising, trapping, amputation	User	Training provided. Safety guards and Interlocks where necessary.	1	3	3	no
8	Fire	Ignition of flammable chemicals, electrical fire, external source	Burning, smoke inhalation	All	University fire strategies (including trained fire wardens and emergency evacuation procedures)	1	3	3	no
9	Noise	Tribological Equipment	Hearing loss, psychological discomfort	All	Enclosures around source or PPE (earplugs and ear defenders)	2	2	4	no

Post Risk Assessment Actions

Title of risk assessment

Area Risk Assessment for nCATS Laboratories Building 7

Have any of the specialist control measures listed below been identified as required during risk assessment? – indicate yes or no – if yes then include details on the post assessment action list below.	**yes/no**
Is any exposure monitoring required?	No
Is any occupational health monitoring required?	No
Are there any hazards or other factors that could affect pregnant or nursing mothers?	No

Is any specific training required before people can carry out this work?	Yes
All operators of equipment should have training in that equipment before they carry out any work in the laboratory	

Are there any additional procedures or risk assessments required as a result of this risk assessment?	Yes
Training on test equipment undertaken plus a undergraduates students and visitors will be required to complete a Risk Assessment before any testing starts.	

Are there any specialist disposal arrangements required?	No

Are there any special emergency arrangements required?	No

Post Assessment Actions			
Ref	Action	By whom	By when

Examples of hazards	Examples of work activities during hazard may be encountered	Examples of harm that can result if risks are not adequately controlled
Substances that are harmful if contacted, ingested, injected, inhaled	Use or generation during laboratory work, cleaning activities, outdoor pursuits, maintenance work	Dermatitis, chemical burn, poisoning or other illness
Manual handling	lifting, carrying, pushing, pulling, sliding of equipment or people	Bruising, Back injury, strains
Water	watersports, outdoor pursuits, field work, research using flumes	drowning
Pressure and vacuum systems	compressed air or gas systems, vacuum rigs	explosion or implosion, injury from pressure jets, hearing damage
Psychological	working alone, overseas, isolated situations, adverse conditions	stress or distress, suicide, long term mental conditions
Vehicle	moving or manoeuvring vehicles on public or private roads or yards, towing, cross country	Crushing, impact injuries
Electrical	equipment, temporary generators or supplies, experimental rigs, exposed cables, maintenance work	Electrical shock/burn
Environmental	exposure to extremes of heat, cold, wind, dust during field work or maintenance work	Hot burns, cold burns
Height	working at height, outdoor activities	Cuts/bruises, Broken bones, Concussion
Fire	flame cutting equipment, welding or brazing, heating equipment, outdoor barbeques or fires	burns, smoke inhalation,
Ionising radiation	radioactive materials, imaging machines	long term illness, burns
Machinery and equipment	workshop tools, mobile equipment, hand tools	Crushing. trapping, cuts and bruises, amputation
Non Ionising radiation	lasers, ultrasound, microwaves	surface or deep burns, eyesight damage
Noise or vibration	agricultural machinery, wind tunnels. vehicles. workshop equipment, test rigs	hearing loss, hand arm vibration syndrome, internal organ damage
Confined spaces	entering tanks, voids in buildings, boilers, furnaces, sewer and water pipes and manholes	Asphyxiation, illness due to breathing harmful gasses or vapours, explosion

Faculty of Engineering and the Environment	Method Statement (Area)

Description of Area

nCATS main tribological laboratories

Area Location *(Building and Room/Laboratory number)*	7/2023, 2025, 2027 and 2031	**Date**	24th July 2018

Assessor *(Name, ID number)*	**Contact Details** *(Email, Telephone number)*
Dr. Terry Harvey, 11467115	harveyt@soton.ac.uk; x23761

Supervisor	**Contact Details** *(Email, Telephone, Room number)*
Prof. Tomas Polcar	tp1n10 @soton.ac.uk; 7/4083

Description of Area / Overview.

(Description of the area. What is done in this area and by who? Is there any access control (ID card/key)? Is there any induction needed for users?)

The Laboratory is used for tribological and surface engineering testing and characterisation for Teaching, Research and Commercial Clients.

All experimental users will have an induction, equipment training will be provided where appropriate and individual Risk Assessments will be filled out where appropriate and by all undergraduate students and visitors; for PhD students and research staff who activities are not covered by equipment/generic/area risk assessments will be required to fill out individual risk assessments.

For health and safety issues consult with laboratory manager and where appropriate safety officers.

Identification of risks and risk mitigation

(Including step by step manual, transfer and handling of substances, waste collection and storage)

Slips, Trips & Falls

All users must ensure potential trip hazards are away from pedestrian areas and walk ways kept free from obstructions. Trailing leads should be covered or routed away from walk ways.

Spills should be cleaned immediately.

Chemical Handling

Only small volumes, below 500 millilitres, of flammable solvents to be used or stored openly on the bench. Larger quantities must be stored in flammables cupboard.

Users to Follow Good Laboratory Practice and COSHH regulations, read MSDS to determine risk, disposal options and potential fire handling mehtods.

Toxic chemicals must be stored in chemicals cupboard; all containers to be clearly and appropriately marked.

Heated tribological experiment and operations that release harmful vapours must use localised extraction.

Standard PPE is supplied, specialised equipment needs to be arrange with laboratory manager

Electrical equipment
Installation and maintenance of electrical equipment must be conducted by qualified electricians. PAT testing must be conducted according to HSE guidelines.

Moving and lifting heavy objects.
Extensive requirements for moving and lifting heavy objects will require undertaking the University manual handling course. Users should be comfortable in lifting and moving objects (of any weight) and ask for assistance when needed. General lifting equipment can be provided and should be discussed with laboratory manager and where appropriate safety officers.

Computer controlled instrument operation
Users working at computer stations, that operate laboratory equipment, need to ensure that lighting, seating, VDU, keyboard, mouse, temperature and noise are assessed. If issues arise please discuss with laboratory manager and where appropriate safety officers.

Sample preparation and sharps
Ensure that broken glassware is cleaned up immediately using the appropriate tools. Broken glassware should be placed in a suitable (impermeable) marked container. Hand protection should be used when handling broken glass. Use glassware only for the purpose in which it was designed.

Disposal of sharps must be done in the sharps bins provided.

Fire
In the event of a fire users must follow University fire strategies (including trained fire wardens and emergency evacuation procedures).

Noise
Rig and operation that generate significant noise must be assess and measures taken to reduce levels, where possible, or provide suitable PPE (earplugs and ear defenders) for surrounding users. Please discuss with laboratory manager and where appropriate safety officers.

Equipment/rigs/processes
Non/minimal risk equipment and processes, which includes balances, microscopes and photographic equipment, and any process that has no inherent risk (if in doubt consult with laboratory manager and where appropriate safety officers) that is covered by this Area Risk Assessment (ERA) does not need a risk assessment.

Control Measures including training, PPE
(List all commonly provided PPE and existing control measure, such as extraction systems, fume hoods, eye washes, showers, etc.)

Safety spectacles, nitrile gloves (S to XL), dust masks, ear defenders, laboratory coats

2027 has local air extraction system on equipment within this room; there is an eye wash by the entrance; 2031 has been designed a 'noisy' room and duration operation ear defenders must be worn.