



What are Occupational Standards (OS)?

- OS describe what individuals need to do, know and understand in order to carry out a particular job role or function
- OS are performance standards that individuals must achieve when carrying out functions in the workplace, together with specifications of the underpinning knowledge and understanding



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Introduction

Qualifications Pack - Mobile Equipment Maintenance

SECTOR: Iron & Steel

SUB-SECTOR: Mechanical Maintenance

REFERENCE ID: ISC/Q0815

ALIGNED TO: NCO -2004/NIL

Title of Job: The job is all about carrying out routine maintenance, identifying the problems, rectifying the root causes and ensuring fitness of all moving equipment, for e.g. Mobile Cranes, Dumper, Forklift etc.

Personal Attributes: This job requires the individual to work independently as well as in teams. He should be physically fit, not have colour blindness, have analytical skills, problem solving attitude, high concentration levels and willingness to work in a factory environment.



Job Details

Qualifications Pack Code	ISC/Q0815		
Job Role	Mobile Equipment Maintenance		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron & Steel	Drafted on	08/09/2014
Sub-sector	Mechanical Maintenance	Last reviewed on	30/12/2014
Occupation	Maintenance	Next review date	30/12/2015

Job Role	Mobile Equipment Maintenance
Role Description	The job holder carries out routine maintenance, identifies the problems, rectifies the root causes and ensures fitness of all moving equipment, for e.g. Mobile Cranes, Dumper, Forklift, etc.
NSQF level	3
Minimum Educational Qualifications	10 th Pass
Maximum Educational Qualifications	Diploma Pass
Training (Suggested but not mandatory)	<ul style="list-style-type: none"> • 2 weeks hands on training (mandatory) • Machining, welding, gas cutting, assembling and greasing (mandatory) • Working knowledge of tools & fixtures (mandatory) • 5S and safety practices (mandatory) • Working at heights, confined spaces & high temperatures
Experience	<ul style="list-style-type: none"> • 0-2 years with Diploma pass otherwise 2-4 years with Class 10th pass • In lieu of minimum qualification the incumbent should have minimum 4 to 6 years relevant experience in the similar field/function as utility hand/helper
Occupational Standards (OS)	<p>Compulsory:</p> <p>ISC/N0808: Understand the assigned job of mobile equipment (light, medium, heavy and mobile crane) maintenance</p> <p>ISC/N0809: Prepare for operation for mobile equipment (light,</p>



	<p>medium, heavy and mobile crane) maintenance ISC/N0810: Carry out the assigned operation of mobile equipment (light, medium, heavy and mobile crane) maintenance ISC/N0008: Use basic health and safety practices at the workplace ISC/N0009: Works effectively with others</p> <p>Optional:</p> <p>N/A</p>
Performance Criteria	As described in the relevant NOS units



Definitions

Keywords /Terms	Description
Core Skills/Generic Skills	Core Skills or Generic Skills are a group of skills that are key to learning and working in today's world. These skills are typically needed in any work environment. In the context of the NOS, these include communication related skills that are applicable to most job roles.
Function	Function is an activity necessary for achieving the key purpose of the sector, occupation, or area of work, which can be carried out by a person or a group of persons. Functions are identified through functional analysis and form the basis of NOS.
Job role	Job role defines a unique set of functions that together form a unique employment opportunity in an organization.
Knowledge and Understanding	Knowledge and Understanding are statements which together specify the technical, generic, professional and organizational specific knowledge that an individual needs in order to perform to the required standard.
National Occupational Standards (NOS)	NOS are Occupational Standards which apply uniquely in the Indian context
Occupation	Occupation is a set of job roles, which perform similar/related set of functions in an industry.
Organisational Context	Organisational Context includes the way the organization is structured and how it operates, including the extent of operative knowledge managers have of their relevant areas of responsibility.
Performance Criteria	Performance Criteria are statements that together specify the standard of performance required when carrying out a task.
Qualifications Pack(QP)	Qualifications Pack comprises the set of NOS, together with the educational, training and other criteria required to perform a job role. A Qualifications Pack is assigned a unique qualification pack code.
Qualifications Pack Code	Qualifications Pack Code is a unique reference code that identifies a qualifications pack.
Scope	Scope is the set of statements specifying the range of variables that an individual may have to deal with in carrying out the function which have a critical impact on the quality of performance required.
Sector	Sector is a conglomeration of different business operations having similar businesses and interests. It may also be defined as a distinct subset of the economy whose components share similar characteristics and interests.



Sub-Sector	Sub-sector is derived from a further breakdown based on the characteristics and interests of its components.
Sub-functions	Sub-functions are sub-activities essential to fulfil the achieving the objectives of the function.
Technical Knowledge	Technical Knowledge is the specific knowledge needed to accomplish specific designated responsibilities.
Unit Code	Unit Code is a unique identifier for a NOS unit, which can be denoted with an 'N'
Unit Title	Unit Title gives a clear overall statement about what the incumbent should be able to do.
Vertical	Vertical may exist within a sub-sector representing different domain areas or the client industries served by the industry.
Keywords /Terms	Description
NOS	National Occupational Standard(s)
NSQF	National Skills Qualifications Framework
OEM	Original Equipment Manufacturer
OS	Occupational Standard(s)
QP	Qualifications Pack
5 S	Technique of maintaining orderliness –Japanese terminology
CP	Control Plan
WI	Work Instructions

Acronyms



ISC/N0808: Understands the assigned job of mobile equipment (light, medium, heavy and mobile crane) maintenance



Overview

This NOS is about understanding the job requirements of mobile equipment (light, medium, heavy and mobile crane) maintenance in accordance with the checklist and seek any clarifications on the same



Unit Code	ISC/N0808
Unit Title (Task)	Understands the assigned job of mobile equipment (light, medium, heavy and mobile crane) maintenance
Description	This unit is about understanding the requirements of the job of mobile equipment (light, medium, heavy and mobile crane) maintenance after receiving the checklist from the supervisor, seek any clarifications on the requirements of the job and identify the tools and tackles that would be needed to carry out the job
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Understand the assigned job in accordance with the instructions / checklist / maintenance manual • Understand the circuit diagram • Seek clarifications with respect to the equipment, maintenance manual • Identify the tools and tackles that are required to carry out the assigned job of mobile equipment maintenance
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Understand the assigned job in accordance with the instructions / checklist/ maintenance manual	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Interpret the checklist/manual and understand the maintenance job requirements</p> <p>PC2. Understand intake and exhaust system of the engine including cylinders, valve accessories, cylinder block, cylinder liner, crank shaft, cam shaft, timing gear, piston, piston ring, piston pin, connecting rod etc.</p> <p>PC3. Understand the lubrication system</p> <p>PC4. Understand the charging system</p> <p>PC5. Understand the braking system</p> <p>PC6. Understand the control system</p> <p>PC7. Plan, as appropriate to carry out the maintenance job</p>
Understand the circuit diagram	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC8. Understand the circuit diagram</p> <p>PC9. Understand the symbols used in the circuit diagram</p> <p>PC10. Understand other specifications and identify the sequence of activities required to assemble the machine (engine, gear box, lubrication system, fuel system, cooling system, accessories and electrical system)</p> <p>PC11. Read and interpret maintenance manual to ensure correct limits, tolerance and fits of equipment components</p>



Seek clarifications with respect to the equipment, maintenance manual	To be competent, the user/individual on the job must be able to: PC12. Identify any clarifications that he wants to seek with respect to the given maintenance manual of the mobile equipments (light, medium and heavy) PC13. Recognize whom to contact for clarifications on the circuit diagram PC14. Escalate the concern to the supervisor or shift-in-charge, if needed
Identify the tools and tackles that are required to carry out the assigned job of mobile equipment maintenance	To be competent, the user/individual on the job must be able to: PC15. Identify tools, tackles and equipments (lifting equipment, various sizes of spanner, dial gauge, Vernier calliper, filler gauge, torque wrench etc.) required to perform the maintenance operation PC16. Ask helper to carry tools required to the desired work site PC17. Report to stores / supervisor in case of non-availability of tools & tackles or stock-out
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	The user/individual on the job needs to know and understand: KA1. Quality and damage checks to be done and importance of the same KA2. Risk and impact of not following defined procedures/work instructions KA3. Escalation matrix for reporting identified issues
B. Technical Knowledge	The user/individual on the job needs to know and understand: KB1. Knowledge of engineering circuit drawings and maintenance manual KB2. Knowledge of tools, tackles and equipments (lifting equipment, various sizes of spanner, dial gauge, filler gauge, torque wrench etc.) to be used for the maintenance job KB3. Use of measuring instruments e.g. Vernier, Micro meter, dial gauge, filler gauge, torque wrench etc. KB4. Knowledge of normal running characteristics of mobile equipment KB5. Knowledge of intake and exhaust system of the engine including cylinders, valve accessories, cylinder block, cylinder liner, crank shaft, cam shaft, timing gear, piston, piston ring, piston pin, connecting rod etc. KB6. Knowledge of lubrication, charging, braking and other control systems KB7. Implications of not adhering to sequence of activities and operations
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills The user/ individual on the job needs to know and understand how to: SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, process charts, activity logs in required



	format of the company
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to: SA3. Read and interpret engineering and machine drawings SA4. Read and understand manuals, health and safety instructions, memos, reports, job cards etc.
	Oral Communication (Listening and Speaking skills)
B. Professional Skills	The user/individual on the job needs to know and understand how to: SA5. Express statements, opinions or information clearly so that others can hear and understand SA6. Respond appropriately to queries SA7. Communicate with team members and supervisor
	Analytical Thinking
	The user/individual on the job needs to know and understand how to: SB1. Diagnose common problems in the mobile equipments based on visual inspection, sound, temperature etc. SB2. Suggest improvements(if any) in maintenance processes based on experience



NOS Version Control

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Occupation	Maintenance	Next review date	30/12/2015





ISC/N0809: Prepare for operation for mobile equipment (light, medium, heavy and mobile crane) maintenance



National Occupational Standards

Overview

This NOS is about inspecting the equipment for scheduled maintenance or defects and preparing the equipment for carrying out the operation for mobile equipment (light, medium, heavy and mobile crane) maintenance



Unit Code	ISC/N0809
Unit Title (Task)	Prepare for operation for mobile equipment (light, medium, heavy and mobile crane) maintenance
Description	This unit is about inspecting the equipment for scheduled maintenance or defects and preparing the equipment for carrying out the operation for mobile equipment (light, medium, heavy and mobile crane) maintenance
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> Reach the site and inspect the equipment for scheduled maintenance or defects and identify cause of problem Prepare spares, material required for operation for mobile equipment (light, medium, heavy and mobile crane) maintenance
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Reach the site and inspect the equipment for scheduled maintenance or defects and identify cause of problem	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Reach the site with desired tools, tackles and equipment PC2. Plan for job duration and understand the process as per SOP PC3. Arrange necessary instruments to carry out maintenance (dial gauge, instrument and tools for dismantling and assembling e.g. spanners, torque wrench, power tools etc.) PC4. Identify the root cause of the problem, if any (problem that exists in engine, brake, lights, charging system, lubrication system etc.) PC5. Identify the causes of overheating of the engine PC6. Identify the spares as per parts catalogue</p>
Prepare spares, material required for operation for mobile equipment (light, medium, heavy and mobile crane) maintenance	<p>To be competent, the user/individual on the job must be able to</p> <p>PC7. Prepare the list of spares required for completion of maintenance job PC8. Ensure that tools match the desired specifications for maintenance PC9. Ensure tools and equipment required for assembly are free from physical damage and ready for maintenance operation PC10. Ensure measuring instruments e.g. Vernier, Micro meter, dial gauge, filler gauge, torque wrench etc. are available for use PC11. Report damaged / defective components of equipment as per the escalation matrix</p>
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Quality and damage checks to be done and importance of the same KA2. Risk and impact of not following defined procedures/work instructions KA3. Escalation matrix for reporting identified issues</p>



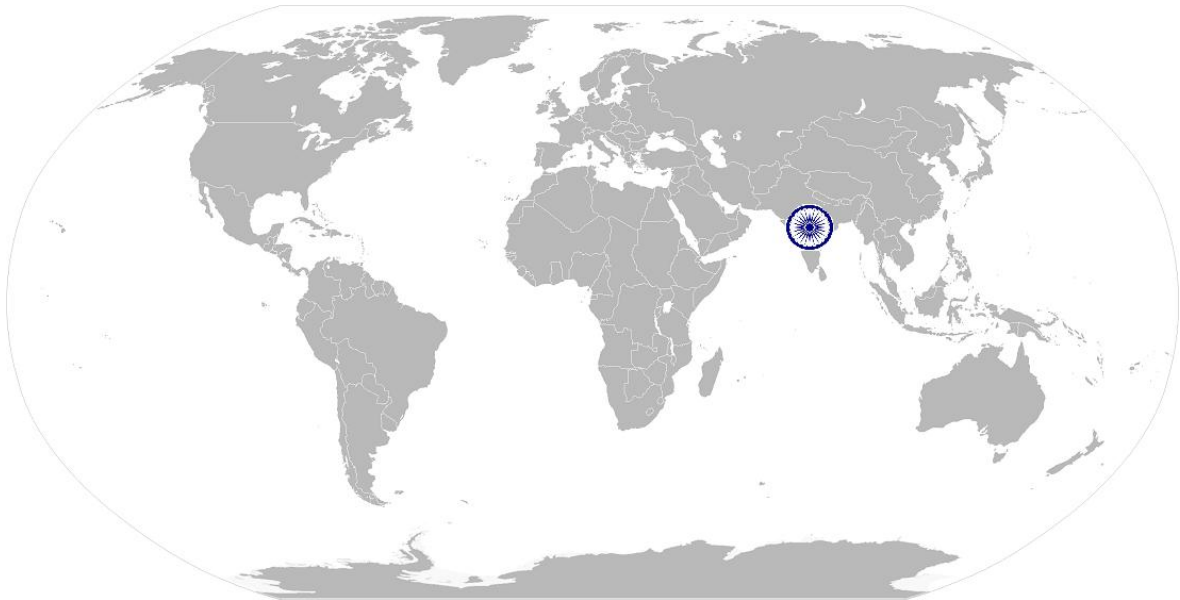
its processes)	KA4. Plant layout and location of various departments
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Understand normal running characteristics of mobile equipment KB2. Possible causes of common problems during mobile equipment maintenance and their remedies KB3. Standard specifications of spare parts KB4. Knowledge pf engineering circuit drawings and maintenance manual KB5. Knowledge of tools, tackles and equipments (lifting equipment, various sizes of spanner, dial gauge, filler gauge, torque wrench etc.) to be used for the maintenance job KB6. Use of measuring instruments e.g. Vernier, Micro meter, dial gauge, filler gauge, torque wrench etc. KB7. Knowledge of intake and exhaust system of the engine including cylinders, valve accessories, cylinder block, cylinder liner, crank shaft, cam shaft, timing gear, piston, piston ring, piston pin, connecting rod etc. KB8. Knowledge of lubrication, charging, braking and other control systems KB9. Implications of not adhering to sequence of activities and operations</p>
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills
	<p>The user/ individual on the job needs to know and understand how to:</p> <p>SA1. Construct simple sentences and express ideas clearly through written communication SA2. Fill up appropriate technical forms, activity logs in required format of the company</p>
	Reading and Understanding Skills
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA3. Read and understand manuals, health and safety instructions, memos, reports, job cards, specifications of spare parts etc.</p>
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. Express statements, opinions or information clearly so that others can hear and understand SA5. Respond appropriately to queries SA6. Communicate with supervisor, team members, other departments e.g. – stores, operations, etc.</p>
B. Professional Skills	Analytical Thinking



The user/individual on the job needs to know and understand how to:

SB1. Diagnose common problems in the mobile equipments based on visual inspection, sound, temperature etc.

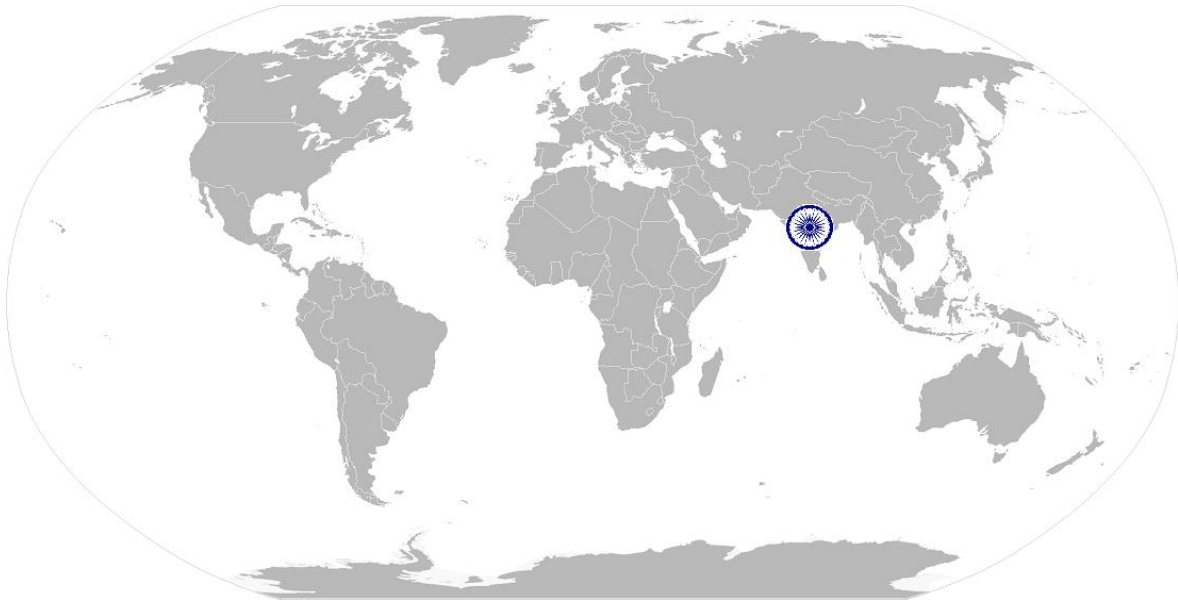
SB2. Suggest improvements(if any) in assembly process based on experience





NOS Version Control

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Industry	Iron and steel	Drafted on	08/09/2014
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ISC/N0810: Carry out the assigned operation of mobile equipment (light, medium, heavy and mobile crane) maintenance



Overview

This NOS is about carrying out the operations in terms of rectifying the identified problem or carrying out scheduled maintenance of mobile equipment (light, medium, heavy and mobile crane)



Unit Code	ISC/N0810
Unit Title (Task)	Carry out the operation of mobile equipment (light, medium, heavy and mobile crane) maintenance
Description	This NOS is about carrying out the operations in terms of rectifying the identified problem or carrying out scheduled and routine maintenance of mobile equipment (light, medium, heavy and mobile crane).
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Conduct routine maintenance or rectify the problem, as appropriate • Check the oil level, lubrication system, cooling system, accessories, electrical system, belt drives etc. as per norms pre start • Check oil pressure, temperature, break, light etc. start-up parameters post start • Performance test and trouble shooting • Conduct tests to ensure fitness • Communicate to supervisor about completion of work
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Conduct routine maintenance or rectify the problem, as appropriate	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC1. Dismantle the equipment, as needed PC2. Repair or replace the defective parts PC3. Assemble the parts according to the equipment maintenance manual PC4. Fasten mechanical components/ subassemblies together using screws, bolts, and collars using hand/ power tools PC5. Set and adjust linkages, tensions and clearances of assembled components to specifications using fixed gauges and hand tools PC6. Re assemble the parts post correcting the defect</p>
Check the oil level, lubrication system, cooling system, accessories, electrical system, belt drives etc. as per norms pre start	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC7. Understand the standard requirements of oil, lubricant, coolant level etc. in the equipment PC8. Check the oil, lubricant, coolant level, belts etc. as per norms PC9. Rectify any deviations from the norms</p>
Check oil pressure, temperature, break, light etc. start-up parameters post start	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC10. Understand what parameters are to be checked immediately post start of the equipment PC11. Check oil pressure, temperature, break, light etc. start-up parameters post start</p>



	<p>PC12. Identify any deviations from prescribed levels</p> <p>PC13. Report any deviations to supervisor so as to take necessary actions to rectify them</p>
Performance test and trouble shooting	<p>To be competent, the user/individual on the job must be able to:</p> <p>PC14. Understand the normal running condition of the equipment on full load as per manufacturers guideline</p> <p>PC15. Understand the consumption of fuel for specified load condition</p> <p>PC16. Understand the fault observed during operation, necessary corrective measures to be taken depending on the observation</p>
Conduct tests to ensure fitness	<p>To be competent, the user/individual on the job must be able to</p> <p>PC17. Ensure testing and adjustment of mobile equipment components as per maintenance manual</p> <p>PC18. Check vibrations to ensure they are within desired limits</p> <p>PC19. Test the mobile equipment to ensure it is fit to use before handover</p> <p>PC20. Record the test results in the prescribed format of mobile equipment maintenance manual</p>
Communicate to supervisor about completion of work	<p>To be competent, the user/individual on the job must be able to</p> <p>PC21. Ensure all activities are complete according to checklist</p> <p>PC22. Communicate to supervisor on completion of given job in case of any deviations from checklist</p>
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Quality and damage checks to be done and importance of the same</p> <p>KA2. Contact person across departments for spare parts, information etc.</p> <p>KA3. Escalation matrix for reporting identified issues</p> <p>KA4. Risk and impact of not following defined procedures/work instructions</p> <p>KA5. Types of documentation in organization and importance of the same</p> <p>KA6. Records to be maintained and implications of non-maintenance of the same</p> <p>KA7. Importance of housekeeping & good shop floor practices (e.g. 3S & 5S)</p> <p>KA8. Health, Safety and Environment guidelines, legislation and regulations as applicable</p> <p>KA9. Personal protection (which protective equipment to be used and how)</p> <p>KA10. Quality Management tools like Quality circle, 5S</p>
B. Technical Knowledge	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Working knowledge of IC engine, transmission system, lubrication system, fuel charging system, cooling system, accessories, electrical system, hydraulics and pneumatics, motors etc.</p>

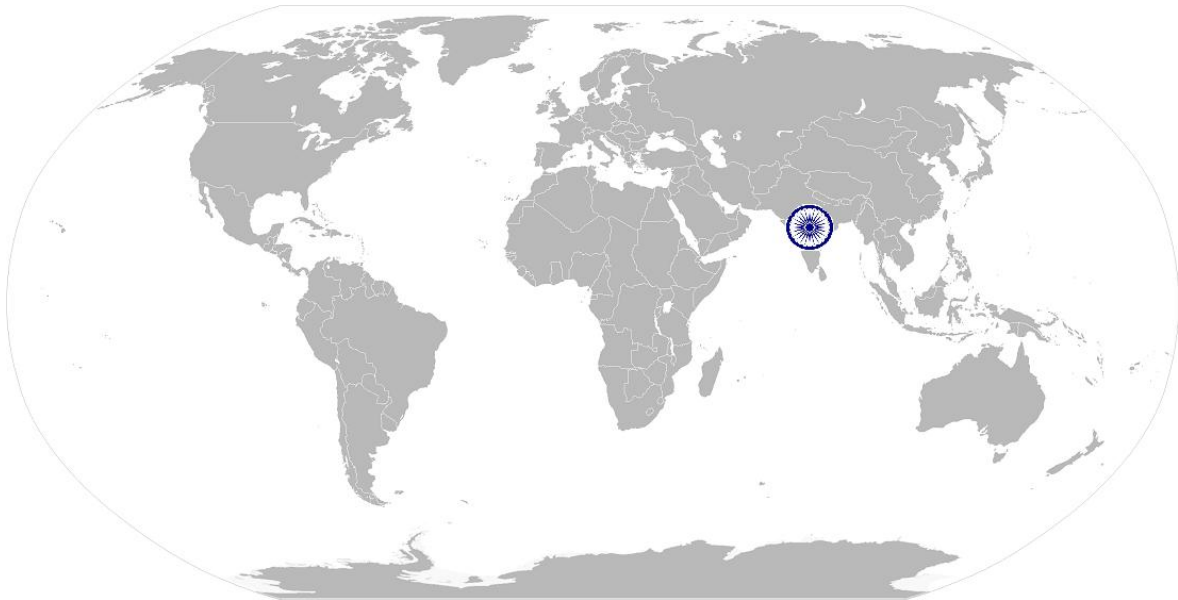


	<p>KB2. Checks that need to be made to ensure that mobile equipment is safe and ready to use</p> <p>KB3. Limits, fits and tolerances of different assembly and sub-assemblies</p> <p>KB4. Circuit drawings and maintenance manual</p> <p>KB5. Possible causes of common problems during assembly & their remedies</p> <p>KB6. Response to emergencies e.g. Power failures, fire and system failures</p> <p>KB7. Use of measuring instruments e.g. Vernier, Micro meter, dial gauge, filler gauge, torque wrench etc.</p> <p>KB8. Compilation of test results in prescribed format as per maintenance manual</p> <p>KB9. Knowledge of performance test and trouble shooting of equipment operation</p>
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Writing Skills
	The user/ individual on the job needs to know and understand how to:
	SA1. Construct simple sentences and express ideas clearly through written communication
	SA2. Fill up appropriate technical forms, process charts, activity logs in required format of the company
	Reading and Understanding Skills
	The user/individual on the job needs to know and understand how to:
SA3. Read and interpret engineering and machine drawings	
SA4. Read and understand manuals, memos, reports, job cards etc.	
B. Professional Skills	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to:
	SA5. Express statements, opinions or information clearly so that others can hear and understand
	SA6. Respond appropriately to queries
	SA7. Communicate with supervisor, team members, other departments e.g. – operations, stores etc.
	Analytical Thinking
	The user/individual on the job needs to know and understand how to:
	SB1. Diagnose common problems in the mobile equipments based on visual inspection, sound, temperature etc.
	SB2. Suggest improvements(if any) in process based on experience



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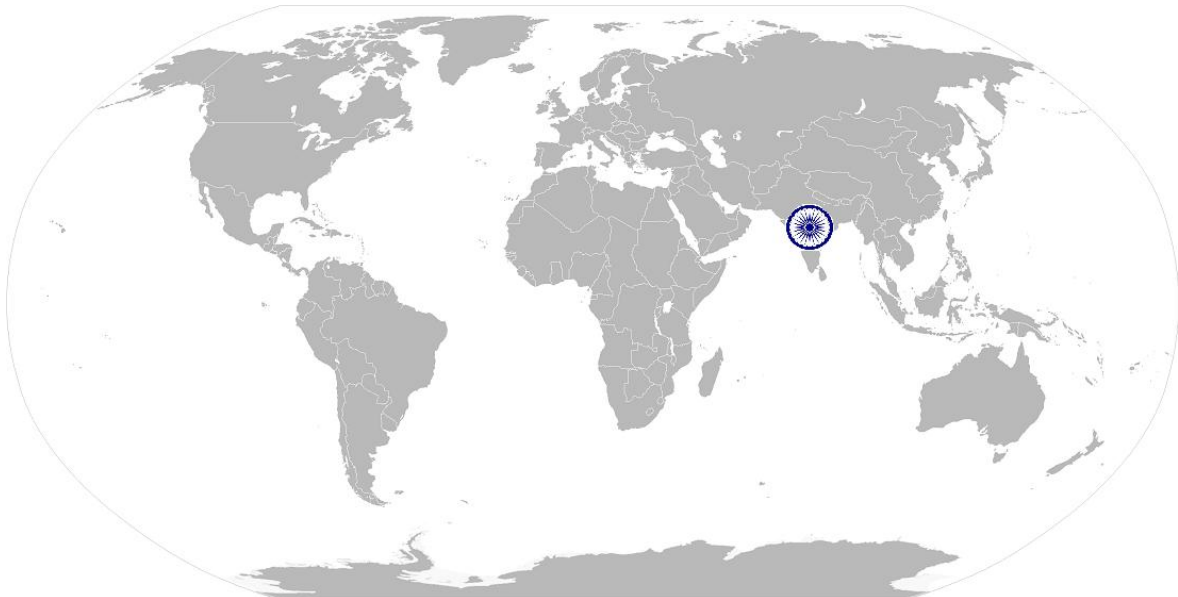
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ISC/N0008: Use basic health and safety practices at the workplace

National Occupational Standards



Overview

This unit covers health, safety and security at the workplace. This includes procedures and practices that candidates need to follow to help maintain a healthy, safe and secure work environment.



Unit Code	ISC/N0008
Unit Title (Task)	Use basic health and safety practices at the work place
Description	<p>This OS unit is about knowledge and practices relating to health, safety and security that candidates need to use in the workplace. It covers responsibilities towards self, others, assets and the environment.</p> <p>It includes understanding of risks and hazards in the workplace, along with common techniques to minimize risk, deal with accidents, emergencies, etc.</p>
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Health and safety procedures • Fire safety procedures • Emergencies, rescue and first aid procedures
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Health and safety procedures	<p>The user/individual on the job should be able to:</p> <p>PC1. Use protective clothing/equipment for specific tasks and work conditions</p> <p>Protective clothing includes:</p> <ul style="list-style-type: none"> • Leather or asbestos gloves • Flame proof aprons • Flame proof overalls buttoned to neck • Cuff less (without folds) trousers • Reinforced footwear • Helmets/hard hats • Cap and shoulder covers • Ear defenders/plugs • Safety boots • Knee pads • Particle masks • Glasses/gloves/visors <p>Equipment includes:</p> <ul style="list-style-type: none"> • Hand shields • Machine guards • Residual current devices • Shields • Dust sheets • Respirator <p>PC2. State the name and location of people responsible for health and safety in the workplace</p>



Various areas are listed below:

- On chemical containers
- Equipment
- Packages
- Inside buildings
- Open areas, public places etc.

PC3. State the names and location of documents that refer to health and safety in the workplace

PC4. Identify job-site hazardous work and state possible causes of risk or accident in the workplace

Hazards include:

- Working with electrical and thermal tools and equipment
- Sharp edged and heavy tools
- Heated metals
- Oxyfuel and gas cylinders
- Welding radiation
- Surfaces: sharp, slippery, uneven, chipped, broken, etc.
- Substances: chemicals, gas, oxy-fuel, fumes, dust, etc.
- Physical: working at heights, large and heavy objects and machines, sharp and piercing objects, tools and machines, intense light, load noise, obstructions in corridors, by doors, blind turns, noise, over stacked shelves and packages, etc.
- Electrical: power supply and points, loose and naked cables and wires, electrical machines and appliances, etc.

PC5. Carry out safe working practices while dealing with hazards to ensure the safety of self and others state methods of accident prevention in the work environment of the job role

Safe working practices include:

- Using protective clothing and equipment
- Putting up and reading safety signs
- Handle tools in the correct manner and store and maintain them properly
- Keep work area clear of clutter, spillage and unsafe object lying casually
- While working with electricity take all electrical precautions like insulated clothing, adequate equipment insulation, use of control equipment, dry work area, switch off the power supply when not required, etc.
- Safe lifting and carrying practices
- Use equipment that is working properly and is well maintained
- Take due measures for safety while working in confined places, trenches or at heights, etc. Including safety harness, fall arrestors etc.

Methods are:

- Training in health and safety procedures
- Using health and safety procedures
- Use of equipment and working practices (such as safe carrying procedures)
- Safety notices, advice
- Instruction from colleagues and supervisors

	<p>PC6. State location of general health and safety equipment in the workplace PC7. Inspect for faults, set up and safely use steps and ladders in general use</p> <p>Faults :</p> <ul style="list-style-type: none"> • Corrosion of metal components • Deterioration • Splits and cracks timber components • Imbalance • Loose rungs • Nuts or bolts, etc. <p>Set up:</p> <ul style="list-style-type: none"> • Firm/level base • Clip/lash down • Leaning at the correct angle, etc. <p>PC8. Work safely in and around trenches, elevated places and confined areas PC9. Lift heavy objects safely using correct procedures PC10. Apply good housekeeping practices at all times. Good housekeeping practices:</p> <ul style="list-style-type: none"> • Clean/tidy work areas • Removal/disposal of waste products • Protect surfaces <p>PC11. Identify common hazard signs displayed in various areas PC12. Retrieve and/or point out documents that refer to health and safety in the workplace</p>
<p>Fire safety procedures</p>	<p>The user/individual on the job should be able to:</p> <p>PC13. Use the various appropriate fire extinguishers on different types of fires correctly.</p> <p>Fire extinguishers:</p> <ul style="list-style-type: none"> • Sand • Water • Foam • Co2 • Dry powder <p>Fires:</p> <ul style="list-style-type: none"> • Class A: Ordinary solid combustibles, e.g. wood, paper, cloth, plastic, charcoal etc. • Class B: Flammable liquids and gases, e.g. gasoline, propane, diesel fuel, tar, cooking oil and similar substances • Class C: Electrical equipment e.g. appliances, wiring, breaker panels etc. (these categories of fires become Class A, B, and D fires when the electrical equipment that initiated the fire is no longer receiving electricity) • Class D: Combustible metals such as magnesium, titanium, and sodium (these fires burn at extremely high temperatures and require special suppression agents) <p>Causes of fires:</p> <ul style="list-style-type: none"> • Heating of metal



	<ul style="list-style-type: none"> • Spontaneous ignition • Sparking, • Electrical heating • Loose fires (e.g. Smoking, welding, etc.) • Chemical fires, etc. <p>PC14. Demonstrate rescue techniques applied during fire hazard PC15. Demonstrate good housekeeping in order to prevent fire hazards PC16. Demonstrate the correct use of a fire extinguisher</p>
<p>Emergencies, rescue and first-aid procedures</p>	<p>The user/individual on the job should be able to:</p> <p>PC17. Demonstrate how to free a person from electrocution PC18. Administer appropriate first aid to victims as required e.g. in case of bleeding, burns, choking, electric shock, poisoning etc. PC19. Demonstrate basic techniques of bandaging PC20. Respond promptly and appropriately to an accident situation or medical emergency in real or simulated environments. Few general health and safety equipment are mentioned below :</p> <ul style="list-style-type: none"> • Fire extinguishers • First aid equipment • Safety instruments and clothing • Safety installations, e.g. Fire exits, exhaust fans etc. <p>PC21. Perform and organize loss minimization or rescue activity during an accident in real or simulated environments PC22. Administer first aid to victims in case of a heart attack or cardiac arrest due to electric shock, before the arrival of emergency services in real or simulated cases PC23. Demonstrate the artificial respiration and the CPR Process PC24. Participate in emergency procedures. Emergency procedures are:</p> <ul style="list-style-type: none"> • Raising alarm • Safe/efficient evacuation • Correct means of escape • Correct assembly point • Roll call • Correct return to work <p>PC25. Complete a written accident/incident report or dictate a report to another person, and send report to person responsible Incident Report should capture:</p> <ul style="list-style-type: none"> • Name • Date/time of incident • Date/time of report, • Location • Environment conditions • Persons involved • Sequence of events • Injuries sustained • Damage sustained • Actions taken • Witnesses



	<ul style="list-style-type: none"> • Supervisor/manager notified <p>Documents:</p> <ul style="list-style-type: none"> • Fire notices • Accident reports • Safety instructions for equipment and procedures • Company notices and documents • Legal documents (e.g. Government notices) <p>Job titles:</p> <ul style="list-style-type: none"> • Health and safety officer • First aid officer • Fire officer <p>PC26. Demonstrate correct method to move injured people and others during an emergency</p>
Element	Knowledge and Understanding
<p>A. Organisational Context (Knowledge of the Company/ Organisation and its processes)</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. State the names (and job titles if applicable), and describe where to find, all the people responsible for health and safety in a workplace</p> <p>KA2. State the names and location of documents that refer to health and safety in the workplace</p>
<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB3. Meaning of “hazards” and “risks”</p> <p>KB4. Health and safety hazards commonly present in the work environment and related precautions</p> <p>KB5. Possible causes of risk, hazard or accident in the workplace and why risk and/or accidents are possible</p> <p>KB6. Activities and causes of risk and accident</p> <p>KB7. Methods of accident prevention</p> <p>KB8. Safe working practices when working with tools and machines</p> <p>KB9. Safe working practices while working at various hazardous sites</p> <p>KB10. Where to find all the general health and safety equipment in the workplace</p> <p>KB11. Various dangers associated with the use of electrical equipment</p> <p>KB12. Preventative and remedial actions to be taken in the case of exposure to toxic materials</p> <ul style="list-style-type: none"> • Exposure: ingested, contact with skin, inhaled • Preventative action: ventilation, masks, protective clothing/equipment • Remedial action: immediate first aid, report to supervisor • Materials: solvents, flux, lead <p>KB13. Importance of using protective clothing/equipment while working</p> <p>KB14. Precautionary activities to prevent the fire accident</p> <p>Activities and causes:</p> <ul style="list-style-type: none"> • Physical actions • Reading • Listening to and giving instructions



	<ul style="list-style-type: none"> • Inattention • Sickness and incapacity (e.g. Drunkenness) • Health hazards (e.g. Untreated injuries and contagious illness) <p>KB15. Various causes of fire KB16. Techniques of using the different fire extinguishers KB17. Different methods of extinguishing fire KB18. Rescue techniques applied during a fire hazard KB19. Various types of safety signs and what they mean KB20. Appropriate basic first aid treatment relevant to the condition e.g. Shock, electrical shock, bleeding, breaks to bones, minor burns, resuscitation, poisoning, eye injuries KB21. Content of written accident report KB22. Potential injuries and ill health associated with incorrect manual handling KB23. Safe lifting and carrying practices KB24. Personal safety, health and dignity issues relating to the movement of a person by others KB25. Potential impact to a person who is moved incorrectly</p>
Skills (S) w.r.t. the scope	
Element	Skills
A. Core Skills/ Generic Skills	Reading and Writing Skills
	The user/individual on the job needs to know and understand how to: SA1. Read and comprehend basic content to read labels, charts, signage's SA2. Read and comprehend basic English to read manuals of operations SA3. Read and write an accident/incident report in local language or English
	Oral Communication (Listening and Speaking skills)
	The user/individual on the job needs to know and understand how to: SA4. Question co-workers appropriately in order to clarify instructions and other issues SA5. Give clear instructions to co-workers, subordinates others
	Decision Making
	The user/individual on the job needs to know and understand how to: SA6. Make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down procedure and guidelines
B. Professional Skills	Plan and Organize
	The user/individual on the job needs to know and understand: SB1. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity

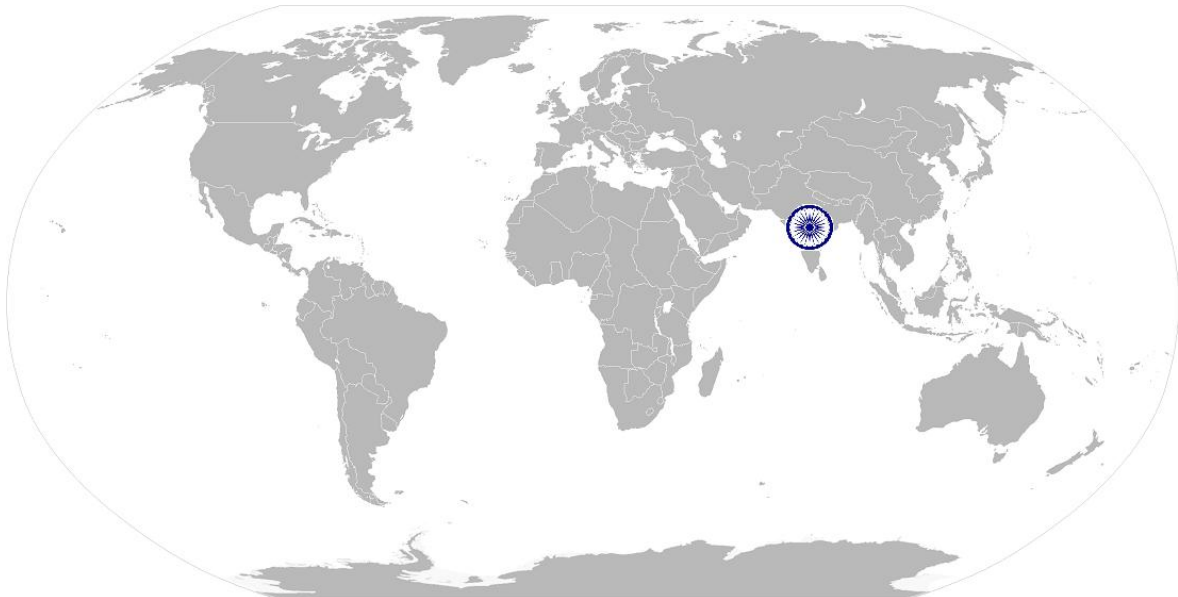


	Working with others
	The user/individual on the job needs to know and understand how to: SB2. Remain congenial while discussing and debating issues with co-workers SB3. Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB4. Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB5. Thank co-workers for any assistance received SB6. Offer appropriate respect based on mutuality and respect for fellow workmanship and authority
	Problem Solving
	The user/individual on the job needs to know and understand how to: SB7. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB8. Identify immediate or temporary solutions to resolve delays SB9. Identify sources of support that can be availed of for problem solving for various kind of problems SB10. Seek appropriate assistance from other sources to resolve problems SB11. Report problems that you cannot resolve to appropriate authority
Analytical Thinking	
	The user/individual on the job needs to know and understand how to: SB12. Identify cause and effect relations in their area of work SB13. Use cause and effect relations to anticipate potential problems and their solution



NOS Version Control

NOS Code	ISC/N0008		
Credits(NSQF)	TBD	Version number	1.0
Industry	Iron and steel	Drafted on	23/07/2014
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Occupation	Maintenance	Next review date	30/12/2015





ISC/N0009: Work effectively with others

National Occupational Standards



Overview

This unit covers basic practices that improve effectiveness of working with others in an organisational set-up.



Unit Code	ISC/N0009
Unit Title (Task)	Work effectively with others
Description	This unit covers basic etiquette and competencies that a candidate is required to possess and demonstrate in their behaviour and interactions with others at the workplace.
Scope	<p>This unit/task covers the following:</p> <ul style="list-style-type: none"> • Ensure appropriate communication with superiors, peers and others as applicable at work place • Demonstrate appropriate behaviour and etiquette at work place
Performance Criteria (PC) w.r.t. the Scope	
Element	Performance Criteria
Ensure appropriate communication with superiors, peers and others as applicable at work place	<p>The user/individual on the job should be able to:</p> <p>PC1. Accurately receive information and instructions from the supervisor and fellow workers, getting clarification where required</p> <p>PC2. Accurately pass on information to authorized persons who require it and within agreed timescale and confirm its receipt</p> <p>PC3. Provide information to others clearly, at a pace and in a manner that helps them to understand</p>
Demonstrate appropriate behaviour and etiquette at work place	<p>The user/individual on the job should be able to:</p> <p>PC4. Display helpful behaviour by assisting others in performing tasks in a positive manner, where required and possible</p> <p>PC5. Consult with and assist others to maximize effectiveness and efficiency in carrying out tasks</p> <p>PC6. Display appropriate communication etiquette while working</p> <p>PC7. Display active listening skills while interacting with others at work</p> <p>PC8. Use appropriate tone, pitch and language to convey politeness, assertiveness, care and professionalism</p> <p>PC9. Demonstrate responsible and disciplined behaviours at the workplace</p> <p>PC10. Escalate grievances and problems to</p>
Element	Knowledge and Understanding
A. Organisational Context (Knowledge of the Company/ Organisation and its processes)	<p>The user/individual on the job needs to know and understand:</p> <p>KA1. Legislation, standards, policies, and procedures followed in the company relevant to own employment and performance conditions</p> <p>KA2. Reporting structure, inter-dependent functions, lines and procedures in the work area</p> <p>KA3. Relevant people and their responsibilities within the work area</p> <p>KA4. Escalation matrix and procedures for reporting work and employment related issues</p>



<p>B. Technical Knowledge</p>	<p>The user/individual on the job needs to know and understand:</p> <p>KB1. Various categories of people that one is required to communicate and co-ordinate with in the organization KB2. Importance of effective communication in the workplace KB3. Importance of teamwork in organizational and individual success KB4. Various components of effective communication KB5. Key elements of active listening KB6. Value and importance of active listening and assertive communication KB7. Barriers to effective communication KB8. Importance of tone and pitch in effective communication KB9. Importance of avoiding casual expletives and unpleasant terms while communicating professional circles KB10. How poor communication practices can disturb people, environment and cause problems for the employee, the employer and the customer KB11. Importance of ethics for professional success – KB12. Importance of discipline for professional success KB13. What constitutes disciplined behaviour for a working professional KB14. Common reasons for interpersonal conflict KB15. Importance of developing effective working relationships for professional success KB16. Expressing and addressing grievances appropriately and effectively KB17. Importance and ways of managing interpersonal conflict effectively</p>
<p>Skills (S) w.r.t. the scope</p>	
<p>Element</p>	<p>Skills</p>
<p>A. Core Skills/ Generic Skills</p>	<p>Reading and Writing Skills</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA1. Read and comprehend basic content to read labels, charts, signage's SA2. Read and comprehend basic English to read manuals of operations SA3. Read and write an accident/incident report in local language or English</p> <p>Oral Communication (Listening and Speaking skills)</p> <p>The user/individual on the job needs to know and understand how to:</p> <p>SA4. Question co-workers appropriately in order to clarify instructions and other issues SA5. Provide clear instructions to co-workers, subordinates others</p> <p>Decision Making</p>
	<p>The user/individual on the job needs to know and understand how to:</p> <p>SA6. Make appropriate decisions pertaining to the concerned area of work with respect to intended work objective, span of authority, responsibility, laid down</p>



	procedure and guidelines
B. Professional Skills	Plan and Organize
	The user/individual on the job needs to know and understand:
	SB1. Plan and organize their own work schedule, work area, tools, equipment and materials to maintain decorum and for improved productivity
	Working with others
	The user/individual on the job needs to know and understand how to:
	SB2. Remain congenial while discussing and debating issues with co-workers SB3. Follow appropriate protocols for communication based on situation, hierarchy, organizational culture and practice SB4. Ask for, provide and receive required assistance where possible to ensure achievement of work related objectives SB5. Thank co-workers for any assistance received SB6. Offer appropriate respect based on mutuality and respect for fellow workmanship and authority
Problem Solving	
The user/individual on the job needs to know and understand how to:	
SB7. Think through the problem, evaluate the possible solution(s) and suggest an optimum /best possible solution(s) SB8. Identify immediate or temporary solutions to resolve delays SB9. Identify sources of support that can be availed of for problem solving for various kind of problems SB10. Seek appropriate assistance from other sources to resolve problems SB11. Report problems that you cannot resolve to appropriate authority	
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The user/individual on the job needs to know and understand how to:	
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Occupation	Maintenance	Next review date	30/12/2015

