



## Course Report 2017: Internally Assessed Course Component

Subject	Practical Metalworking
Level	National 5

The statistics used in this report have been compiled before the completion of any Post Results Services.

This report provides information on the performance of candidates which it is hoped will be useful to teachers, lecturers and assessors in their preparation of candidates for future assessment. It is intended to be constructive and informative and to promote better understanding. It would be helpful to read this report in conjunction with the published assessment documents and marking instructions.

# Section 1: Comments on the assessment

## Component 1: practical activity

The great majority of centres are to be praised for their diligence in taking on board the 2015–16 key messages and the information from the 2016 course report. There is absolute confidence that centres will again make sure they read and follow the advice given below, regarding approaches to assessment when taking part in assessment activities for both the National 5 internally-assessed component of course assessment (IACCA), whilst also keeping up to date with any National Qualifications developments.

The National 5 course practical activity demonstrates that the course is more than simply the sum of its constituent units. At National 5, all approved centres must make use of the course assessments from the secure area of the SQA website.

The practical activity task was well received by candidates, and performed well as a final assessment. As a whole, candidates appear to have been well prepared for the practical activity. The performance by candidates demonstrated that centres were covering the majority of the topic areas sufficiently.

However, the lack of National 5 course knowledge and skills from some candidates suggested that they were presented at the wrong level.

The majority of centres are making fair and accurate assessment judgements within marking tolerances, but within that there are a high number of final marks that are towards the lenient extremity of the marking tolerance. Valid and reliable assessment judgements are absolutely essential to the credibility of the subject.

Marking for the 2016 National 5 Practical Metalworking practical activity has been divided into four sections:

- ◆ reading from working drawings: marking out, cutting and shaping components parts appropriately, using correct tools and equipment
- ◆ assembly
- ◆ quality of manufacturing
- ◆ surface finishing

Each section is worth 20 marks, making a total of 80 marks that can awarded for the practical activity. This has not changed since the inception of National 5 Practical Metalworking, but centres are advised to ensure they are fully aware of new documentation for Session 2017–18. From 2017–18, revised marking instructions will be used for the assessment of the National 5 practical activity. Full details of this are available on SQA's webpage for Practical Metalworking.

### Reading from working drawings, marking out, etc

Assessment for this heading focused on the individual components, with reference to individual tolerances. The quality of work and skills used in producing finished components should be taken into account.

## **Assembly**

Assessment should focus on tolerances for functional sizes of assembled parts as indicated on working drawing.

Joining tolerances will also have a major impact on the assessment under assembly — ie gaps where joining.

Level of completed assembly will have a bearing on assessment.

## **Quality of manufacture**

This area of assessment focused on:

- ◆ the squareness of assembled parts
- ◆ twisting
- ◆ fit
- ◆ quality of threads (external and internal) ie concentric, tight, etc
- ◆ folds in sheet metal work — ie smooth folding no lumps and bumps
- ◆ turning activities ie knurling, taper turning, parting
- ◆ quality of thermal joining
- ◆ additional skills
- ◆ the level of consistency of application where the same technique has been used on two or more occasions

## **Surface finishing**

The selected finish should be appropriate. When assessing this, area consideration should be given to:

Preparation:

- ◆ no scribe marks
- ◆ no hammer marks
- ◆ no engineer's blue marks
- ◆ saw and machining marks removed
- ◆ no obvious blemishes or scratches — ie good attempt at using emery, wet and dry
- ◆ no welding spatter
- ◆ uneven finish — note: metal may rust over time, so assessor comments are important for this area in particular

With all practical activity assessments, the assessor may give candidates some feedback/ support and guidance to help them progress through each stage of the vanity mirror. Where support has been provided, this must be reflected in the marks awarded.

In the Practical Metalworking course, some centres had ensured that candidates had the opportunity to demonstrate practical creativity in the shaping of the handle for the garden lantern or the shaping of the pendulum in the metal clock (for example). The majority of centres had retained templates and/or working drawings in this case — retention of templates and/or working drawings is essential to applying the marking instructions and to

verification procedures, as marks from section 1 'Reading from working drawings, marking out, cutting and shaping component parts appropriately using correct tools and equipment' cannot be applied in these areas without them; this would result in candidates losing marks in section 1.

The vast majority of centres have used a suitable finish for the candidates' completed products such as clear lacquer, or oil-blue. This is to be praised as it enabled valid and reliable assessment and verification decisions to be made throughout the assessment of the candidates' work.

## **Section 2: Comments on candidate performance**

### **Areas in which candidates performed well**

#### **Component 1: practical activity**

Again this session, the verification team reported that there were some excellent examples of practical work being carried out in centres. Centres have developed a sound grasp of the standard required for the unit work, which then provides the candidates with the required skills for the course assessment.

Candidates showed developed skills in marking out and tool work. This was reflected in the course assessment, where there was a high standard of work. It was evident that candidates did not need a lot of assistance in reading working drawings as the majority of artefacts produced were of the prescribed materials, and correct joints and positioning of joints, and individual components, were mostly manufactured within tolerance. The majority of candidates approached and tackled this area very well and were marked appropriately.

Assembly of the artefacts was excellent. Candidates demonstrated their ability to manufacture individual components to a high standard. Components were well within tolerance, contributing to the high majority of functional sizes also being well within tolerance.

Where templates had been used, the standard of turned components was generally very good in terms of working to correct sizes. In some cases, centres had sufficient time to allow candidates to create their own unique templates, adding value to the overall technological aspects of the practical activity.

## **Areas which candidates found demanding**

### **Component 1: practical activity**

Candidates found some areas more challenging than others, where there may not have been an opportunity to develop the skills required. Centres should ensure that candidates are well prepared before undertaking the course assessment.

### **Quality of manufacturing**

Marks awarded to candidates were mostly within tolerance, but almost all were towards the lenient extremity. This area of the marking instructions allows centres to differentiate between stronger and weaker candidates, and should be used as such when applying the marking instructions.

Candidates did find it more challenging to replicate work on two or more occasions, ie turning the tapers on the garden lantern handle, or joining the handle supports to the lid. The marks awarded to the candidate in instances such as this should reflect the marking instructions.

### **Surface finishing**

Marks awarded to candidates were mostly within tolerance, but almost all were towards the lenient extremity. Most centres used either lacquer or 'blued' the artefacts, and this was applied well.

The preparation aspect of the work is a key area to achieving a higher grade, and this was not completed as successfully by candidates. Candidates should be advised to take the greatest care with their components at all times and ensure that tools are set correctly, have no defects, and are of the correct quality to complete the task. It was clear that the majority of unnecessary blemishes or scratches on components were either due to tooling issues, care of components, or lack of time spent finishing the components to an appropriate level.

## **Section 3: Advice for the preparation of future candidates**

### **Component 1: practical activity**

The course aims, rationale and content remains the same, but centres should familiarise themselves with the new documentation available on the SQA website. In particular, the Course Specification document adds clarity, and specimen question papers are available to assist with this revised area of the assessment.

Transitional arrangements for session 2017–18 will mean that centres will continue to use the current practical activity tasks that are available through the SQA secure website, but should familiarise themselves with the updated marking instructions and conditions of

assessment for the practical activity. This includes a mandatory log book, which is assessable and attracts marks.

The practical activity is an end-of-course assessment that must be attempted in its entirety as a single assessment event, and cannot be interrupted by periods of learning and teaching. There will, however, be instances where candidates are unable to complete their work (eg serious illness) with the rest of their class group and will not be assessed on time. In these situations, centres must contact SQA's Assessment Arrangements Team to determine whether an extension of time is permitted to allow for the work to be completed and assessed.

Whilst the assessor may give candidates support and guidance, where any significant amount of support is provided, this should be reflected in the marks awarded. The candidate may be provided with feedback to help them progress to the next stage of the practical activity.

The practical activity is designed to discriminate between candidates, and therefore would be expected to provide a wide range of marks across a class group. Stronger candidates should be able to complete the assignment successfully with minimal support and guidance. Weaker candidates may not be able to complete all aspects of the assignment within a reasonable time, or may require significant assistance, and so would achieve a lower mark. Once the assignment has been completed and assessed, it cannot be returned to the candidate for further work to improve their mark.

Centres should be aware that a finish that obscures the object, whether it be internal or external, could lead to a Not Accepted decision being made at verification.

Whilst it was pleasing to see that the conditions of assessment for coursework were adhered to in the majority of centres, there were a small number of examples where this may not have been the case. Following feedback from teachers, we have strengthened the conditions of assessment criteria for National 5 subjects and will do so for Higher and Advanced Higher. The criteria are published clearly on our website and in course materials and must be adhered to. SQA takes very seriously its obligation to ensure fairness and equity for all candidates in all qualifications through consistent application of assessment conditions and investigates all cases alerted to us where conditions may not have been met.

## Grade Boundary and Statistical information

### Statistical information: update on courses

Number of resulted entries in 2016	1149
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Number of resulted entries in 2017	1243
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### Statistical information: Performance of candidates

#### Distribution of course awards including grade boundaries

Distribution of course awards	%	Cum. %	Number of candidates	Lowest mark
Maximum Mark -				
A	46.4%	46.4%	577	58
B	25.1%	71.5%	312	49
C	20.5%	92.0%	255	40
D	2.9%	94.9%	36	35
No award	5.1%	-	63	-

## General commentary on grade boundaries

- ◆ While SQA aims to set examinations and create marking instructions which will allow a competent candidate to score a minimum of 50% of the available marks (the notional C boundary) and a well prepared, very competent candidate to score at least 70% of the available marks (the notional A boundary), it is very challenging to get the standard on target every year, in every subject at every level.
- ◆ Each year, SQA therefore holds a grade boundary meeting for each subject at each level where it brings together all the information available (statistical and judgemental). The Principal Assessor and SQA Qualifications Manager meet with the relevant SQA Business Manager and Statistician to discuss the evidence and make decisions. The meetings are chaired by members of the management team at SQA.
- ◆ The grade boundaries can be adjusted downwards if there is evidence that the exam is more challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ The grade boundaries can be adjusted upwards if there is evidence that the exam is less challenging than usual, allowing the pass rate to be unaffected by this circumstance.
- ◆ Where standards are comparable to previous years, similar grade boundaries are maintained.
- ◆ An exam paper at a particular level in a subject in one year tends to have a marginally different set of grade boundaries from exam papers in that subject at that level in other years. This is because the particular questions, and the mix of questions, are different. This is also the case for exams set in centres. If SQA has already altered a boundary in a particular year in, say, Higher Chemistry, this does not mean that centres should necessarily alter boundaries in their prelim exam in Higher Chemistry. The two are not that closely related, as they do not contain identical questions.
- ◆ SQA's main aim is to be fair to candidates across all subjects and all levels and maintain comparable standards across the years, even as arrangements evolve and change.