**-SQA-SCOTTISH QUALIFICATIONS AUTHORITY**

**Hanover House**
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**GLASGOW G2 7NG**

## NATIONAL CERTIFICATE MODULE DESCRIPTOR

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| **-Module Number-** | **0074407** | **-Session-1987-88** |
| **-Superclass-** | **VG** | |

**-Title-** **HEAVY PLANT FULL POWER STEERING AND BRAKES (x $^{1}/_{2}$)**

**-DESCRIPTION-**

Type and Purpose

A specialist module which develops the student's ability to understand and service full power steering and brakes as fitted to heavy construction plant.

Preferred Entry Level

64445 Mobile Plant Braking Systems 1
64447 Mobile Plant Steering 1
64481 Mobile Plant Hydraulic Systems

Learning Outcomes

The student should:

1. know the function and operation of components of axle power steering systems;
2. know the function and operation of articulated power steering systems;
3. know the function and operation of tracked vehicle power steering systems;
4. know the function and operation of hydraulic full power braking systems;
5. test and service full power steering and braking systems;
6. comply with regulations and procedures and use safe working practices specified for equipment and work areas.

Content/ Context

Corresponding to Learning Outcomes 1-6:

LO1 2,3 &4 Location, function and constructional features of pumps, control valves, actuators, accumulators, and fail safe features.

Advantages of individual systems.

Relationship of steering, transmission and braking components in individual systems.

5. Use of test procedures.

Operational faults and adjustments.

Servicing requirements.

Importance of safety factors.

6. Safety precautions related to hydraulic systems.

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Suggested Learning and Teaching Approaches

This module should be taught with access to typical plant machines providing a facility for demonstration and practical work.

General principles and not specific unit requirements should be taught. Students should have access to up-to-date technical manuals and specifications.

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Assessment Procedures

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each Learning Outcome.

Where cutting scores are stated these are intended to be for guidance. The precise cutting score for a test will depend on the difficulty of the test and will have to be decided by the Tutor aided by the Assessor.

The following abbreviations are used below:

LO Learning Outcome
IA Instrument of Assessment
PC Performance Criteria

LO1 IA Written test - 3 short answer questions in which the student is required to identify components of axle power systems, state their function and describe their operation.

PC Cutting score 70%.

LO2 IA Written test - 3 short answer questions in which the student is required to identify components of articulated power steering systems, state their function and describe their operation.

PC Cutting score 70%.

LO3 IA Written test - 3 short answer questions in which the student is required to identify components of tracked vehicle power steering systems, state their function and describe their operation.

PC Cutting score 70%.

LO4 IA Written test - 3 short answer questions in which the student is required to identify components of hydraulic full power braking systems, state their function and describe their operation.

PC Cutting score 70%.

LO5 IA Practical exercise - the student is required to test, report and service a given steering system.

PC The performance criteria should be based on:

(a) carrying out of visual and functional checks according to manufacturer's recommendations;

(b) correct identification and reporting of all defects;

(c) performing tests in a logical and methodical manner;

(d) carrying out service items recommended by the manufacturer;

(e) compliance with safety requirements.