-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION

GENERAL INFORMATION

-Module Number- **2211463** **-Session-1993-94**

-Superclass- **XR**

-Title- **VEHICLE BODY SUB STRUCTURES**

-DESCRIPTION-

GENERAL COMPETENCE FOR UNIT: Understanding the various types of underframe construction criteria.

OUTCOMES

1. describe the different chassis types;

2. explain the basic principles of underframe design and methods of body mounting;

3. identify the appropriate design criteria that apply to different body styles and types;

4. select the appropriate materials and fixing methods to match design criteria.

CREDIT VALUE: 1 NC Credit

ACCESS STATEMENT: Access is at the discretion of the centre.

For further information contact: Committee and Administration Unit, SQA, Hanover House, 24 Douglas Street, Glasgow G2 7NQ.

This specification is distributed free to all approved centres. Additional copies may be purchased from SQA (Sales and Despatch section) at a cost of £1.50 (minimum order £5).

NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION

STATEMENT OF STANDARDS

UNIT NUMBER: 2211463

UNIT TITLE: VEHICLE BODY SUB STRUCTURES

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

OUTCOME

1. DESCRIBE THE DIFFERENT CHASSIS TYPES

PERFORMANCE CRITERIA

(a) The identification of chassis types are accurate in terms of given principles.
(b) The description of the factors affecting chassis type is valid.

RANGE STATEMENT

Principles: design; body mounting; body construction.

Chassis: separate (ladder and cruciform); integral; semi-integral.

EVIDENCE REQUIREMENTS

Written and/or oral evidence that the candidate can identify types of chassis in terms of the principles detailed in the range.

Written and/or oral evidence that the candidate can identify three factors affecting chassis type selection.

OUTCOME

2. EXPLAIN THE BASIC PRINCIPLES OF UNDERFRAME DESIGN AND METHODS OF BODY MOUNTING

PERFORMANCE CRITERIA

(a) The explanation of the underframe design principles for types of chassis in common use is correct.
(b) The explanation of common body mounting systems is correct.

RANGE STATEMENT

Chassis: Separate (ladder and cruciform); integral; semi-integral.

Methods: separate construction: integral construction; semi-integral construction.

EVIDENCE REQUIREMENTS

Written and/or oral evidence that the candidate can identify the difference in underframe design and body mounting methods for vehicle construction.

OUTCOME

3. IDENTIFY THE APPROPRIATE DESIGN CRITERIA THAT APPLY TO DIFFERENT BODY STYLES AND TYPES

PERFORMANCE CRITERIA

(a) Reasons for the selection of different underframe types is correct.
(b) Reasons for the selection of different mounting systems is correct.

RANGE STATEMENT

Body types: platform; articulated; boxvan; pantechnicon; PSV (single and double deck); car.

EVIDENCE REQUIREMENTS

Written and/or evidence of the candidate's ability to provide reasons for using TWO different types of underframes and mounting systems.

OUTCOME

4. SELECT THE APPROPRIATE MATERIALS AND FIXING METHODS TO MATCH DESIGN CRITERIA

PERFORMANCE CRITERIA

(a) The selection criteria for underframe material are valid.
(b) The selection criteria for mounting bracket type and material are valid.
(c) The explanation for the choice of fixings is correct.

RANGE STATEMENT

Materials: steel (hot rolled and cold rolled sections, sheet, forgings); aluminium alloys (extensions, sheet, casting, forgings); timber; composites.

Mounting brackets: cast; fabricated.

Fixings; welding (MIG., TIG., MMA; oxy/fuel, resistance); bolts; rivets; screws.

EVIDENCE REQUIREMENTS

Oral and/or written evidence of the candidate's ability to select underframe material, mounting bracket type and appropriate fixings for a given specification.

ASSESSMENT RECORDS

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. Details of these requirements are given for each outcome. The assessment instruments used should follow the general guidance offered by the SQA assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Accurate records should be made of assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

SPECIAL NEEDS

In certain cases, modified outcomes and range statements can be proposed for certification. See references at end of Support Notes.

NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION

SUPPORT NOTES

UNIT NUMBER: 2211463

UNIT TITLE: VEHICLE BODY SUB STRUCTURES

SUPPORT NOTES: This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

NOTIONAL DESIGN LENGTH: SQA allocates a notional design length to a unit on the basis of time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 40 hours. The use of notional design length for programme design and timetabling is advisory only.

PURPOSE SQA publishes summaries of NC units for easy reference, publicity purposes, centre handbooks, etc. The summary statement for this unit is as follows:

On completion of this module, you will be able to outline the different types of chassis, underframes and methods of body mounting, along with materials and fixings used and explain the reasons for their choice.

CONTENT/CONTEXT Throughout this module safety and safe working practices should be observed. The candidate should understand the purpose and use of any machinery and equipment required and be aware of procedures for reporting faults.

Corresponding to Outcomes 1-4:

1. Will require identification of different chassis types by observation and comparison either by diagrammatic representation or direct observation.

2. Basic principles will best be explained using either mock-up representations or scale models for commercial vehicle/public service vehicle and specialised vehicle bodies.

3. Candidates should realise the practical problems associated with proving designs before construction along with the compliance of current legislation. This would be aided with some design/draughting layout skills.

4. Proprietary materials and the use of catalogues is recommended to allow comparisons to be investigated.

APPROACHES TO GENERATING EVIDENCE It is recommended that an integrated approach should be used when assessing these outcomes, which could be in the form of a project report rather than individual assessments.

ASSESSMENT PROCEDURES Centres may use the Instruments of Assessment which are considered most appropriate. Examples of Instruments of Assessments could be:

Outcome 1	Restricted response questions to cover both Performance Criteria (a) and (b).
Outcome 2 and 3	Combined practical exercise/assignment report to satisfy Performance Criteria (a) and (b) in both Outcomes 2 and 3.
Outcome 4	An assignment report/practical exercise to satisfy Performance Criteria (a), (b) and (c). OR An integrated Project Report to satisfy Performance Criteria.

RECOGNITION Many SQA NC units are recognised for entry/recruitment purposes. For up-to-date information see the SQA guide 'Recognised and Recommended Groupings'.

REFERENCES

1. Guidelines for Module Writers.
2. SQA's National Standards for Assessment and Verification.
3. For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment.
4. Procedures for special needs statements are set out in SQA's guide 'Students with Special Needs'.