

ASSESSMENT PLAN FOR: Organ Builder (Level 3)

1. Summary of Assessment

This document provides details of the End Point Assessment (EPA) for the Organ Builder Apprenticeship. It provides guidance for employers, apprentices, training providers and assessment organisations.

The EPA takes place when both the employer and the training provider are satisfied that the apprentice is consistently working at or above the level described in the Organ Builder Apprenticeship Standard.

The EPA is carried out over four consecutive days by an independent assessment organisation and requires the apprentice to:

- construct, voice and tune a working portative organ;
- undergo a series of four supervised skills tests in specific disciplines (laying tuning bearings, operating wood-working machinery, working with low-voltage transmission circuits, reed voicing);
- participate in a professional discussion (which will include a review of the apprentice's Portfolio).

2. Assessment Overview

Assessment Method	Duration	Area Assessed	Assessed by
Final Project (portative organ)	4 days (30 working hours)	Required Knowledge, Skills and Behaviours for the manufacture and tuning of pipe organs as detailed in the Organ Builder Apprenticeship Standard	Independent Assessment Organisation
Skills Tests	4 x 15 minutes	Required Skills for the manufacture and tuning of pipe organs as detailed in the Organ Builder Apprenticeship Standard	Independent Assessment Organisation
Professional Discussion	1 hour	Required Knowledge, Skills and Behaviours for the manufacture, tuning and maintenance of pipe organs as detailed in the Organ Builder Apprenticeship Standard	Independent Assessment Organisation

3. Assessment Gateway

Each year's qualifying cohort of apprentices will be assessed together at a pre-arranged time and place, typically at the end of the academic year, in a readily accessible workshop or training venue. (Another opportunity will be offered roughly halfway through the academic year for candidates who are progressing at a different rate from the majority of their peers, and for candidates re-taking the EPA.)

Candidates will only be presented for assessment if the employer and training provider are both in agreement that they are working at the required standard. If either or both parties do not believe that the candidate is ready, his/her participation will be deferred until the next scheduled opportunity (providing that the required standards have been met in the intervening time).

Candidates must also have completed their Portfolio, and achieved Level 2 qualifications in English and Mathematics, prior to participating in the EPA.

4. End Point Assessment

What?

Apprentices must demonstrate that they have acquired the knowledge, skills and behaviours detailed in the Organ Builder Apprenticeship Standard under the specific sub-headings of: Health & Safety and working environment; materials; tools; the design and history of the pipe organ; the manufacture, tuning and maintenance of pipe organs; technical interpretation and understanding; quality, professionalism, self-development and ethical awareness.

The table below summarises which methods are used in the EPA to assess specific areas of the Organ Builder Apprenticeship Standard:

KNOWLEDGE	Primarily assessed during
Health & Safety and working environment	Final Project and Skills Tests
Materials	Professional Discussion
Tools	Final Project
Quality	Final Project
Design and history of the pipe organ	Professional Discussion
The manufacture, tuning and maintenance of pipe organs	Final Project
SKILLS	Primarily assessed during
Health & Safety and working environment	Final Project and Skills Tests
Technical interpretation and understanding	Final Project
The manufacture of pipe organs	Final Project and Skills Tests
The tuning and maintenance of pipe organs	Skills Tests and Professional Discussion

BEHAVIOURS	Primarily assessed during
Quality focused	Final Project
Professionalism	Professional Discussion
Self-development	Professional Discussion
Ethical Awareness	Professional Discussion

How?

Final Project

Candidates must bring their own set of hand tools with them to the assessment venue, where they will be provided with the materials needed (including timber, leather and pipe metal) by the Assessment Organisation. Over the course of the four-day assessment (and within a maximum of thirty working hours), candidates must carry out a Final Project to assemble, voice and tune a portative organ in accordance with technical drawings and other instructions (which will be available throughout the assessment period, but not beforehand). The tasks involved will include (but not be limited to) constructing timber components, leathering a bellows, soldering together metal pipes, putting pipes on speech and tuning them. This project encapsulates the sub-disciplines which make up the profession of organ builder, and will therefore assess the knowledge, skills and behaviours defined above in a holistic way.

Skills Tests

During the first and second days of the EPA the candidates will be called individually to participate in four specific skills tests (supervised by an external assessor) lasting no more than fifteen minutes each. These are intended to demonstrate the following specific skills required by the Apprenticeship Standard that are not overtly represented in the final piece:

-laying tuning bearings (the candidate will be asked to lay an equally-tempered tuning scale from an octave of slide-tuned principal pipes without the assistance of a tuning meter);

-operating wood-working machinery (the candidate will be asked to set up a spindle moulder and cut a timber profile, following all the necessary safety precautions);

-working with low-voltage transmission circuits (the candidate will be asked to identify and rectify faults in a low-voltage transmission circuit);

-voicing of reed pipes (the candidate will be required to curve a reed tongue, assemble a reed pipe and match its tuning and regulation to a small group of similar pipes).

Professional Discussion & Portfolio Review

During the third and fourth days of the EPA the candidates will be called individually to participate in a Professional Discussion of one hour's duration. The questioning will be based partly on the content of the apprentice's Portfolio (see the next paragraph below), and partly on a template of questions developed (and annually reviewed) by the Assessment Organisation. This is an opportunity for assessors to investigate, and candidates to demonstrate, a broad range of acquired knowledge, skills and behaviours from the Organ Builder Apprenticeship Standard. The assessors are directed to focus in particular on elements from the Standard that are not overtly represented in the Final Project and Skills Tests, such as the design and history of the pipe organ, the maintenance of pipe organs, self-development and ethical awareness.

The Portfolio is a mandatory element of the apprentice's 'on programme assessment'. S/he will have created and maintained it during the course of their apprenticeship, and it will contain evidence of skills and experience gained in the form of written work, sketches, progress reports, photographs, videos and other resources. It will therefore constitute an important source of content and structure for the Professional Discussion, and should be made available to the assessors one month before the publicised date of the EPA (ideally in an electronic format for ease of submission).

Who?

The EPA will be conducted by an independent assessment organisation on the ESFA Register of Apprentice Assessment Organisations (RoAAO). Individual assessors chosen to conduct EPAs must be:

- independent of the apprentice, employer or training provider;
- appointed by the assessment organisation with a minimum requirement of five years' experience (within the preceding decade) as professional organ builders;
- trained to conduct the EPA detailed in this plan.

The assessment organisation will operate an appeals procedure in the event of any dispute concerning the outcome of an EPA.

Final Judgement & Independence

The independent assessment organisation, as represented by its chosen organ builder assessors, will be solely responsible for the final decision about whether the apprentice has passed. The final competence and grading decisions will be taken by a suitably experienced independent assessor, who has not previously been involved in the 'on-programme' training or assessment of the apprentice, and with no interest in the outcome of the assessment. These arrangements will ensure a clear separation between the training of the apprentice and the final assessment.

5. Summary of roles and responsibilities

Employer	Decides (jointly with the training provider) whether apprentice is ready for the EPA at the end of the formal training period; Ensures that the apprentice attends the EPA at the publicised time and venue, and takes with them a set of hand tools.
Training Provider	Decides (jointly with the employer) whether apprentice is ready for the EPA at the end of the formal training period.
Assessment Organisation	Appoints and trains suitably experienced independent assessors; Arranges and conducts regular EPAs at an accessible workshop or training venue; Provides all necessary materials for the Final Project and Skills Tests; Makes final decision on competence and grading for each apprentice; Operates an appeals procedure in the event of any dispute concerning the outcome of an EPA.

6. Quality Assurance – Internal

The assessment organisation:

- Appoints and trains independent assessors who have a minimum of five years' experience (within the preceding decade) as professional organ builders;
- Develops structured procedures and marking schemes for the different assessment methods required in the EPA;
- Holds standardisation meetings with the independent assessors twice a year;
- Samples 50% of outcomes of the cohort to confirm that they are valid, reliable and consistent over time.

7. Quality Assurance – External

The Institute for Apprenticeships will be responsible for External Quality Assurance.

8. Grading

At the conclusion of the EPA, the independent assessors must decide whether or not each of the candidates has demonstrated the requisite level of knowledge, skills and behaviours, according to the following scheme:

Skills Tests

The candidates' performance in each of the four tests will be given a mark from 1 to 5. Candidates who achieve fewer than 3 marks for any one test will be deemed to have failed that test and therefore to have failed the EPA as a whole. In borderline cases, and at the discretion of the assessor(s), one test only may be retaken for which an additional fifteen minutes will be allowed during the third or fourth day of the EPA. Successful candidates' marks will be combined to give a total out of 20, which will in turn be carried forward to the final grading process.

Professional Discussion

At the conclusion of the Professional Discussion, the assessor(s) will award each candidate a mark out of 20. Candidates scoring fewer than 12 marks will be deemed to have failed the Professional Discussion and therefore to have failed the EPA as a whole. Candidates scoring 12 marks or more will be deemed to have passed the Professional Discussion, and their marks will be carried forward to the final grading process.

Final Project

At the expiry of the maximum allotted time of thirty working hours, candidates must cease work on their Final Project, and the assessor(s) will award it a mark out of 60. Candidates scoring fewer than 36 marks will be deemed to have failed the Final Project and therefore to have failed the EPA as a whole. Candidates scoring 36 marks or more will be deemed to have passed the Final Project, and their marks will be carried forward to the final grading process.

Final Grading

The marks from the Skills Tests, Professional Discussion and Final Project will be combined to give a grand total out of 100. Candidates scoring 59 marks or fewer will be deemed to have failed the EPA. Candidates scoring between 60 and 79 marks will be awarded a final grade of 'pass', indicating that they are working at the standard required of a professional organ builder. Candidates scoring 80 marks and above will be awarded a final grade of 'pass with distinction', indicating that they are working at the standard achieved by an experienced professional organ builder.

Re-taking the End Point Assessment

Candidates cannot pass the EPA without passing all three assessment methods (including all four of the individual Skills Tests). However no marks and/or results from any single Test, Discussion or Project will be disclosed to the candidates until the conclusion of the EPA as a whole (except for those instances where the assessors request that a specific Skills Test be re-taken) so that candidates are incentivised to give their best possible performance throughout. Candidates who fail in only one of the three assessment methods may carry forward their two pass marks to the next available EPA and need only re-take the method in which they failed the first time. Candidates who fail in two or three methods must re-take the entire EPA. In cases where candidates are re-taking the Professional Discussion only (and therefore do not require workshop facilities) consideration will be given to the possibility of conducting it by video link or similar remote method. Excluding exceptional cases (such as a

candidate being taken ill part way through the EPA), it will not normally be possible for candidates to take the EPA on more than two separate occasions.

Overview of Grading Descriptors

Assessment Method	Marks Attained	Grade Awarded
Final Project (portative organ)	0-35	Fail
	36-47	Pass
	48-60	Pass with Distinction
Skills Test (each of four)	0-2	Fail
	3	Pass
	4-5	Pass with Distinction
Professional Discussion	0-11	Fail
	12-15	Pass
	16-20	Pass with Distinction

9. Implementation

Affordability

The EPA should not constitute more than 15% of the total cost of the apprenticeship.

Professional Body Recognition

Successful candidates will be recognised by the Institute of British Organ Building (I.B.O.) as qualified organ builders, eligible for employment by any of its accredited business members. They would also be eligible themselves for Individual or Associate Membership of the I.B.O.

Consistent

By conducting the EPA at a pre-arranged time and venue, and on a regular annual cycle, it is possible to ensure that:

- assessment is consistent across the full range of organ building enterprises;
- assessment costs are kept to a minimum; and,
- employers are able to plan for the temporary absence of their apprentices.

Volumes

It is estimated that there would be between 5 and 10 apprenticeship starts each year.

Appendix - Detailed Content for Core Skills, Knowledge and Behaviours

Knowledge	Primarily Assessed During	What is required – understanding of	To Fail - the candidate	To Pass (i.e. to achieve the standard expected of a professional organ builder) - the candidate	To Pass with Distinction (i.e. to achieve the standard expected of an experienced organ builder) - the candidate additionally
Health & safety and working environment	Final Project & Skills Tests	how to comply with health & safety legislation and regulations in the work environment (in particular those relating to working at height, heavy lifting and noise abatement); the safe handling of materials and work processes that ensure the safety of self and others; the safe and sustainable disposal of waste materials.	does not comply with health & safety legislation and regulations in the work environment; does not handle materials and tools safely with regard to self and others; does not dispose of waste materials safely.	complies with health & safety legislation and regulations in the work environment; handles materials and tools safely with regard to self and others; disposes of waste materials safely.	drafts risk assessments for specific locations and scenarios; finds constructive uses for timber offcuts of different sizes.
Materials	Professional Discussion	the properties, uses and limitations of materials used in organ building (including the respective advantages and disadvantages of softwoods	cannot recognise the more commonly used wood species, types of leather and pipe metal alloys, or explain their uses in organ building;	recognises the more commonly used wood species, types of leather and pipe metal alloys, and explains some of their uses in organ building;	readily identifies a wide variety of hardwoods and softwoods; recognises less frequently used metals such as zinc and copper

		and hardwoods, the purposes of different grades of leather, and the tonal qualities of pipes made from different metal alloys); techniques for protecting, moving, handling and storing resources.	does not understand how to protect, move handle and store resources appropriately.	understands how to protect, move handle and store resources appropriately.	and explains their advantages and disadvantages as pipe materials.
Tools	Final Project	the key hand and machine tools and equipment used; the principles of how they work, are prepared, maintained and safely used (including how to sharpen chisels and hand planes; the different cutting actions of band-, cross-cut and rip-saws and how the material must be presented to them in each case; the importance of using the right combination of guards when creating mouldings using hand-held and fixed routers).	is not familiar with the key hand and machine tools used, the principles of how they work, are prepared and safely used.	is familiar with the key hand and machine tools used, the principles of how they work, are prepared and safely used.	shows awareness of tools and equipment used in more specialised areas such as CNC routers, metal planing machines and welding gear.

Quality	Final Project	the application and monitoring of the employer's quality standards including methods of recording work.	cannot explain how the employer's quality standards are applied and monitored, or how work is recorded.	explains how the employer's quality standards are applied and monitored, and how work is recorded.	makes proactive suggestions of ways to improve the application and monitoring of standards.
Design and history of the pipe organ	Professional Discussion	the elements and principles applicable to the design of pipe organs; the historical and contemporary context of organ building, including the development & application of different forms of action & mechanisms; the key differences between rebuilding, restoration, conservation and reconstruction (and their respective advantages and disadvantages).	does not understand the elements and principles applicable to the design of pipe organs or the historical and contemporary context of organ building; cannot explain the key differences between rebuilding, restoration, conservation and reconstruction.	understands the elements and principles applicable to the design of pipe organs and the historical and contemporary context of organ building; explains the key differences between rebuilding, restoration, conservation and reconstruction.	distinguishes between an irreplaceable historic soundboard which is part of a museum exhibit, a defective soundboard that can be reinstated as part of a working instrument, and a soundboard that has to be made wholly or partly as new using traditional materials and techniques.
The manufacture, tuning and maintenance of pipe organs	Final Project	how to diagnose, analyse and assess for manufacturing and maintenance options; relevant applied mathematics & science (for example metric & imperial	Does not diagnose, analyse or assess for manufacturing and maintenance options; does not show knowledge of relevant applied mathematics	diagnoses, analyses and assesses for manufacturing and maintenance options; shows knowledge of relevant applied mathematics and science; anticipates risks and	works easily in both metric and imperial systems (e.g. by surveying a historic component using imperial dimensions); understands why

		dimensions and measurements, geometry, lever law, musical theory, acoustics and electric circuitry); anticipation of risks and resolution of problems; when it is appropriate to seek advice from other craft specialists and experts.	and science; does not anticipate risks, resolve problems or seek advice from other craft specialists and experts when necessary.	resolves problems, seeking advice from other craft specialists and experts when necessary.	different tuning temperaments have evolved and which should be used for specific musical purposes.
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Skills	Primarily Assessed During	What is required – ability to	To Fail - the candidate	To Pass (i.e. to achieve the standard expected of a professional organ builder) - the candidate	To Pass with Distinction (i.e. to achieve the standard expected of an experienced organ builder) - the candidate additionally
Health & safety and working environment	Final Project & Skills Tests	maintain good standards of health and safety for self and for others, using safe working practices (e.g. when handling heavy components); prepare and maintain materials, tools and	does not maintain good standards of health and safety for self and others; does not prepare or maintain materials, tools and equipment	maintains good standards of health and safety for self and others; prepares and maintains materials, tools and equipment appropriately and safely; identifies and	drafts risk assessments for specific locations and scenarios

		equipment appropriately and safely, always fitting guards to machines as required; identify and minimise hazards and risks in the working environment, for instance when casting and soldering, or when treating timber with volatile compounds.	appropriately and safely; does not identify or minimise hazards and risks in the working environment.	minimises hazards and risks in the working environment.	
Technical interpretation and understanding	Final Project	create and interpret technical specifications, drawings, and other written and verbal instructions (such as cutting lists, rollerboard layouts and soundboard plantings); identify and respond to problems appropriately (including testing and adjustment); seek advice and guidance when appropriate.	cannot create or interpret technical specifications, drawings and other written and verbal instructions; does not identify or respond to problems, or seek advice and guidance when appropriate.	creates and interprets technical specifications, drawings and other written and verbal instructions; identifies and responds to problems, seeking advice and guidance when appropriate.	consistently and correctly follows written, verbal and visual instruction with a minimum of explanation.
The manufacture of pipe organs	Final Project and Skills Tests	select and use the appropriate processes, techniques, materials, tools and equipment to undertake organ building tasks from	does not select or use the appropriate processes, techniques, materials, tools and equipment	selects and uses the appropriate processes, techniques, materials, tools and equipment to undertake key organ	shows awareness of and aptitude for techniques and processes used by more specialist technicians, such as the

		inception to realisation; construct timber components such as soundboards and wind trunking; use leather to make hinges and gussets in bellows, and for pneumatic motors; connect and test low-voltage electrical equipment; make wooden and metal pipework; put pipes onto speech and tune them.	to undertake key organ building tasks from inception to realisation.	building tasks from inception to realisation.	embossing and gilding of front pipes, veneering of decorative timbers and tuning in less familiar historic temperaments.
The tuning and maintenance of pipe organs	Skills Tests and Professional Discussion	lay bearings for tuning; put individual pipes and complete ranks back into tune; identify and resolve action faults in existing instruments; remove and dismantle components safely and systematically; re-assemble and test that everything is working properly.	cannot lay bearings for tuning, or put individual pipes and complete ranks back into tune; cannot identify or resolve action faults in existing instruments; does not remove or dismantle components safely and systematically, or re-assemble and test that everything is working properly.	lays bearings for tuning; puts individual pipes and complete ranks back into tune; identifies and resolves action faults in existing instruments; removes and dismantles components safely and systematically; re-assembles and tests that everything is working properly.	uses playing techniques and stop combinations as might be selected at the console by an organist when testing.

Behaviours	Primarily Assessed During	What is required – you should	To Fail - the candidate	To Pass (i.e. to achieve the standard expected of a professional organ builder) - the candidate	To Pass with Distinction (i.e. to achieve the standard expected of an experienced organ builder) - the candidate additionally
Quality focused	Final Project	follow policies and procedures; have a consistent attention to detail; apply quality assurance checks throughout the organ building process.	does not follow policies and procedures, or have a consistent attention to detail; does not apply quality assurance checks throughout the organ building process.	follows policies and procedures; has a consistent attention to detail; applies quality assurance checks throughout the organ building process.	makes proactive suggestions of ways to improve the application and monitoring of quality standards.
Professionalism	Professional Discussion	have a strong professional work ethic and pride in work; plan and manage time efficiently; communicate and work effectively with others; promote and represent organ building.	does not have a strong professional work ethic or pride in work; cannot plan or manage time efficiently; does not communicate or work effectively with others; does not promote or represent organ building.	has a strong professional work ethic and pride in work; plans and manages time efficiently; communicates and works effectively with others; promotes and represents organ building.	identifies and prioritises tasks with built-in 'dead time', e.g. glueing, polishing; understands the principal arguments on both sides of the debate concerning pipe organs vis-à-vis electronic/digital instruments.

Self-development	Professional Discussion	keep up to date with best practice and emerging technologies within the organ building sector; respond positively to instruction and constructive criticism; offer constructive feedback to others; develop and maintain professional relationships.	does not keep up to date with best practice and emerging technologies within the organ building sector; responds negatively to instruction and constructive criticism; does not offer constructive feedback to others; does not develop or maintain professional relationships.	keeps up to date with best practice and emerging technologies within the organ building sector; responds positively to instruction and constructive criticism; offers constructive feedback to others; develops and maintains professional relationships.	shows awareness of & interest in opportunities for further training in specific fields.
Ethical awareness	Professional Discussion	apply an understanding of relevant sustainability and ethical issues to work; respect specific requirements and the cultural and ethical norms of different working environments.	does not show an understanding of relevant sustainability or ethical issues to work; does not respect specific requirements and the cultural and ethical norms of different working environments.	applies an understanding of relevant sustainability and ethical issues to work; respects specific requirements and the cultural and ethical norms of different working environments.	proactively advocates the adoption of commercially viable alternatives to ivory and endangered tropical timbers where traditionally used in organ building.

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