

11 January 2005

To: SQA Co-ordinator  
Director of Education  
Head of Centre  
SQA Co-ordinator

**For the attention of all staff  
responsible for the delivery of  
National Qualifications in Technical  
Education**

| Action by Recipient  |
|--|
| Response required  |
| Note and pass on   |
| <input checked="" type="checkbox"/> None – update/information only |

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Dear Colleague

### **Technical Education — Update**

The contents of this letter should be passed to the member of staff responsible for Technical Education.

This is to update you on current developments in Technical Education subjects, ie Craft and Design, Product Design, Graphic Communication, Practical Craft Skills and Technological Studies.

I would like to take this opportunity to introduce myself as Qualifications Manager for Computing and Technical Subjects (NQ) and also to introduce Dave Main, taking over from Louise Lilly, as Qualifications Officer for Computing, Information Systems and Graphic Communication (NQ). Grant Woollard continues as Qualifications Officer for Craft and Design, Product Design, Technological Studies and Practical Craft Skills.

### **SQA website**

I have had a number of queries regarding difficulties in finding material on the website.

Arrangements documents, Principal Assessor reports and other public documents can be found on the subject page on the main website: [www.sqa.org.uk](http://www.sqa.org.uk).

The quickest way to access this material is to click on the NQ logo and then select the relevant subject from the subject drop-down menu.

NAB assessments, coursework tasks and projects can be found on the secure website. Access to this website is through your SQA Co-ordinator. Please note that the secure website contains material for HN and SVQ subjects as well as NQ

subjects. Once on the site select the relevant subject from the **NQ subject** drop-down menu.

### **Principal Assessor and Senior Moderator Reports**

Extracts from these reports are included in this update. Centres are advised to read the full reports which are available to download from SQA's website.

## **Product Design**

### **Design Assignment**

The Design Assignment tasks for 2005 will be issued at the end of January, the submission date remains the end of April. Paper copies of the tasks will be sent directly to SQA Co-ordinators in January and an electronic version posted on SQA's secure website.

Although each Design Assignment will give a choice of four tasks, candidates must only complete one of these. Please ensure that candidates read the instructions carefully. Once a centre has handed out the tasks to candidates, **no teacher assistance may be given during the times when formal Design Assignment work is being undertaken as all work must be that of individual candidates.**

**A maximum of eight single-sided sheets of A3 is allowed. Any additional sheets submitted over the eight allowed will not be marked.** The original work (ie, not photocopied or scanned versions) must be submitted. Flyleaves, which must be used to authenticate the candidate's work, will be made available to centres in mid-February.

Copies of the revised Design Assignment Guidance, Intermediate 2 (Sep 2004) and Higher (Aug 2004), and Extended Case Study Guidance, Advanced Higher (Sep 2004) have already been sent out to centres. These are also available to download from the website.

### **Specific Guidance on Unit 2 — Developing Design Proposals**

Centres should note that the marks for graphics and modelling are awarded in relation to the development and design proposal throughout Unit 2 and not for graphics or models produced in other Units. Evidence of graphics and modelling from the Design Assignment is also invalid.

### **Support Materials**

A range of exemplars has now been produced for Units and the Design Assignment. A list of what is currently available is shown in Appendix 1. It is the intention to have three folios at each level with commentaries for each. These will continue to be added to SQA's website.

Candidate progress sheets have also been produced to assist centres in monitoring and recording Unit achievement. These are available in the same section as the NABs on the SQA secure website.

## **Legacy Arrangements**

Centres wishing advice on how to deal with candidates who have a Unit(s) from Craft and Design missing or who wish to upgrade or re-sit the external assessment should contact their Customer Account Manager in the first instance.

## **Feedback from Principal Assessors' Reports Craft and Design**

### **Standard Grade**

As in previous years centres require to concentrate on the theory associated with the metal working aspects of the Course, in particular metal turning and casting.

Knowledge of all aspects of wood turning requires to be addressed by some centres.

All processes identified in the syllabus should be covered in teaching the knowledge and understanding element, eg heat treatment, vacuum forming.

### **Intermediate 2**

It is appreciated that many candidates derive great benefit from producing informative and attractively presented work within their Design Assignments. Some will benefit in confidence, simply from the exercise of producing neat work, some will gain information from that work which they can then take with them into an examination.

It must be remembered, however, that bold and attractive borders and headings do not gain the candidates any marks in the Design Assignment. Similarly, research and investigation which is not directly linked to the design task will not gain the candidates any marks and in order to ensure that there is a link, candidates must highlight or underline all directly relevant aspects of their research otherwise, this will not gain any marks. Although this trend is happily decreasing, there are still too many candidates producing many pages of cut 'n' paste photocopies or hand-written work which eventually score zero marks.

The above feedback to centres is largely similar to last year.

In the examination, candidates need to focus on examination technique so that they can appropriately respond to questions, eg:.

- ◆ A question asking for anthropometric considerations relative to a shower cabinet is really expecting a response which refers to both a human dimension (eg stature) and a dimension of part of the cabinet (eg height of the spray head). Not simply to one or the other.
- ◆ A question asking for physiological considerations relative to a shower cabinet is really expecting a response which refers to both a physical action (eg twisting) and a part of the shower cabinet (eg the dial on the control box). Again, not simply one or the other.

## **Higher**

Next year the subject changes to the new Product Design Course. Centres should listen to advice given at the launch seminars and look at the style of question being asked in the exemplar paper.

The new shorter Design Assignment should leave considerably more time for teaching Course content which should enhance candidates Knowledge & Understanding.

## **Advanced Higher**

Candidates should take time and effort to clearly set out the Problem Definition. This will seek to focus the candidate on the work ahead.

Teachers should monitor and advise candidates more closely on Section1 (b), Project Management Planning.

Candidates should be encouraged to produce quickly generated sketches. Elaborate, rendered sketches should be discouraged in the early stages of the folio.

Sketches, no matter how basic or elaborate, should always be accompanied by annotations.

There is still scope for improvement in the area of synthesis. There is ample opportunity for practising this technique in the Units and pupil difficulties in synthesising should be spotted and rectified at this stage.

Candidates should be encouraged to use as wide a variety of presentation as possible. The use of modelling in whatever material should be promoted by all.

Ideas and concepts should display a coherent progression. Isolated sketches with little relevance to each other are not the way designers operate and will not attract good marks.

Once a design is nearing completion, candidates should begin to consider the possible materials and manufacturing processes which may be required to manufacture the product. Candidates must be exposed to a wider variety of both of these factors.

Candidates should appreciate that, for Advanced Higher, the depth of response required for both the folio and written paper is greater than that of Higher.

When responding to questions or problems, answers must be substantiated with some form of corroborative evidence. Making statements without justifying or exemplifying them will not attract many marks

## **Feedback from Senior Moderators' Reports (Craft and Design)**

### **Standard Grade Visiting Moderation**

Most centres produced neat well-structured folios with evidence of good quality graphics.

The feedback from moderation confirms a lack of creativity and too much inappropriate research involving straight copying from books and data sheets.

Some centres should address the approach to Designing for Credit candidates in order that the transition to Higher is smoother.

When moderated, centres should complete the 'Assistance to Candidates' form fully.

### **Int 2 and Higher Central Moderation**

A large number of centres should be congratulated on the quality of their candidates' Unit work and of the manner in which they so diligently presented their candidates' work for moderation.

It is difficult to be specific with regard to feedback this year because, as a result of the NQ review in Craft and Design (now changed to Product Design), many of the issues raised during the moderation exercise will not be pertinent in the future.

The advice given below can therefore only be of a general nature.

- ◆ Centres should build on the experiences gained in previous moderation exercises in Craft and Design and utilise this good practice in marking the Units of the new Course.
- ◆ Centres should read carefully the requirements of the Unit and in particular the instruments of assessment.
- ◆ To ensure accuracy and to avoid missing out relevant documentation, it is strongly recommended that, in this inaugural year, a system of cross marking be employed whenever possible. This should hopefully alleviate errors and ensure a good chance of a successful moderation.

In the first year of Product Design, SQA will endeavour to be as supportive as possible to centres whilst still adhering to national standards. In this regard centres are encouraged to contact the Moderation Unit within SQA to seek assistance whenever they encounter difficulties with assessment of the Course.

### **Advanced Higher Central Moderation**

The overall standard was better than previous years. There are indications that centres and teachers are becoming more familiar and confident with the requirements of the Course.

Centres should take cognisance of the reduction in evidence requirements.

Centres must select their Unit completion dates with care. They must ensure that their candidates have enough time to complete the Units in case they are requested for moderation.

Marking was inconsistent in some instances; cross-marking is a tool which can be utilised to ensure a common standard.

Candidates should endeavour to sectionalise their folios. Outcomes and PCs should be clearly labelled.

Candidates should try to be more concise in their use of text while utilising models and photographic evidence more.

Timelines should be employed in Unit 129, *Case Study*.

A common theme running through this year's moderation was the number of candidates who found it difficult to evaluate properly. Teachers should attempt to address this failing with their pupils by practicing evaluation techniques.

Centres should be more pro-active in advising their candidates on the choice of product for Unit work.

Candidates should not be presented for NAB tests until they are properly prepared and have completed their folio work.

## **Practical Craft Skills**

### **Issue of 2004/5 Course projects**

Details of the 2004/5 Course projects were sent to all centres via SQA Co-ordinators on 26 November 2004. There have been some minor revisions made to the drawings for the Single Door Cabinet. Centres may also choose the Clock project as an alternative to the Single Door Cabinet. Visiting moderation will take place between 28 March and 11 May 2005 and the last date for submissions to SQA is 14 May.

### **Unit Moderation**

For the first time, SQA will undertake a small pilot for moderation of Units in Practical Craft Skills Courses with a view to increasing this in future years. Centres selected for Unit moderation will be notified shortly of the details and timing of visits.

### **Prior Moderation of projects**

In response to the increasing number of requests to have Unit and Course projects prior moderated, SQA has developed a pro forma for centres wishing material to be considered. The forms can be found in Appendices 2a and 2b.

## **Feedback from Senior Moderator Report (Practical Craft Skills)**

### **Woodworking Skills**

Although the Courses were generally well conducted some centres need to be reminded:

- ◆ To enter full details of candidate internal assessment on the Moderation Sample Form.
- ◆ To enter full details of additional help required by candidates on the reverse of the Master Record Sheet.

It should be stressed that centres can assist the moderation process further by inserting subjective notes for each candidate to support the 'indication of degree of independence'.

Examples might be:

- ◆ Reasons for being marked down on a particular process.
- ◆ Details of poor attendance or absence through illness.
- ◆ Details of changes in rate of performance over the Course.
- ◆ Details of re-assessment performance.

To instruct candidates to run a rebate along the bottom of the clock rear of the carcass to allow the back ply to be seated more securely.

That the quality of the surface preparation and the application of an appropriate surface finish is an important part of the final project assessment and sufficient time should be allowed for these processes to be applied adequately.

Not to use the NAB project drawing intended for Intermediate 1 candidates for all candidates in the teaching group where there is mixed ability. Candidates should be given the working drawing, and instruction, appropriate to their potential to generate assessment evidence.

## **NAB Clocks**

While the quality of the vast majority of turnery evidence was found to be very good/excellent some centres allow candidates freedom to design:

- ◆ The split turnery
- ◆ The finial at the top
- ◆ The rake of the angled top detail

This may be acceptable if the candidates first draw the profile/shape/detail and then work to the sizes and form created — only if no size or shape is specified in the NAB drawing. Small design variations from the NAB specification should be applied to the whole teaching group and shown on the drawing and to the moderator.

Evidence of great care and attention to detail:

- ◆ Tolerances well within the limits specified, especially at Intermediate 2 level.
- ◆ Crisp arrises and turnery detail
- ◆ Well prepared external surfaces
- ◆ Well applied finishing coatings

However to ensure the maintenance of increasingly high standards of craft skills the following points could be passed on to centres.

- ◆ Ensuring candidate gauge marks are restricted only to the mortise lengths and to tenon shoulders so:
  - That no gauge marks show on finished work.
  - All saw and machine marks are removed.
  - All dimensions on the finished work match those on the drawing.
  - All joints are ‘flushed off’ using a sharp, finely set bench plane. No lips at shoulders etc.
  - All pencil and glue marks removed before application of finishing coatings.
  - Ply backs to carcasses and flat frames to be sawn in such a way that no ragged edges show on the finished face.

## **Engineering Craft Skills**

Centres to be advised not to encourage candidates to apply a heavy paint finish to projects until after the moderation is completed — tends to obscure the quality of welding evidence.

Pre-threaded bar to be used only by Int. 1 candidates. — Bike Clamp.

Centres to be advised to disregard the previously produced NAB drawing of Bike Clamp showing a single 15mm hole instead of a slot.

## **Technological Studies**

### **Application of Technology Assignments**

Two new Application of Technology Assignments were issued in November 2004 via SQA Co-ordinators. One Assignment has been issued for Applied Electronics and one for Programmable Control.

There are now seven AT Assignments in circulation for both Programmable Control and Applied Electronics. Centres may use one of the bank of AT assignments for the assessment of 2005 candidates, providing they can guarantee the security of any document(s) used.

However, the assignment on which centres base their 2005 candidate's grades for this element of the Course must not previously have been in the public domain, ie they cannot use the same summative AT issued to 2004 candidates. These can however be used for teaching and learning purposes.

## **Feedback from Principal Assessors' Reports (Technological Studies)**

### **Standard Grade**

It was evident from the improved results that many more centres are now using the Arrangements document rather than the LTS support materials to advise and prepare candidates for the external assessment.

As outlined above there are a number of areas of weakness that centres may wish to address:

- ◆ Systems theory including the explanation of closed loop control featuring error detection.
- ◆ Pneumatics — use of correct terminology (as issued with the revised Arrangements) to describe components.
- ◆ Completing system electronic block diagrams from a given description.
- ◆ Basic calculations associated with electrical circuits.
- ◆ Voltage divider theory and calculations
- ◆ The correct convention for describing an IC.

- ◆ An explanation of how Pulse Width Modulation is used with a microcontroller to set the speed of a motor.
- ◆ Reinforcing the use of PBASIC commands in order to avoid simple mistakes such as “pin 4 high” “if pin1=1 then goto main” or using “let dirs =%11000000” to switch on pin 7 and 6.
- ◆ Wiring input and output devices to a microcontroller.

### **Standard Grade Central Moderation**

While there was some variation in the application of the assessment criteria across centres, in all cases this was within the acceptable tolerance and every centre’s assessment within the sample was accepted. It can be deduced that teachers have a good understanding of the process and application of the criteria.

Some specific issues were identified in individual or small numbers of schools:

#### **Teacher assistance/prompting**

Some teachers noted that they had given help during the assignment and deducted marks accordingly. In other cases, it was clear that there had been teacher help because of the markings on candidates’ reports.

‘With the exception AT3, teacher assistance may be provided but only after a sub-element has been completed, submitted and marked. Teacher assistance is in effect retrospective and is set in the context of allowing a candidate to progress into the next sub-element....’ Guidance on Assessment, Section 1.

#### **Teacher comments on the EX 5 Flyleaf**

It is essential that teachers make comment on how they have judged the evidence and how much help they have given, especially for sub-element AT3.

### **Intermediate 2**

There are a number of areas that centres may wish to address:

- ◆ The correct use of PBASIC commands in order to avoid simple mistakes such as “pin 7 high”, “if pin1=1 then goto main” or using “let dirs =%11000000” to switch on pin 7 and 6.
- ◆ For...next loops and the use of sub-procedures.
- ◆ Microcontroller architecture including the function of the sub-systems.
- ◆ Systems theory including the explanation of closed loop control featuring error detection.
- ◆ Calculations involving the conservation of energy.

## **Higher**

### **Applied Electronics**

There were no major problem-areas, though many candidates reduced question 5 to two-input logic gates, where three-input gates would have been more appropriate, and simpler. A noticeable number of candidates were unable to draw a push-pull driver (question 6).

Most candidates were unable to provide a sufficiently detailed explanation of the operation of the op-amp circuit in question 10.

### **Systems and Control**

Each year there seem to be a number of centres whose candidates use non-PBASIC commands, or combinations of commands that are unacceptable in PBASIC. For example 'if...then goto...' appeared fairly frequently, and odd output instructions appeared: 'let pin5 = high' and '5 high' do not work. Centres should check carefully that the instructions they are using are acceptable in PBASIC.

### **Structures and Materials**

The application of Principle of Moments continues to pose major problems. Many candidates omit distances in moments equations, use non-perpendicular distances, or incorrectly use sin and cos for components of forces.

Nodal Analysis was again found to be difficult by most candidates. In many instances candidates did not isolate a single node for analysis, but included forces acting at nodes other than the one being analysed. Other candidates took a known force and simply took vertical, horizontal, or inclined components using trig ratios, without any form of nodal analysis being applied. As in the Systems & Control comment, these difficulties seemed to affect candidates by centre rather than entirely randomly.

## **Advanced Higher**

### **Applied Electronics**

Op-amp applications such as ADC and DAC caused difficulty for many candidates, who were unable to correctly analyse a given specification and produce a valid solution.

### **Structures and Materials**

Shear-force and bending-moment diagrams still provide major challenges. Method of Sections is still not well understood. Most centres need to spend much more time in this area of the syllabus if candidate-performance is to be significantly improved.

### **Feedback from Senior Moderator's Report (Technological Studies)**

All centres must apply the modifications specified in the NQ Review memo on assessment reduction and seek clarification on any points of doubt *prior* to setting any assessment tasks.

Particular attention should be paid to the specific evidence required for Practical Activities, setting tasks suitable for final *assessment* of the Unit (dependent on the level) not the simpler coursework assignments used for teaching purposes. Emphasis should be placed on documenting the practical work done, many successful centres doing this using simple pro forma or worksheets with headings identifying the stages in the design/problem solving process, prompting a full response from the candidate.

## Graphic Communication

### Guidance to Assessment Documents

Please ensure that you are using the current versions of these documents. The covering letter which went out with these documents was misleading in terms of how marks have been allocated in the Higher Thematic Presentation. The letter should have read:

#### ‘Higher — Thematic Presentation

*In response to feedback from the field, we have made some changes to the Thematic Presentation:*

- ◆ *the marks available for Manual Graphics-Rendered Illustrations have been dropped from 6 to 4*
- ◆ *the marks available for Desktop Planning-Annotated Sketches have been increased from 6 to 8 but sub-divided to give 4 marks for thumbnails and 4 marks for a visual.*
- ◆ *an additional 2 marks have been added to Computer-Aided Drawing for Annotation*
- ◆ *the marks available for Manual Computer-Aided Illustration and Presentation — Additional Promotional Graphics have been dropped from 6 to 4’*

Please read the relevant sections of the document for more details.

## Feedback from Principal Assessors’ Reports (Graphic Communication)

### Standard Grade

#### General feedback

There continues to be a large number of high quality candidates. The standard of draughtsmanship is dropping. A large proportion of candidates at all levels do not distinguish between construction lines and outlines.

As in previous sessions, centres are continuing to enter too many candidates for an inappropriate level resulting in too many Grade 7s being awarded. Some candidates could not even achieve 10% in either of their General or Credit papers.

#### Knowledge and Interpretation (KI)

KI is being done well at Credit and Foundation levels but not so at General level even though there was a slight improvement this year. Areas that are being poorly answered are:

- ◆ Knowledge of BS conventions. This is a problem at Standard Grade that continues into Higher. BS conventions and symbols always appear in the exam but as with draughtsmanship the candidate performance is getting

poorer. To gain the marks candidates should use the correct BS terms for symbols, line types etc.

- ◆ For a number of years a lack of knowledge of building-drawing terms has been highlighted, but there still appears to be no improvement.
- ◆ When asked to state a software type, the generic name should be given: CAD, DTP, Paint/Draw, 3D Modelling, Word-processing, etc, not commercial names such as AutoCAD, Microsoft publisher, Word etc.
- ◆ Where required Credit candidates should give a description and not single words as answers.

### **Drawing Abilities (DA)**

Pictorial views are being well taught as most candidates are doing very well in them. One weakness is drawing curves/circles in oblique views.

After an improvement last year, cylinders and assemblies were poorly done again. This year had a greater amount of geometric construction that proved to be difficult for candidates, even though it has always been part of the Course. The basic skill of projection/transfer of widths from plans to end elevations is very poorly done. All three developments caused problems at every level. This was also one of the poorest years for candidate responses to sectional views.

### **Intermediate 2**

The overall results indicate that a fair number of candidates presented for the Intermediate 2 Course are not fully prepared for the exam.

- ◆ Pupils are not being fully trained in how to interpret and answer the knowledge and understanding type questions.
- ◆ There is a general lack of knowledge concerning the use of CAD and CAD terms.
- ◆ Some pupils lack the basics in constructing geometric shapes. e.g. Octagons
- ◆ Candidates are continually under performing when attempting sectional views and assemblies.

It should be noted that the intermediate 2 Course provides progression from Standard Grade, but it has been found to be too demanding for Foundation level candidates. Until such a time that Intermediate 1 Graphic Communication becomes available, centres should consider whether to put forward these candidates at this level.

### **Higher**

#### **General**

Candidates are being well prepared for the majority of exam topics. There is though a significant drop in performance in the more traditional topics: BS conventions, engineering drawing and geometric construction. Each centre should now have a list of BS conventions that will be examined, which hopefully will help to raise performance.

Again there are still too many inappropriate candidates being presented for the Higher. These candidates should be being presented for Intermediate 2.

## **Section A**

It appears that centres are now addressing the previous poor performance in DTP questions.

The remaining weak area in this section is BS conventions. The lack of knowledge of this topic is causing candidates to drop too many marks in this section.

Candidates must give more than a one-word answer when the question asks for a description, comparison or explanation.

## **Section B**

Pictorial drawings are being taught well in particular measured perspective. There was a significant improvement in the quality of the auxiliary plan. Hopefully this is a sign that it is now being taught better.

As commented last year, candidates need to take enough points to accurately draw a circle in isometric or to transfer a curve between views in orthographic projection. A minimum of 12 points for a complete circle (the quadrant points plus intermediate points).

Developments have been poorly done for two consecutive years. The overall quality of draughtsmanship is dropping. In many cases it is difficult to tell the difference between construction and completed outlines. This makes it difficult to mark and candidates are losing out. Candidates must draw in outline to be awarded the marks. In addition the quality of hidden and centre lines is poor.

## **Advanced Higher**

There still appears to be a need for more direct teaching of the Design Principles and Design Elements in relation to Desk Top Publishing. It is important that candidates are exposed to a variety of Desk Top Published Graphic publications before they start their Graphic Presentation. Candidates need to be able to apply techniques and knowledge gained at the early stage to exam questions.

Candidates should have coloured pencils available to them in the examination in order to produce good quality visuals/thumbnails.

Centres should ensure that they have the most recent support materials to ensure their candidates are not disadvantaged, eg Computer Aided Graphic Presentation.

Teach the traditional drawing as formal lessons near the end of the session to ensure basic techniques such as cones, cylinders and developments of these geometric shapes are well established.

## **Feedback from Senior Moderators' Reports (Graphic Communication)**

### **Standard Grade**

The overall standard of work submitted for moderation was on par with that of last year. A handful of centres produced work of outstanding quality.

The area of computer graphics (CAD and CAG) is moving forward and there is more evidence of 3D Computer Modelling. DTP software is also widely used and is contributing to the quality of display and layout found throughout the sample. There is again strong evidence that centres encouraging originality and creativity in layout and display achieve better results in those topics.

A worrying trend is the large size of a typical folio. Most centres follow the recommendations found in the arrangements document and produce two graphs and three manually rendered items etc. Some centres produce separate items for each topic and can produce a folio of 12 items or more. This is counter productive. It limits the time that can be spent on the other two elements (DA & KI) and limits the time that is spent on each individual item. Centres should consider reducing the number of items and use the time saved to improve quality across the folio.

There is also evidence that candidates in some centres are penalised if they do not complete the recommended number of items for any given topic. Centres are reminded that the grade awarded in any topic is the best grade achieved by the candidate within that topic. Therefore, if a candidate produces only one graph and this graph is assessed at say, grade 2, it is this grade 2 that should be recorded for assessment. Some centres have been awarding a lower grade because the candidate has fallen short of the recommended number of items.

### **Intermediate 2, Higher and Advanced Higher**

Centres should be aware that the 'Guidance on Assessment' documents are fine-tuned each year and therefore may contain changes from the previous year. It is therefore extremely important that the teachers are familiar with the new document when it arrives in school in the autumn.

Even though the general quality this year had a similar range as last year, it was positive to have less non-accepted centres.

Important points to be aware of are:

- ◆ Draughtsmanship and correct application of BS conventions needs to be improved in CAD work across all three levels.
- ◆ Candidates must take more care over the completion of the flyleaf at each level. Even though there are no marks awarded for this it gives the candidate the opportunity to clarify how parts of a drawing/document were produced. This aids the moderation process and helps to ensure that the candidate receives maximum credit for their work.

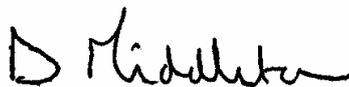
- ◆ At Higher it needs to be reinforced that instruments, straight edges, tracing or other drawing aids cannot be used to assist in the manual freehand sketching. It is disappointing that these practices still continue.
- ◆ Manual sketching and DTP planning at Higher and Planning and Development at Advanced Higher must not be done retrospectively.

Centres should make use of the exemplar material on SQA's website.

It is also important that centres should send in any suggestions that they may have to improve the internal folios across each level.

I hope you have found the information in this letter helpful. If you require clarification please do not hesitate to contact me.

Yours sincerely

A handwritten signature in black ink, appearing to read 'D Middleton', written in a cursive style.

Derek Middleton  
Qualifications Manager  
Computing and Technical education

## **Appendix 1**

### **ARRANGEMENTS AND SPECIMEN PAPERS**

Intermediate 2 Arrangements — April 2004  
Intermediate 2 Course Assessment Pack

Higher Arrangements — April 2004  
Higher Course Assessment Pack

### **DA AND ECS GUIDANCE DOCUMENTS + EXEMPLAR TASKS**

Design Assignment Guidance — Intermediate 2  
Design Assignment Exemplar Task — Intermediate 2

Design Assignment Guidance — Higher  
Design Assignment Exemplar Task — Higher

Advanced Higher Extended Case Study Guidance

### **DESIGN ASSIGNMENT EXEMPLARS**

Intermediate 2 — Design Assignment Exemplar 1  
Intermediate 2 — Design Assignment Exemplar 2  
Intermediate 2 — Design Assignment Exemplar 3

Higher — Design Assignment Exemplar 1 (with Marking Commentary)  
Higher — Design Assignment Exemplar 2 (with Marking Commentary)

### **UNIT EXEMPLARS**

#### **Unit 1 — Design Analysis**

Intermediate 2 Exemplar 1 (with Marking Commentary)

Higher Exemplar 1 (with Marking Commentary)  
Higher Exemplar 2

#### **Unit 2 — Developing Design Proposals**

Intermediate 2 Exemplar 1  
Intermediate 2 Exemplar 2 (with Marking Commentary)

Higher Exemplar 1 (with Marking Commentary)  
Higher Exemplar 2 (with Marking Commentary)  
Higher Exemplar 3 (with Marking Commentary)

#### **Unit 3 — Manufacturing Products NABs**

Intermediate 2 — NAB 001 — Aug 2004  
Intermediate 2 — NAB 002 — Oct 2004  
Intermediate 2 — NAB 003 — Nov 2004

Higher — NAB 001 — May 2004  
Higher — NAB 002 — Aug 2004  
Higher — NAB 003 — Aug 2004

## Appendix 2a

### PRACTICAL CRAFT SKILLS

### WOODWORKING SKILLS

### COURSE AND UNIT PROJECTS AT INTERMEDIATE 1 AND 2

#### Prior Moderation Checklist

It is proposed that centres should submit assessment materials for Course and Unit projects in the form in which they will be presented to candidates.

Projects submitted for prior moderation which do not meet the following criteria or are unacceptable in other ways will be returned to centres with a recommendation as to how they can be amended to meet the performance criteria.

All projects should be submitted to Jean Gibbons, SQA, Moderation Section, 24 Douglas Street, Glasgow, G2 7NQ. Please allow for a turnaround time of at least four weeks.

#### General

- ◆ Drawings for all Course and Unit projects at Intermediate 1 and 2 should be presented separately with clear details of the differentiation at each level.
- ◆ Drawings should consist of around four A4 sheets for each level. Each set should be self contained assignments with details of the skills covered.
- ◆ Sheets should be numbered at the bottom-right hand side.

#### Requirements

Please tick  as appropriate

##### 1. A single page Cover Sheet

This should contain generic project information for teacher use with details of:

- Centre and teacher information
- Course title and levels
- Course or Unit project
- Artefact title
- A small thumbnail photograph or a graphic of the project
- A general statement of what candidates are expected to produce as assessment evidence under the headings of: Flat Frame, Carcase Construction, Machining and Finishing, or Course Project
- A checklist of appropriate Outcomes to be assessed

- Cutting list for teacher/technician with statements clarifying:
  - ◆ allowances for waste and student squaring and shaping etc
  - ◆ hardwoods/softwoods — as appropriate
  - ◆ details of any ply or manufactured board etc
  - ◆ timber section sizes, where appropriate, to be, for example, 1mm above to allow candidates to finish to specified size

## 2. Student Sheets

All Student sheets should contain the following information as standard on each page:

- Headings
- Course title and level
- Course or Unit project
- Artefact title

### Student Sheet 1

Should contain:

- A pictorial (isometric) view of artefact, to a reasonable scale, with dimensions
- A clear indication of the task and the Outcomes to be assessed
- A description of the artefact and its parts, including assembly details
- A description of joints and skill processes such as any turnery, machining, tapering or chamfering etc
- Assembly details which are appropriate to the level
- Details of whether the item is scale or 'not to scale'
- All dimensions in mm

### Student Sheet 2

Should contain:

- Constructional details of artefact (to complement those on previous sheets)
- A list of stages of work appropriate to level
- A complete or incomplete standard cutting list as appropriate

### Student Sheet 3

Should contain:

- A fully dimensioned orthographic drawing of the artefact
- A clear indication of the position of the parts
- Indications of joint and shaping details
- Details of scale or 'not to scale'
- All dimensions in mm
- Details of templates shapes of parts on a separate sheet

### Student Sheet 4 (Optional)

Should contain:

- Enlarged details of any particular part/s or template/s with details of specific dimensions and any shaping.

Centre Name: \_\_\_\_\_

Centre Number: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Please tick  as appropriate

I agree that SQA may use the submitted material as a Unit/Course project and reproduce this, with changes where necessary, for any centre approved by SQA to offer this qualification.

I do not wish SQA to distribute the submitted material as a Unit/Course project to any other approved SQA centre.

Please note that no remuneration can be made where centres agree to the wider distribution of materials submitted for prior moderation.

## **Appendix 2b**

### **PRACTICAL CRAFT SKILLS**

### **ENGINEERING CRAFT SKILLS**

### **COURSE AND UNIT PROJECTS AT INTERMEDIATE 1 AND 2**

#### **Prior Moderation Checklist**

It is proposed that centres should submit assessment materials for Course and Unit projects in the form in which they will be presented to candidates.

Projects submitted for prior moderation which do not meet the following criteria or are unacceptable in other ways will be returned to centres with a recommendation as to how they can be amended to meet the performance criteria.

All projects should be submitted to Jean Gibbons, SQA, Moderation Section, 24 Douglas Street, Glasgow, G2 7NQ. Please allow for a turnaround time of at least four weeks.

#### **General**

- ◆ Drawings for all Course and Unit projects at Intermediate 1 and 2 should be presented separately with clear details of the differentiation at each level.
- ◆ Drawings should consist of around four A4 sheets for each level. Each set should be self contained assignments with details of the skills covered.
- ◆ Sheets should be numbered at the bottom right-hand side.

#### **Requirements**

Please tick  as appropriate

##### **1. A single page Cover Sheet**

This should contain generic project information for teacher use with details of:

- Centre and teacher information
- Course title and levels
- Course or Unit project
- Artefact title
- A small thumbnail photograph or a graphic of the project
- A general statement of what candidates are expected to produce as assessment evidence under the heading of Bench Skills, Machining Processes, Fabrication and Welding, Practical Electronics, or Course Project
- A checklist of appropriate Outcomes to be assessed

- Where appropriate, course project parts list for teacher/technician indicating:
  - ◆ Allowances for waste and student squaring and shaping etc;
  - ◆ Type of material and description;
  - ◆ Details of any threaded rod etc;
  - ◆ Material section sizes.

## **2. Student Sheets**

All Student sheets should contain the following information as standard on each page:

- Headings
- Course title and level
- Course or Unit project
- Artefact title

### **Student Sheet 1**

Should contain:

- A pictorial (isometric) view of artefact, to reasonable scale, with dimensions
- A clear indication of the task and the Outcomes to be assessed
- A description of the artefact and its parts including assembly details
- A description of skill processes such as forging, machining, welding etc.
- Assembly details appropriate to level
- Details of scale or 'not to scale'
- All dimensions in mm

### **Student Sheet 2**

Should contain:

- Constructional details of artefact (to complement those on previous sheets)
- A list of stages of work appropriate to level
- A complete or incomplete standard cutting list as appropriate

### **Student Sheet 3**

Should contain:

- A fully dimensioned and annotated orthographic drawing of the artefact
- A clear indication of the position of the parts

- Indications of jointing, threading, welding, and shaping details as appropriate
- Details of scale or 'not to scale'
- All dimensions in mm
- Details for templates, shapes of part or parts on a separate sheet
- Where appropriate, a clear drawing of electronic boards with appropriate components list as is required by the Practical Electronics unit.

#### **Student Sheet 4 (Optional)**

Should contain:

- Enlarged details of any particular part/s or template/s with details of specific dimensions and any shaping.

Centre Name: \_\_\_\_\_

Centre Number: \_\_\_\_\_

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Please tick  as appropriate

I agree that SQA may use the submitted material as a Unit/Course project and reproduce this, with changes where necessary, for any centre approved by SQA to offer this qualification.

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