DEMERARA HARBOUR BRIDGE CORPORATION
MANAGEMENT POSITION DESCRIPTION

JOB TITLE:	**Mechanical Maintenance Engineer**	**LOCATION:**	**HEAD OFFICE**
REPORTS TO:	**MAINTENANCE MANAGER**	**GRADE:**	
DEPARTMENT:	**MAINTENANCE**	**SECTION:**	**MECHANICAL**

I. ACCOUNTABILITY OBJECTIVE

Responsible for providing mechanical and technical expertise to achieve the required reliable performance of new and existing equipment, machines, mechanical components, hydraulic dredge machinery, and motor vehicles utilized at the **Demerara Harbour Bridge**; to support optimizing production processes with regard 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 Maintenance Engineer** is responsible for directing and controlling the **Corporation's** mechanical engineering function to ensure the repair and maintenance of generators, retractor span, welding plant, hydraulic components and equipment, dredge equipment, tug, dredge, speed boat, and motor vehicles are maintained 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 Maintenance 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 processes, and recommends modification.

The **Incumbent** 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 Maintenance Engineer** must determine on an annual basis the Major Job Objectives for each Aspect of the Work Programme of the Mechanical Section and identify and discuss with subordinate 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)

AREA/TITLE:	**RESPONSIBILITY:**
INTERNAL:	
Maintenance Manager	To agree with Work Programme targets, staffing requirements; to discuss reports submitted and implementation of operating procedures, resolve system malfunctions and provide technical information.

Mechanical Maintenance Officer	To define targets, highlight priorities, agree with timelines for effecting specified projects; to review activity progress relating to routine maintenance schedules; to review inventory and coordinate access to materials. Review safety and quality standards.
Other Specialist Engineers	To assess safety needs; to review reports and plans; to participate in the development of corrective measures where necessary; to serve on the interviewing panel to select engineering personnel for employment.
EXTERNAL:	
Contractors Workshops/	To liaise with external contractors in relation to mechanical repairs.
Auto dealers	To secure materials and parts required for maintenance activities.

C. PERSONNEL SUPERVISED BY THIS POSITION INCLUDE:

DIRECTLY	**INDIRECTLY**
Mechanical Maintenance Officer	Mechanical Maintenance Foreman Maintenance Mechanics Skid Steer Operator Dredge Operators Welding/Fabricator Technicians Boat Operators

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)

DIRECTS and **CONTROLS** the staff to ensure the installation, operation, maintenance, and repair of equipment, machines, and motor vehicles utilized are maintained to agreed standards.

PLANS maintenance works in relation to the installation, repair, and maintenance of deck plates, bridge walkways, generators, retractor span, welding span, welding plant, tug, dredge, speedboat, dredge equipment, and motor vehicles.

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

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.

MONITORS mechanical maintenance work to ensure that it is carried out to the required standard and within agreed budget levels.

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.

COORDINATES servicing of dredge and tug every 250 hours and rehabilitation to speedboat every 18-24 months.

LIAISE and **COMMUNICATES** with shipping agents/owners of vessels prior to and during Bridge retractions.

MAINTAINS knowledge of modern maintenance techniques, machinery, and equipment and recommend any new systems that will enhance the effectiveness of the engineering function.

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

MONITORS repair and maintenance (Delta works) done on the bridge.

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, timesheets, 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 modeling, and computer-aided designs.

SPECIFIES system components or **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.

ENSURES workers observe appropriate safety and accident prevention practices.

ENSURES all By-Laws, Procedures, and Regulations governing bridge operations are strictly adhered to.

IV. MANAGEMENT JOB DESCRIPTION EVALUATION: QUALIFICATIONS PROFILE

POSITION TITLE: Mechanical Maintenance 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, 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 troubleshoot 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**	Evaluate mechanical and electro-mechanical systems and products by designing and conducting research programs, applying principles of mechanics, thermodynamics, hydraulics, heat transfer, and materials. Analyses problems to see how mechanical and thermal devices help solve problems.
5	**INTERPERSONAL**	Confers with other engineers and other personnel to implement operating procedures, resolves systems malfunctions to maintenance, and provides 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, mechanical components, hydraulic dredge machinery, and motor vehicles utilized at the **Demerara Harbour Bridge**; to support optimizing production processes with regard 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	**TEAMWORK**	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.