



**DEMERARA HARBOUR BRIDGE CORPORATION
JOB DESCRIPTION**

JOB TITLE:	MECHANICAL ENGINEER	LOCATION:	ASHALT PLANT
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I. ACCOUNTABILITY OBJECTIVE

Responsible for providing mechanical and technical expertise to achieve the required reliable performance of new and existing equipment, machines and motor vehicles utilized at the **Asphalt Plant**; to support optimizing production processes with regards to safety, environment, reliability, quality, efficiency and regulatory requirements; provide leadership in the implementation of preventive and predictive maintenance programmes required for the mechanical integrity of equipment, machines and motor vehicles.

II. DIMENSIONS OF POSITION

A. NATURE AND SCOPE OF THE POSITION

The **Mechanical Engineer** is responsible for directing and controlling the **Asphalt Plant** mechanical engineering function to ensure that the repair and maintenance of the plant, machinery, generators, welding plant and motor vehicles are done to agreed standards. The **Incumbent** oversees mechanical engineering projects to ensure that they are completed to the standards required within agreed timelines.

The **Incumbent** identifies and implements improvements of existing equipment and installations. The **Incumbent** develops implements and reviews equipment maintenance procedures to improve consistency and quality of repairs.

The **Mechanical Engineer** creates and analyzes designs, runs simulations and tests how a machine is likely to work, and generates specifications for parts using computers. The **Incumbent** develops, tests and evaluates theoretical designs, plans new production process and recommends modification.

The **Incumbent** recruits, trains and motivates maintenance staff to ensure that they carry out their responsibilities to the required standards. The Incumbent must make arrangements to train workers on more effective techniques to increase their technical knowledge and make them more effective to increase productivity.

The **Mechanical Engineer** must determine the Major Job Objectives for each Aspect of the Work Programme of the Mechanical Section and identify and discuss with other engineers and subordinates the "Key Results Areas" to be used as determinants to their performance results on a quarterly basis.

B. PRINCIPAL ORGANISATIONAL RELATIONSHIPS:

(The Incumbent relates to the following areas/titles internally and externally in carrying out accountability objectives)

<u>AREA/TITLE:</u>	<u>RESPONSIBILITY:</u>
INTERNAL:	
Plant Superintendent	To obtain approval for internal stores requisitions to obtain spare parts; to report on progress of repairs; to make arrangements for external contractors to effect repairs and maintenance in special circumstances; to ensure that all relevant

documents are in order; e.g. insurance, fitness etc.; to review comment and make recommendations on requests for service.

Maintenance Mechanic

To review mechanical tasks and detail and assign work on the basis of requests; to review implementation of maintenance schedule and any specific recommendations for repairs and servicing.

Welder

To assign work on the basis of requests; to review implementation of maintenance schedule and any special recommendations for repairs.

Stores Section

To approve requisitions to obtain spare parts; to ensure adequate stock levels and adequate stock-control records.

C. PERSONNEL SUPERVISED BY THIS POSITION INCLUDE:

DIRECTLY

Plant Superintendent

INDIRECTLY

Welder

Mechanic

Stores

III. PRINCIPAL ACTIVITIES TO ATTAIN ACCOUNTABILITY OBJECTIVES:

(The following responsibility statements identify specific duties necessary to attain DHBC's overall objectives while not precluding the position holder from carrying out other related activities that may be inherent in the position)

IDENTIFIES, PLANS, ORGANISE, and VALIDATES the installation repairs and maintenance of plant, generators, welding plant, motor vehicles and other equipment.

DEVELOPS and IMPLEMENT formal prioritization systems that assures the most serious problems are corrected expeditiously utilizing proactive maintenance strategies, and ensures restoration to proper functioning order.

ANALYSE WORK and FOLLOW-UP as a mechanism to compare actual work with plans, identify variances to determine when adjustment is needed to measure accuracy of job plans.

CONTINUOUSLY IMPROVE equipment and system reliability using predictive and preventative maintenance systems, failure analysis and root cause analysis. **PROVIDES** guidance to troubleshooting, repairs and refurbishment of mechanical equipment, machines and motor vehicles.

SUPERVISES, SCHEDULES and COORDINATES the repair/maintenance work programme for subordinates. **OVERSEES** mechanical maintenance work to ensure that it is carried out to the required standard and within agreed budget levels.

ENSURES all assigned equipment is continually maintained at the workshop with the highest standards, resulting in proper functionality and minimum failures.

CREATE and CONTINUOUSLY UPDATE POST-WORK DOCUMENTATION PROCESS for measuring and communicating mechanical maintenance performance, including the analysis of equipment failure through the use of **Maintenance Management Systems**.

PERFORMS quality checks and modifications strictly as **per procedure** and according to defined schedule.

RECORDS all maintenance and failures events immediately and accurately.

CONTINUOUSLY UPDATE knowledge of modern maintenance techniques, machinery and equipment and recommend new systems to enhance effectiveness of engineering function.

DEVELOPS, IMPLEMENTS and REVIEWS equipment maintenance procedures to improve consistency and quality of repairs.

DEVELOPS the Section's budget in discussion with other Engineering Specialists and Managers.

PROVIDES expert technical advice on all aspects of mechanical engineering to other Managers and Staff to ensure effective decision making.

ENSURES that all mechanical maintenance engineering activities are carried out in accordance with the Corporation's health and safety requirements and in compliance with relevant health and safety legislation.

INVESTIGATES and RESOLVES any disciplinary or employee relations issues to ensure that plant, machinery, equipment continue to be maintained to the standards necessary to meet operational requirements.

ENSURES replenishment of oxygen and acetylene.

APPROVES requisition forms for fuel, replacement parts, tools, materials, and safety gear and equipment for welders and mechanics necessary for works.

VERIFIES employee overtime sheets, time sheets, time-off forms and vacation leave.

DESIGNS and IMPLEMENTS cost-effective equipment modifications to help improve safety and reliability.

READS and INTERPRETS blueprints, technical drawings, schematics, and computer-generated reports.

USES research, analytical, conceptual and planning skills, particularly mathematical modelling and computer-aided designs.

SPECIFIES system components and **DIRECTS** modification of products to ensure conformance with engineering design and performance specifications.

RESEARCHES, DESIGNS, EVALUATES, INSTALLS, OPERATES, and MAINTAINS mechanical products, equipment, systems and processes to meet requirements; **APPLIES** knowledge of engineering principles.

SUPPORTS Company's departmental mechanical programmes and **EXECUTES** daily, weekly and monthly checklist.

ASSISTS management in specifying proper supplies and equipment for operations.

PREPARES reports, correspondence and **MAINTAINS** documentation of operations.

TRAINS, MOTIVATES and **EVALUATES** subordinate staff; **WORKS** with employees to correct deficiencies; **IMPLEMENTS** discipline and termination procedures.

PROMOTES a culture of safety awareness within the Corporation.

ENSURES the work areas are clean, safe and orderly at all times.

DEVELOPS and **IMPLEMENTS** performance measurements.

MONITORS and **DOCUMENTS** all services to ensure they conform to health and safety standards and **ENSURES** that contractors are made aware of these requirements.

IV. MANAGEMENT JOB DESCRIPTION EVALUATION: QUALIFICATIONS PROFILE

POSITION TITLE: Mechanical Engineer		
FACTORS	SUBSTANTIATING DATA	
1	EDUCATION	University first degree in Mechanical Engineering is required with Project Management skills is also desirable.
2	EXPERIENCE/JOB KNOWLEDGE	Up to five (5) years' experience and knowledge in thermodynamics, fluid dynamics, and kinematics, and fundamental leadership and management principles. Ability to evaluate mechanical systems, components, and applications well as finished products and system capabilities. Must be able to trouble shoot systems and report research results. Attention to detail is important to the job.
3	TECHNICAL/ PROFESSIONAL	Maintains professional technical knowledge by attending technical workshops; Reviews professional publications, establishes personal networks, and participates in professional societies.
4	PROBLEM SOLVING/ DECISION MAKING	Evaluates mechanical and electro- mechanical systems and products by designing and conducting research programmes, applying principals of mechanics, thermodynamics, hydraulics, heat transfer and materials. Analyses problems to see how mechanical and thermal devices helps solves problems.
5	INTERPERSONAL	Confers with other engineers and other personnel to implement operating procedures, resolves systems malfunctions to maintenance and provide technical information.
6	RESPONSIBILITY FOR MATERIALS, CASH, ETC	Responsible for providing mechanical and technical expertise to achieve the required reliable performance of new and existing equipment, machines and motor vehicles utilized at the Asphalt Plant ; to support optimizing production processes with regards to safety, environment, reliability, quality, efficiency and regulatory requirements; provide leadership in the implementation of preventive and predictive maintenance programmes required for the mechanical integrity of equipment, machines and motor vehicles.
7	PROCEDURES/ REGULATIONS/ COMPLIANCES	Specify system components or direct modification of products to ensure conformance with engineering design and performance specifications.
8	TEAM WORK	Works with a team and provides oversight and technical reference points; grades and evaluates team to guide installation, maintenance and repairs.
9	WORKING ENVIRONMENT	The working environment involves high risks and frequent exposure to potentially dangerous situations which might require special safety precautions. Employees may be required to use protective clothing or gear such as masks, coats, boots or gloves.

LICENCES:

SIGNATURES:

PREPARED BY: S.V. JONES ASSOCIATES

DATE:

REVIEWED BY _____ **DESIG.** _____ **DATE:** _____

APPROVED BY _____ **DESIG.** _____ **DATE:** _____

APPROVED BY _____ **DESIG.** _____ **DATE:** _____