



British Horological Institute

Examination Handbook for the Distance Learning Course

Preliminary Grade Course:-

Certificate in Clock and Watch Servicing

Intermediate / Final Grade Course:-

Certificate in the Repair, Restoration and Conservation of Clocks / Watches

Certificate in the Repair of Clocks

Certificate in the Repair of Watches

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Introduction:-

Many students following the British Horological Institute Distance Learning Course decide to enter the Institute's examinations. The purpose of this booklet is to provide information about the examinations to help you choose which examinations to enter. There are details to explain what you will have to do for each of the various units, how and when to apply, where to find more information about the syllabus, what to do if you have Special Assessment Needs, etc.

The Institute has for many years successfully catered for students through the Distance Learning Course and also the various colleges offering courses in horology. We are fully committed to the continuation of training in horology. Many students are unable to attend courses at the various Examination Centres but with support from the Distance Learning Course have achieved a high level in the various grades. The Institute arranges numerous short courses covering a wide range of topics at Upton Hall. These short courses are an invaluable addition to the Distance Learning Course by providing expert tuition on various practical aspects of horology. The information in this booklet is intended to provide answers to many of the questions raised by students. Should you require further information please contact the Examinations Secretary.

The Distance Learning Course is presented in three grades – Preliminary, Intermediate and Final. These courses have for many years prepared students for examinations. The Institute has worked closely with EAL (the Awarding Body - EMTA Awards Ltd.) to introduce new examinations to replace the awards for which the course was originally devised. The new examinations are explained in this handbook. There have, as a result, been changes in both syllabus and structure. Three additional lessons, Lessons 13, 14 and 15, have been added to the Preliminary Grade Course and one lesson, Lesson 13, added to the Intermediate Grade. These extra lessons ensure that the knowledge the student requires for the new syllabus is now contained within the course. The "Contents" at the start of the course provides tabulated references linking every section in the course with the syllabus for each theory unit of the examinations. The student can thus easily pinpoint the sections in the course which are relevant to any particular examination. The process of re-writing the Distance Learning Course has commenced so that, in time, the course will align with the examination syllabus.

The rationale for the examinations:-

- To provide nationally accredited awards to prepare for employment and for enthusiasts who wish to follow a structured course in clock and / or watchmaking
- To cater for candidates who wish to achieve the ability to service basic clocks and /or watches
- To extend a broad basic knowledge and skills to an advanced level specialising in the repair, restoration and conservation of either clocks or watches

A summary of the Examinations:-

- 1. Certificate in Clock and Watch Servicing (Technician Grade Units):-** candidates are required to learn about servicing basic clocks / watches. A pass in three units is required with candidates taking both of the two mandatory units and choosing one from two optional units. It is envisaged that one year is required to complete the course ready for the examination. (Further information beginning on page 3)
- 2. Certificate in the Repair, Restoration and Conservation of Clocks / Watches (Final Grade Part I Units and Final Grade Part II Units):-** It is generally expected that candidates will have completed the Technician Grade prior to commencing this award. Candidates select to learn about the repair, restoration and conservation of either clocks or watches and master the skills required to make and modify components for clocks / watches. A pass in eight units is required:- candidates will normally enter the three Final Grade Part I units at the end of the first year of study and the five Final Grade Part II units at the conclusion of a second year. (Further information beginning on page 6).

The student gaining the Certificate in the Repair, Restoration and Conservation of Clocks / Watches can apply to become a Member of the British Horological Institute (MBHI). Further details can be obtained from Upton Hall.

Certificates are presented for each qualification showing the unit/s awarded :-

The Certificate in Clock and Watch Servicing

The Certificate in the Repair, Restoration and Conservation of Clocks / Watches

A student can therefore choose to initially enter just one or two units and, by continuing with further units, undertake the whole award over a period of time.

This handbook (Examination Handbook for the Distance Learning Course) gives details of the examination arrangements with an overview of the structure and units for each award. Further handbooks provide the detailed syllabus for each award, unit by unit, together with the assessment procedures:-

Syllabus and Specimen Papers : Certificate in Clock and Watch Servicing.

Syllabus Information : Certificate in the Repair, Restoration and Conservation of Clocks / Watches.

Specimen Papers : Certificate in the Repair, Restoration and Conservation of Clocks / Watches.

The appropriate handbooks for each grade of the course have been included with each Distance Learning Course:-

- 1. The Preliminary Grade Distance Learning Course prepares students for the Certificate in Clock and Watch Servicing.**
- 2. The Intermediate Grade Distance Learning Course prepares students for the Certificate in the Repair, Restoration and Conservation of Clocks / Watches – Final Grade Part I Units.**
- 3. The Final Grade Distance Learning Course prepares students for the Certificate in the Repair, Restoration and Conservation of Clocks / Watches – Final Grade Part II Units**

The Examinations:-

Certificate in Clock and Watch Servicing (“Technician Grade”)

The award comprises four units, two mandatory units and two optional units. Candidates are required to pass the two mandatory units and one optional unit to gain the award – The Certificate in Clock and Watch Servicing.

The Mandatory Units:-

- Unit 1 : Technician Grade : Theory of Clock and Watch Servicing
(basic theory about clocks and watches and the servicing of clocks and watches)
- Unit 2 : Technician Grade : Basic Practical Workshop Processes
(hand and machine techniques for making and modifying basic clock parts)

The Optional Units:-

- Unit 3 : Technician Grade : Technical Drawing
(the use of conventions, orthographic, isometric and oblique projection to represent assemblies of horological components)
- Unit 4 : Technician Grade : Practical Clock / Watch Servicing
(the practical repair of basic clocks **or** watches **or** clocks and watches)

The student who wishes to study just one or more units receives a certificate showing each unit successfully completed. There are two levels of pass for each unit. (‘Pass with Merit’ (66%) and ‘Pass’ (40%))

To gain the award a candidate will require:-

Pass:- A ‘Pass’ in the two mandatory units together with a ‘Pass’ in one optional unit.

Pass with Merit:- A ‘Pass with Merit’ in both of the two mandatory units together with a ‘Pass’ in one optional unit

General Information about the “Technician Grade” examination:-

Full details of the syllabus and the assessment procedure are provided in the following handbooks:-

- a. “Syllabus - Certificate in Clock and Watch Servicing”**
- b. “Specimen Papers – Certificate in Clock and Watch Servicing”**

These handbooks are provided with the Preliminary Grade Distance Learning Course. Some important general information is included on the following pages to provide guidance for the candidate.

The Examinations, General Information about the Technician Grade Examination, continued:-

Unit 1 : Technician Grade : Theory of Clock and Watch Servicing (Mandatory Unit):-

The syllabus for Technician Grade Unit 1, “Theory of Clock and Watch Servicing”, has been prepared to offer flexibility. The emphasis for the candidate may vary between clocks and watches. The examination paper contains five sections: Clock Servicing (Section A), Watch Servicing (Section B), Escapements (Section C), Workshop Processes (Section D) and twenty short questions (Section E). Candidates are required to answer one question from each of the Sections A, B, C and D together with the twenty short questions in Section E.

There are some theory topics in the syllabus for this unit which were not originally contained in the Preliminary Grade Distance Learning Course. Extra lessons, Lessons 13, 14 and 15, have therefore been included to provide this material. The content of these lessons has been drawn from both the Intermediate Grade and the Final Grade courses. There are also some topics present in the Preliminary Grade Course which are no longer in the examination syllabus at this level. We have provided tabulated references in the “Contents” pages alongside each item to indicate the topics in Lessons 1 – 12 that are contained in the Technician Grade syllabus. In some instances the inclusion of a particular topic is shown underlined to indicate that the Examiner will only expect a working knowledge of the content and its application instead of requiring familiarity with every detail.

Students currently purchasing the Distance Learning Course will receive Lessons 13, 14 and 15 and the appropriate handbooks as part of their course. **If you are using an edition which was bought prior to the addition of these lessons please contact the Examinations Officer to ensure that the new material is provided.**

Unit 2 : Technician Grade, Basic Practical Workshop Processes (Mandatory Unit):-

The various exercises present in the Preliminary Grade Course will prepare the candidate for the making of a “Practical Test Piece”.

Unit 3 : Technician Grade, Technical Drawing (Optional Unit):-

The student who is familiar with the drawing conventions in “Engineering Drawing Practice for Schools and Colleges” (PP7308) and has completed the drawing exercises in the Preliminary Grade Course will be familiar with the requirements for the examination. Candidates may choose to produce the drawing for the examination either manually, using a drawing board and T-square, or using CAD.

Unit 4 : Technician Grade, Practical Clock / Watch Servicing (Optional Unit):-

Brief details are presented in this section but candidates considering entering this unit should also refer to pages 9 – 14 where general information relating to the “Record of Repairs” is provided.

The Technician Grade, Unit 4, requires the candidate to produce a “Record of Repairs” by providing, for the Examiner, basic information about a number of their clock and / or watch repairs:-

- 1. The Institute provides a form, the “List of Contents” to guide the candidate – this shows the number of repairs which are required and also lists a number of “Repair Processes” such as fitting a variety of bushes, dismantling, cleaning, re-assembling oiling and adjusting a platform escapement.**
- 2. Separate forms, “Clock Form”, “Quartz Watch Form” and “Mechanical Watch Form” enable the candidate to record details about each item and the nature of the work required.**
- 3. Each repair has to be checked by a professional member of the Institute (MBHI / FBHI) to ensure that the work has been completed to a good standard.**

There is the opportunity in the Technician Grade to select from the following Record of Repairs:-

1. Clocks - The candidate has to complete six clock repairs together with a number of basic clock repair processes.
2. Watches - The candidate has to complete ten watch repairs together with a number of basic watch repair processes.
3. Clocks and Watches – The candidate has to complete four clock repairs and five quartz watch repairs together with a number of basic clock and quartz watch repair processes.

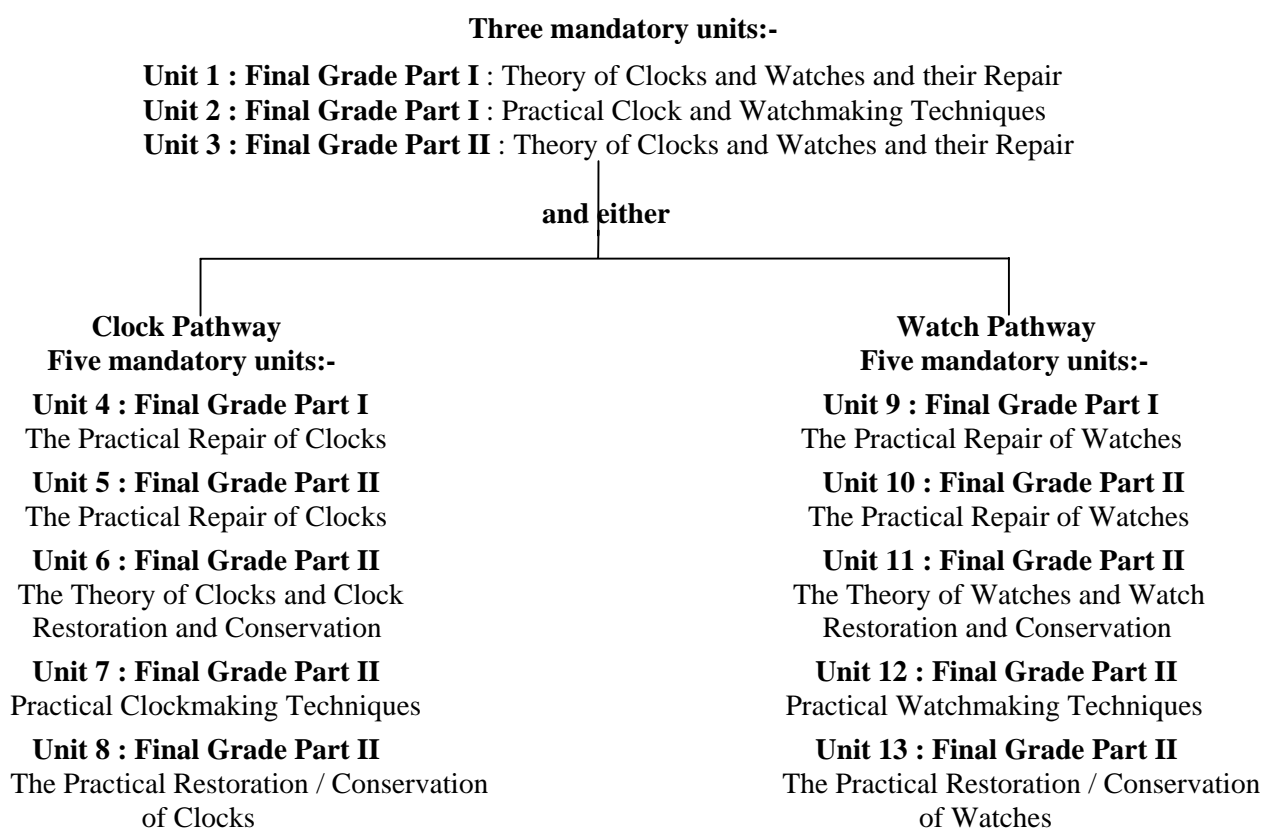
In each instance the “List of Contents” summarises the overall requirements and enables the candidate to record all of the various items that have been repaired. A separate form for each repair, either the “Clock Form”, “Mechanical Watch Form” or “Quartz Watch Form”, is used to describe the work completed.

Many students progress from the Certificate in Clock and Watch Servicing to study for the Certificate in the Repair, Restoration and Conservation of Clocks. Candidates who follow the “Clock” pathway are required to submit drawings of clock escapements. Knowledge of drawing conventions and the ability to produce working drawings, gained by studying for Unit 3, Technician Grade : Technical Drawing, would thus be an advantage. If you wish to consider Unit 4, please request further details and the necessary forms from the Examinations Secretary.

Certificate in the Repair, Restoration and Conservation of Clocks / Watches (Final Grade Part I and Final Grade Part II)

This qualification comprises three mandatory units relevant to both clocks and watches; two alternative pathways enable the candidate to specialise in either clocks or watches as illustrated in the diagram below. Each pathway comprises five mandatory units. Candidates are required to pass the three mandatory units and the five units necessary for the chosen pathway in order to gain the Certificate in the Repair, Restoration and Conservation of Clocks / Watches.

Diagram showing the structure of the Certificate in the Repair, Restoration and Conservation of Clocks / Watches:-



It is anticipated that most students will sit Final Grade Part I units on completion of the first year and Final Grade Part II Units at the end of the second year.

The Mandatory Unit Titles:-

- Unit 1: Final Grade Part I: Theory of Clocks and Watches and their Repair (basic theory of the construction, repair and adjustment of clocks and watches)
- Unit 2 : Final Grade Part I: Practical Clock and Watchmaking Techniques (hand and machine techniques for making and modifying clock / watch parts)
- Unit 3 : Final Grade Part II: Theory of Clocks and Watches and their Repair (advanced theory of the construction, repair and adjustment of clocks and watches)

Clock Pathway, five Mandatory Units:-

- Unit 4 : Final Grade Part I: The Practical Repair of Clocks
(practical work dismantling, diagnosing and correcting faults, assembling, adjusting and lubricating clocks)
- Unit 5 : Final Grade Part II: The Practical Repair of Clocks
(practical work:- dismantling, diagnosing and correcting faults, assembling, adjusting and lubricating more complex clocks)
- Unit 6 : Final Grade Part II: The Theory of Clocks and Clock Restoration and Conservation
(the theory of the construction, repair, adjustment, restoration and conservation of antique clocks)
- Unit 7 : Final Grade Part II: Practical Clockmaking Techniques
(hand and machine techniques for making and modifying delicate and complex clock parts)
- Unit 8 : Final Grade Part II : The Practical Restoration / Conservation of Clocks
(research, appraisal and evaluation of practical work:- dismantling, diagnosing and correcting faults, assembling, adjusting lubricating and repairing and replacing components during the restoration / conservation of antique clocks)

Watch Pathway, five Mandatory Units:-

- Unit 9 : Final Grade Part I: The Practical Repair of Watches
(practical work dismantling, diagnosing and correcting faults, assembling, adjusting and lubricating complex quartz watches and the larger calibres of basic mechanical watches)
- Unit 10 : Final Grade Part II: The Practical Repair of Watches
(practical work dismantling, diagnosing and correcting faults, assembling, adjusting and lubricating more complex and smaller calibres of mechanical watches including chronographs)
- Unit 11 : Final Grade Part II: The Theory of Watches and Watch Restoration and Conservation
(the theory of the construction, repair, adjustment, restoration and conservation of watches)
- Unit 12 : Final Grade Part II: Practical Watchmaking Techniques
(hand and machine techniques for making and modifying delicate and complex watch parts)
- Unit 13 : Final Grade Part II : The Practical Restoration / Conservation of Watches
(research, appraisal and evaluation of practical work:- dismantling, diagnosing and correcting faults, assembling, adjusting lubricating, repairing and replacing components during the restoration / conservation of older watches)

A student can decide whether to study for all of the units at any one time or just one or two.

The candidate must gain the following in order to receive the award, Certificate in the Repair, Restoration and Conservation of Clocks / Watches:-

Pass:- At least 40% in each of the three mandatory units and the five units of the selected pathway.

Pass with Merit:- At least 40% in each unit with an overall average of at least 66% for the specified units for the selected pathway.

General Information :“Final Grade Part I & II” Examinations:-

Full details of the syllabus and the assessment procedure are provided in the following handbooks:-

- a. “Syllabus Information - Certificate in the Repair, Restoration and Conservation of Clocks / Watches”
- b. “Specimen Papers – Certificate in the Repair, Restoration and Conservation of Clocks / Watches”

These handbooks are provided with the Intermediate and Final Grade Distance Learning Courses. Some important general information is included on the following pages to provide guidance for the candidate.

Theory Examinations:-

There are some theory topics in Unit 1 (Final Grade Part I : The Theory of Clocks and Watches and their Repair) which were not contained in the Intermediate Grade Distance Learning Course. An extra lesson, Lesson 13, has therefore been prepared to complement the original Intermediate Grade in order to provide this material. The content of Lesson 13 has been drawn from the Final Grade course. The tabulated references in the “Contents” pages pinpoint the topics in Lessons 1 – 12 that are contained in the Final Grade Part I syllabus. It should be noted that in some instances the inclusion of a particular topic is shown underlined to indicate that the Examiner will only expect a **working knowledge** of the content and its application instead of requiring familiarity with every detail.

Students currently purchasing the Distance Learning Course will receive Lesson 13 and the appropriate handbooks as part of their course. **If you are using an edition which was bought prior to the amendments and addition of Lesson 13 please contact the Examinations Officer to ensure that the new material is provided.**

The theory topics in Unit 3 (Final Grade Part II : The Theory of Clocks and Watches and their Repair) are to be found in the three grades of the Distance Learning Course, Preliminary, Intermediate and Final. The tabulated references in the “Contents” pages should be used to identify the various topics that are contained in the Final Grade Part II syllabus.

The examination paper for Final Grade : Part I : Unit 1 : The Theory of Clocks and Watches and their Repair contains two sections – Section A, essay type questions, and Section B, short answer questions. Section A provides a selection of questions which ensure a choice for candidates following either the “Clock” or the “Watch” pathway. Candidates are, however, not restricted to the questions from the syllabus of their chosen pathway. There is a choice of short questions in section B. The same pattern is present for Final Grade Part II : Unit 3 : The Theory of Clocks and Watches and their Repair. Final Grade Part II : Unit 6 : The Theory of Clocks and Clock Restoration and Conservation and Unit 11 : The Theory of Watches and Watch Restoration and Conservation offer a choice of essay type questions in Section A but candidates are required to attempt all of the short answer questions in Section B.

General information about the “Final Grade Part I & II” examinations, continued:-

There are some aspects of the syllabus for the Final Grade Part II theory examinations which are not yet present within the three Distance Learning Courses. Although these additional topics are included in the handbook giving details of the syllabus, examinations will focus only on the content which is to be found in the Distance Learning Courses.

The Record of Repairs:-

Final Grade Part I : Unit 4, Unit 9; Final Grade Part II : Unit 5, Unit 10 (also Technician Grade : Unit 4):-

These units require the candidate to complete a practical test (except Technician Grade Unit 4) and to produce a “Record of Repairs”. The “Record of Repairs” gives the Examiner basic information about a number of clock / watch repairs that the candidate has completed. The Institute provides a form to guide the candidate for each of the units requiring a Record of Repairs - the “List of Contents”. This shows the number of repairs which are required and also gives a number of “Repair Processes” such as silvering and lacquering, adjusting canon pinion tightness. The candidate also uses the “List of Contents” to itemise the repairs that are being included. Separate forms, “Clock Form”, “Quartz Watch Form” and “Mechanical Watch Form” enable the candidate to record details about each item that has been repaired including the nature of the work required. Each repair has to be checked by a professional member of the Institute (MBHI / FBHI) to ensure that the work has been completed to a good standard.

Each unit has different requirements and full details are provided in the handbook “Syllabus Information:- Certificate in the Repair, Restoration and Conservation of Clocks / Watches”. The “List of Contents” for Final Grade Part I : Unit 4 and Unit 9 together with a copy of the “Clock Form”, “Quartz Watch Form” and “Mechanical Watch Form ” forms accompany the Intermediate Grade Distance Learning Course. Similarly, the appropriate standard forms for Unit 5 and Unit 10 are included in the Final Grade Distance Learning Course. An outline of the requirements for each unit is given below:-

1. Unit 4 : Final Grade Part I The Practical Repair of Clocks - The candidate has to complete eight clock repairs together with a number of basic clock repair processes and submit a drawing of a recoil escapement.
2. Unit 9 : Final Grade Part I The Practical Repair of Watches - The candidate has to complete ten watch repairs together with a number of basic watch repair processes.
3. Unit 5 : Final Grade Part II The Practical Repair of Clocks - The candidate has to complete ten clock repairs together with a number of clock repair processes and submit a drawing of a dead beat escapement.
4. Unit 10 : Final Grade Part II The Practical Repair of Watches - The candidate has to complete fifteen watch repairs together with a number of watch repair processes.

The “Record of Repairs” thus describes the servicing of a specified number of clocks / watches together with particular, fundamental repair processes. An important aspect of the Record of Repairs is the checking of each item and each repair process by a qualified professional member of the British Horological Institute (MBHI / FBHI). The completed clock / watch repair is checked for quality by reference to guidelines which follow later in this section. An item can only be approved if each of the guidelines accurately describes the candidate’s work.

General information about the “Final Grade Part I & II” examinations, continued:-

If you are using the Distance learning Course there are three ways in which the standard of your work can be checked:-

1. You can approach one of the colleges offering the BHI course to enquire whether the tutors can assist.
2. Take items to Upton Hall during one of the study weekends or seminars; prior arrangement is necessary.
3. Approach the Institute to link you, the student, with a qualified member of the Institute. A fee will normally be required for, usually, two or three sessions to verify the items in any one Record of Repairs or Portfolio. It may be that through your local branch of the British Horological Institute you will be able to identify a suitable professional member. If this is the case, we are very ready to accept such suggestions but it is important that the Examinations Secretary is informed of any arrangement to ensure that the person concerned is fully aware of the task they will be undertaking. An “Assessor Pack” will be sent to each assessor to explain the requirements.

Your assessor will, assuming your work is of the required quality, sign the “Repair Form” for each item to certify that the work has been checked and found to be of a good standard.

The completed Record of Repairs is usually submitted by the candidate to Upton Hall for assessment in May / June; the actual submission date will be provided each year when the dates and information for the examination becomes available.

Checking the completed Record of Repairs:-

The Record of Repairs is checked by the Senior Examiner to determine whether the various requirements have been achieved.

A “Pass” can only be awarded if the candidate has completed:-

- a. the required number of repairs for the unit; they should be listed on the “List of Contents” for the unit concerned
- b. a separate, “Clock Form”, “Mechanical Watch Form” or “Quartz Watch Form” to describe each repair. Every repair form must be signed by a BHI qualified member (MBHI / FBHI) to show that the work is of a good commercial standard.
- c. all of the “Repair Processes” in the syllabus for the particular unit. They are shown on the “List of Contents”. Each repair process must have been approved by a BHI qualified member (MBHI / FBHI). The situation may occur that one or more of the “Repair Processes” is not required for the work undertaken. Any such “Repair Processes” must be included as exercises. A separate “Clock Form”, “Watch Form” or “Quartz Watch Form” is necessary to give details of each of these exercises which must be approved by a BHI qualified member.
- d. for the Certificate in the Repair, Restoration and Conservation of Clocks / Watches, a drawing of a Recoil Escapement (Unit 4) / a drawing of a Dead Beat Escapement (Unit 5) These should be drawn to BS 308 (as detailed in PP7308) and contain construction lines showing how the escapement has been designed and the escapement data. (The drawing will be marked by BHI Examiners and assessment forms part of the final result for this Unit (15%))

General information about the “Final Grade Part I & II” examinations, continued:-

A “Pass” for the “Record of Repairs” can only be awarded if the candidate has met all the requirements.

Referred: If, when checked by the Senior Examiner, the work submitted in the Record of Repairs does not meet the requirements or the documentation is incomplete, it will be returned to you during August with a brief note explaining the discrepancy. You may then resubmit the Record of Repairs at any time; a nominal fee for checking (£10.00) should accompany the Record of Repairs.

The following forms are necessary to ensure that, all of the requirements are completed and the work is clearly recorded. They assist the Senior Examiner to check whether, or not, a “Pass” should be awarded.

- **“List of Contents”** There is a separate “List of Contents” for each unit (Units 4, 5, 9, 10) to summarise the work undertaken and to act as an aide memoire to ensure the candidate completes the necessary number of repairs and the fundamental repair processes. The “List of Contents” gives:-
 - a. The number of repairs required for the unit together with advice concerning the type of clocks / watches
 - b. The specific “repair processes” required for the unit.
 - c. Any drawings required for the particular unit. (Unit 4 - A drawing of a Recoil Escapement; Unit 5 - a drawing of a Dead Beat Escapement)
- **“Repair Forms”** A separate “Repair Form” is required for each serviced item to record a description of the item, faults noted, repair work undertaken etc. There are three different types of “Repair Forms” - “Clock Form”, “Mechanical Watch Form” and “Quartz Watch Form”.

These forms are available from the BHI and Examination Centres; they must be used by every candidate.

The “Assessor Guidance Notes” on the following pages form the basis for determining whether each item has been repaired to a satisfactory standard.

Assessor Guidance notes, Record of Repairs / Portfolio

Clocks:-

Examine the clock as far as possible and ask the candidate questions as necessary to ensure that the following requirements have been achieved.

- 1) The movement has been adequately cleaned - free from dirt, fingerprints, traces of cleaning fluid, metal polish etc.
- 2) The student has followed an appropriate cleaning and rinsing procedure for the type of clock.
- 3) The components are in sound condition with no need for further repair or replacement of parts.
- 4) The condition / size of mainspring was checked.
- 5) End / side shake of pivots is correct with bushing undertaken to a high standard; depthing is correct.
- 6) The action of the escapement is correct and the student understands the functioning of the escapement and approaches for repair and adjustment.
- 7) The striking and chiming trains (if present) are set up properly with adequate warning and correct operation of rack, gathering pallet, count wheel, hammer lift/drop etc.
- 8) The pivots, escapement and other parts are correctly lubricated and the student understands the use of various lubricants.
- 9) The clock is accurately adjusted for rate and beat.
- 10) The hands are fitted to align correctly and with sufficient clearance.
- 11) Any restoration of the dial and hands is satisfactory. (Graining, silvering, lacquering, bluing etc.)



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Assessor Guidance notes, Record of Repairs / Portfolio

Mechanical Watches:-

Examine the watch as far as possible and ask the candidate questions as necessary to ensure that the following requirements have been achieved.

- 1) The movement has been adequately cleaned - free from dirt, fingerprints etc.
- 2) The student has followed an appropriate cleaning and rinsing procedure for the type of watch.
- 3) The components are in sound condition with no need for the replacement of further components.
- 4) The condition / size of mainspring was checked.
- 5) The train is in good condition with correct engagement and clearances.
- 6) The cannon pinion tension is correct.
- 7) The escapement / balance assembly is functioning correctly - amplitude, shakes, hairspring, curb pins.
- 8) The calendar functions correctly.
- 9) The movement has been correctly lubricated - oil sinks, end-stones, keyless work, escapement, and the student understands the correct use of lubricants.
- 10) The watch is accurately adjusted for rate and beat.
- 11) The hands are fitted to align correctly and with sufficient clearance.
- 12) The case is clean with any replacement of glass, button, seals, spring bars undertaken correctly.
- 13) Any refurbishment of the case is satisfactory.

Assessor Guidance notes, Record of Repairs / Portfolio

Quartz Watches:-

Examine the watch as far as possible and ask the candidate questions as necessary to ensure that the following requirements have been achieved.

- 1) The movement has been adequately cleaned - free from finger prints, dirt etc.
- 2) The student has followed an appropriate cleaning and rinsing procedure for the type of watch.
- 3) The components are in sound condition with no need for further repair or replacement of parts.
- 4) The pivots are correctly lubricated and the student understands the principles for lubricating quartz watches.
- 5) The calendar functions correctly.
- 6) The test results have been entered on the candidate's "Quartz Watch Form"
- 7) The correct battery has been fitted - high/low drain.
- 8) The hands are fitted to align correctly with sufficient clearance.
- 9) The case is clean with any replacement of glass, button, seals, spring bars, undertaken correctly.
- 10) Any refurbishment of the case is satisfactory.

General information about the “Final Grade Part I & II” examinations, continued:-

The Portfolio – Guidance to Candidates:-

Certificate in the Repair, Restoration and Conservation of Clocks / Watches

Final Grade Part II:-

Unit 8 : The Practical Restoration / Conservation of Clocks

Unit 13 : The Practical Restoration / Conservation of Watches

Unit 8 and Unit 13 require candidates to submit a Portfolio giving details of the conservation / restoration of five clocks / watches. These guidelines should be read to ensure that the nature of the work undertaken includes the necessary opportunities for restoration / conservation. Some or all of the items can be also included in the Record of Repairs required for Unit 5 : Final Grade, Part II : The Practical Repair of Clocks or Unit 10 : Final Grade, Part II : The Practical Repair of Watches.

1 Restoration / Conservation Items

You may choose any type of clock / watch to be the subject of conservation / restoration. Clearly if items of some antiquity are available there are wider opportunities for the candidate to research the maker or the style of replacement components but this does not preclude the use of more modern pieces which require “conservation / restoration”. It is the approach and nature of the work together with accompanying supplementary information which the Examiners consider to be important.

2 Documentation

A separate “List of Contents” is available for Unit 8 and Unit 13. The standard “Repair Forms” (“Clock Form”; “Quartz Watch Form” and “Mechanical Watch Form”) are used as with the Record of Repairs. The previous pages relating to the “Record of Repairs” should be read in conjunction with this section. If items are presented in both the “Record of Repairs” and the “Portfolio”, the “Repair Forms” should be photocopied to ensure complete documentation is present for both the “Record of Repairs” and the “Portfolio”.

The essential difference between the Record of Repairs and the Portfolio is the submission of supplementary information in the Portfolio to provide further details; this should focus on:-

1. Appraisal
2. The Conservation / Restoration Process
3. A Justification of the Conservation / Restoration Approach
4. Research

The completed Portfolio will consist of two parts:-

1. The Standard Forms:-

- a. A “List of Contents” for the Portfolio
- b. A separate “Clock Form”, “Mechanical Watch Form” or “Quartz Watch Form” for each for each item giving basic information. These forms must be signed by a qualified member of the Institute (MBHI / FBHI) to show that the work has been completed to a good commercial standard.

Portfolio, Standard Forms, continued:-

As with the “Record of Repairs” the BHI Senior Examiner will check the “List of Contents” and the “Repair Forms” for each item to ensure that they fulfill the requirements. Any Portfolio which fully meets the requirements will receive a “Pass” (40%)

- 2. Supplementary Information** The candidate may submit supplementary information for each Portfolio item in the form of text, sketches and / or photographs. The BHI Examiners will assess this supplementary information which must provide for each Portfolio item:-
- a. Appraisal
 - b. The Conservation / Restoration Process
 - c. A Justification of the Conservation / Restoration Approach
 - d. Research

The expression “Conservation / Restoration is used to encompass the range of approaches described in booklet “The Servicing of Clocks and Watches” Appendix 1. Further guidance to define the required content is given in the following pages.

3. How your mark is determined:-

- a. Any Portfolio which fully meets the requirements will gain a Pass (40%)
- b. The mark awarded by the Examiners for the supplementary information is added to the 40%, already gained if the documentation is complete, thus giving a higher mark.
- c. If 66% is attained a “Pass with Merit” is awarded.

3 Further details about the type of work for submission within the Portfolio:-

Any clock or watch is suitable for inclusion in the Portfolio. It is, however, necessary to ensure that the work undertaken is not merely of a routine repair nature but requires more complex repair techniques and the replacement of components / conservation. As a guide the following is required:-

- a) the inclusion of “more complex repair techniques”
- b) the replacement of at least two significant components that require manufacture by the candidate

The work for a Clock Portfolio, Unit 8, could include:-

Examples of “more complex repair techniques”:-

- 1) *Train, going / striking:-*
 - a) *bush worn pivot holes which require the making of bushes for particular situations, use of depthing tool to check **and adjust** depths of wheels and pinions*
 - b) *re-pivot narrow, worn / broken pivots, including making a flat drill*
 - c) *correct end-shakes*
 - d) *damaged wheels and pinions (make replacement teeth)*
 - e) *truing wheels*
- 2) *Striking work:-*
 - a) *Repair rack with damaged teeth*
 - b) *Repair worn or damaged gathering pallet*
 - c) *Repair worn or damaged striking levers*

Portfolio, Examples of “more complex repair techniques” continued

3) Escapement:-

- a) Repair worn damaged recoil / dead beat escape wheel
- b) Platform – replace damaged jewels, rubbed in and pushed in jewels (including use of jewellery tool reamers and pushers), depthing of cylinder and escape wheel - adjusting the chariot

Examples of “significant components” to be replaced by the candidate, these components are to be actually made by the candidate not purchased or modified components:-

1) Escapement:-

- a) Replace worn / damaged recoil / dead beat escapement pallets
- b) Replace worn damaged recoil / dead beat escape wheel
- c) Replace damaged crutch
- d) Platform, make and fit replacement balance staff, make and fit replacement cylinder plugs

2) Train:-

- a) Replace damaged great wheel / train wheel
- b) Replace arbor and pinion

3) Striking work:-

- a) Make and fit new rack
- b) Make and fit new gathering pallet
- c) Replacement striking lever

The work for a Watch Portfolio, Unit 13, could include:-

Examples of “more complex repair techniques”:-

1) Train:-

- a) bush worn pivot holes
- b) use of depthing tool to check **and adjust** depths of wheels and pinions
- c) re-pivot worn / broken pivots, including making a flat drill
- d) correct end-shakes
- e) damaged wheels and pinions (make replacement teeth)
- f) truing wheels

2) Balance and Escapement:-

- a) Replace pallet jewels
- b) Replace cylinder plugs
- c) Replace impulse pin
- d) Replace hairspring

Examples of “significant components” to be replaced by the candidate, these components are to be actually made by the candidate not purchased or modified components:-

1) Escapement:-

- a) Replace balance staff

2) Train:-

- a) Replace damaged barrel / train wheel
- b) Replace arbor and pinion

Portfolio, Examples of “significant components” to be replaced by the candidate”, continued:-

3) *Various:-*

- a) *Replace stem*
- b) *Replace setting lever spring*
- c) *Replace ratchet wheel*

4 Supplementary Information

The preparation of a Portfolio gives many opportunities for the student to extend the information which is routinely presented on the standard forms.

There are four broad areas which must form the focus of this supplementary information for each item. These are given below with details of the type of content which will be acceptable:-

1. Appraisal:-

You are required to demonstrate that you can evaluate the condition of the items that receive your attention and can appraise the work of others by giving:-

- initial condition of the clock / watch movement and its case

INCLUDE

- if appropriate, an evaluation of previous repairs, their quality, effectiveness and whether they are appropriate

2. The Conservation / Restoration Process:-

You are expected to describe the design / making of the two new components for each Portfolio item together with other work undertaken. If there are more than two components please select the more complex items.

Describe:-

- the design / making of the two missing / replacement components with, where appropriate, calculations

AND

- the other work undertaken to the clock / watch

3. A Justification of the Conservation / Restoration Approach:-

You are required to show that you are familiar with the alternative approaches available. You are expected to refer to the Examinations Board Paper on The Servicing of Clocks and Watches when providing:-

- a comparative evaluation of the selected approach with alternatives

INCLUDE

- steps taken to maintain originality including the reasons for selecting the materials **and** the design for replacing broken or missing components

AND

- an evaluation of the work undertaken to the clock / watch

The Portfolio, Supplementary Information, continued:-

4. Research:-

You must show that you are able to carry out research and present your findings by describing:-

- research to discover information about the historical background of the maker of the clock / watch.
- research to determine the design of a replacement component (unless already included in “The Conservation Restoration Process”).
- research to learn about a manufacturing process required to produce a replacement component.
- research to consider the performance of the piece that has been restored.
- other research directly relevant to the piece.

It will be evident, from each item above that the supplementary information does not merely extend the basic documentation to form a step by step guide to the restoration / conservation process. The supplementary information requires the application of skills such as research, evaluation and analysis. Desirable content is not routine but original to the candidate and to each Portfolio item; it demonstrates the depth of learning involved in the work.

Marks are not awarded for details of routine servicing or routine repair procedures and these should not be included in the supplementary information.

Illustrations

Photographs and sketches can make an important contribution if they illustrate and clarify points contained in the text. They should focus on unique features of the item and its conservation / restoration; there is little benefit in providing general photographs without any clear purpose.

How much to write

Some students find it difficult to limit the length of supplementary information for each Portfolio item. There is no intent by the Institute to constrain a candidate’s enthusiasm but it is helpful to provide a guide to the quantity of information for each Portfolio item. Using the headings, “Appraisal”, “The Conservation / Restoration Process”, “A Justification of the Conservation / Restoration Approach” and “Research”, a candidate can readily provide sufficient depth for each conservation / restoration item within eight carefully selected pages (if typed); this would include any detail photographs and drawings.

It is essential that each of the sections is clearly shown with the appropriate heading to guide the Examiner.

The qualities required for a Pass with Merit are readily apparent from such a Portfolio; indeed, it is preferable to many pages of a routine nature. If more than eight pages are included for any one item Examiners will focus mainly on the first eight pages present.

The Portfolio, Supplementary Information, continued:-

Presentation

The Portfolio should be assembled in a loose-leaf ring binder; clarity of presentation is essential but marks are not awarded for word processing or desktop publishing skills. Excellent layout is often indicative of a candidate striving to achieve at a high standard both in content and presentation but it can be time consuming. The emphasis should be towards investigative work or evaluating the conservation / restoration. Some excellent examples of Portfolios have been hand written with inserted photographs and drawings.

The completed Portfolio is to be submitted by the candidate to Upton Hall for assessment in May / June. The actual submission date is provided each year when details for the examination are circulated.

5 Summary and checklist for the Portfolio:-

A finished Portfolio will consist of:-

- The “List of Contents” giving the clocks / watches which have been the subject of conservation / restoration and details, for each item, of the replacement parts and non-routine repair processes.
- A “Repair Form” form for each Portfolio item, containing details of the item and the work involved. The form must be signed by a qualified member of the Institute to provide evidence that the work has been completed to a good standard.
- Supplementary information, notes, photographs and sketches produced by the candidate with the four broad area headings for each Portfolio item:-
 - Appraisal
 - The Conservation / Restoration Process
 - A Justification of the Conservation / Restoration Approach
 - Research

6 The Assessment of the Portfolio

A “Pass” can only be awarded if, when the Senior Examiner checks the content of the Portfolio, it is evident that the standard documentation and the nature of the work undertaken meets the guidelines for the Portfolio. If the required number of items has not been presented, the forms are incomplete or the work does not conform to the guidelines, the Portfolio will be returned with a note of explanation.

A Portfolio which has been found to be incomplete may, on payment of the examination fee, be resubmitted at a subsequent examination after completing the missing items.

The Portfolio, Assessment, continued:-

Assessment of the Portfolio takes place in three stages:-

1. The initial, internal, assessment is by a qualified member of the Institute (MBHI / FBHI) who checks that the work has been completed to a good standard, as with the Record of Repairs in Units 4, 5, 9, 10.
2. Checking by the Senior Examiner ensures that the number of items, the nature of the work and the initial assessment by a qualified member of the Institute fulfill the examination requirements. If the Portfolio is found to be “complete” a “Pass” (40%) is awarded.
3. The supplementary information is then assessed by Institute Examiners who award a mark reflecting, for each restored item, the depth and quality of the supplementary work.

Assessing the supplementary information:-

Two BHI Examiners assess the supplementary information, which has been submitted with the basic documentation. Each item is assessed separately; the information submitted provides a range of insights into the candidate’s work. Four broad parameters are used:-

1. The depth of information
2. Quality of content
3. Use of photographs / sketches / drawings
4. Approach to restoration / conservation

How your mark is calculated:-

A “Pass” (40%) can only be awarded if, when the Senior Examiner checks the content of the Portfolio, it is evident that the standard documentation and the nature of the work undertaken meet the guidelines for the Portfolio.

- a. Any Portfolio which fully meets the requirements will gain a Pass (40%)
- b. The mark awarded by the Examiners for the supplementary information is added to the 40%, already gained if the documentation is complete, thus giving a higher mark.
- c. If 66% is attained a “Pass with Merit” is awarded.

The Examination Calendar:-

Currently the Technician Grade examinations are available in May / June and November / December. Final Grade Part I and Final Grade Part II examinations are available in May / June, some Units are available in November / December.

It is anticipated that the November examinations will be discontinued after 2008.

The November / December Examinations:-

Certificate in Clock and Watch Servicing (three units, one year course):-

The Mandatory Units:-

- Unit 1 : Technician Grade: Theory of Clock and Watch Servicing
- Unit 2 : Technician Grade: Basic Practical Workshop Processes

The Optional Units:-

- Unit 3 : Technician Grade: Technical Drawing
- Unit 4 : Technician Grade: Practical Clock / Watch Servicing

Certificate in the Repair, Restoration and Conservation of Clocks / Watches

Some units may be available, e.g. Unit 2, Unit 4, Unit 5, Unit 7, Unit 9 Unit 10, Unit 12.

A Record of Repairs or Portfolio can usually be submitted for verification by the Senior Examiner to confirm that it meets the requirements for the unit concerned.

The May / June Examinations:-

Certificate in Clock and Watch Servicing (three units, one year course):-

The Mandatory Units:-

- Unit 1 : Technician Grade: Theory of Clock and Watch Servicing
- Unit 2 : Technician Grade: Basic Practical Workshop Processes

The Optional Units:-

- Unit 3 : Technician Grade: Technical Drawing
- Unit 4 : Technician Grade: Practical Clock / Watch Servicing

Certificate in the Repair, Restoration and Conservation of Clocks / Watches (eight units required, two year course)

The Mandatory Units:-

- Unit 1: Final Grade Part I: Theory of Clocks and Watches and their Repair
- Unit 2 : Final Grade Part I: Practical Clock and Watchmaking Techniques
- Unit 3 : Final Grade Part II : Theory of Clocks and Watches and their Repair

Clock Pathway:-

- Unit 4 : Final Grade Part I: The Practical Repair of Clocks
- Unit 5 : Final Grade Part II : The Practical Repair of Clocks
- Unit 6 : Final Grade Part II : The Theory of Clocks and Clock Restoration and Conservation
- Unit 7 : Final Grade Part II : Practical Clockmaking Techniques
- Unit 8 : Final Grade Part II : The Practical Restoration / Conservation of Clocks

Watch Pathway:-

- Unit 9 : Final Grade Part I: The Practical Repair of Watches
- Unit 10 : Final Grade Part II : The Practical Repair of Watches
- Unit 11 : Final Grade Part II : The Theory of Watches and Watch Restoration and Conservation
- Unit 12 : Final Grade Part II : Practical Watchmaking Techniques
- Unit 13 : Final Grade Part II : The Practical Restoration / Conservation of Watches

How to Register for the Examination:-

Application forms are available on request from Upton Hall. Approximate dates are given below; the actual closing date for entries is stated on the application forms. Details of the dates of the examinations and application forms can be obtained from the Examinations Secretary.

May / June Examinations:-	Forms available from:	1 st February
	To be returned by:	March (3 rd Week)
November / December Examinations:-	Forms available from:	1 st September
	To be returned by:	October (3 rd Week)

Examination fees are revised from time to time, details of current charges may be obtained from the Examinations Secretary. Payment must accompany your application form.

The candidate's application is accepted on the basis that:-

1. Entries received at Upton Hall after the closing date will be subject to an additional fee of £20.00 per unit.
2. Entries will only normally be accepted up to one week prior to the date of the unit or subject concerned.
3. No refund of fees can be made in the event of cancellation or a candidate not being present for the examination.
4. Candidates who are not students attending a course at the Centre are expected to provide their own workshop facilities to make the Practical Test Piece.
5. Whilst every effort will be made to consider applications from candidates with special assessment needs, there is no guarantee that the Institute will be able to make arrangements if applications are late or not accompanied by supportive information as outlined in the letter EX2.
6. "Special consideration" can be requested if it is felt that due to illness or injury the candidate may have underachieved during an examination. Any such request must be submitted within seven days from the date of the examination in the instance of Theory, Technical Drawing, or the Practical Tests associated with Certificate in the Repair, Restoration and Conservation of Clocks / Watches Units 4, 5, 9, 10. In the case of the practical examination requiring a "practical test piece" to be constructed, the request should be made at the onset of the difficulty.
7. Information regarding Special Consideration, Special Assessment Needs and the Appeal Process is available in the Examination Handbook for the Distance Learning Course and the Examination Centre Handbook.
8. The Examination Papers for "Practical Test Pieces" for candidates who are students at the Examination Centre indicated will be sent to the centre for distribution by college tutors to the candidates.
9. If you indicate that you are not a student at the examination centre, the papers for the "Practical Test Piece" will be sent by email to the email address given on this form. If you

request first class post the papers will be despatched the day prior to the commencement of the examination to your private address. If there is a delay contact the Examinations Secretary immediately. If there are any special instructions, e.g. despatch to an alternative address, it is essential that you inform the Examinations Secretary when you send your application form to Upton Hall.

10. The Institute cannot accept any responsibility for delay in receipt of examination papers, material kits or items such as watch movements required for the examination, when sent to Upton Hall or the candidate's address.
11. Any request for the Institute to re-assess a candidate's work (an "appeal") must be accompanied by a fee of £45.00 per unit together with any information relevant to the request.
12. An appeal can only be accepted if received at Upton Hall before the closing date for appeals given at the time when examination results are received.
(May examinations - 31st August; November examinations - 28th February)
13. In the event of an appeal the Institute's Chief Examiner assesses the standard of the candidate's work and, with two members of the Examination's Board, will consider whether, or not, the outcome of the initial assessment was correct. (The "appeal process")
14. The fee will be returned if it is found that as a result of the appeal process the outcome of the examination (i.e. Pass / Fail or Pass / Pass with Merit) is changed.
15. The Institute, having followed the appeal process, will have fulfilled its duty to any candidate who has requested that their work is re-assessed and no further appeal will be considered.

Overseas Candidates:-

The Institute / EAL awards outlined in this handbook have been available to candidates from overseas for many years. Some have travelled to an Examination Centre in order to sit the examinations but many make arrangements in their place of origin. Most aspects of the examination presented in the handbook for candidates in Great Britain also apply to overseas candidates; the main difference is the use of Examination Centres and the approach to invigilation.

Overseas candidates usually follow a course of study using the Distance Learning Course and are encouraged to enter the EAL / British Horological Institute's examinations. Most units can be undertaken in their place of origin by the appointment of an invigilator. When applying to enter the examination, the candidate is required to provide the name and address of a suitable invigilator:-

- a) A Justice of the Peace
- b) A Member / Fellow of the British Horological Institute
- c) A Principal / Headteacher / Teacher of a recognised educational establishment.

The examination papers will be sent to the invigilator together with information about the conduct of examinations. The invigilator will sign a declaration that the examination has taken place in accordance with the Institute / EAL regulations.

Certificate in Clock and Watch Servicing:-

All units can be taken in the place of origin

Certificate in the Repair, Restoration and Conservation of Clocks / Watches:-

Final Grade Part I (first year):-

All units can be taken in the place of origin

Final Grade Part II (second year)

Two units can be completed in the place of origin, but because there is a requirement for the Institute to monitor invigilation, the following units must be sat at an Examination Centre in Great Britain. The examinations are arranged on consecutive days; the headquarters of the British Horological Institute at Upton Hall, near Newark, Nottinghamshire, is an Examination Centre and can arrange overnight accommodation.

Clock Pathway:-

Unit 3 – The Theory of Clocks and Watches and their Repair

Unit 5 - The Practical Repair of Clocks

Unit 6 – The Theory of Clocks and Clock Restoration and Conservation

Watch Pathway:-

Unit 3 – The Theory of Clocks and Watches and their Repair

Unit 10 - The Practical Repair of Watches

Unit 11 – The Theory of Watches and Watch Restoration and Conservation

Overseas Candidates, continued:-

Record of Repairs / Portfolios:-

The handbooks clearly state that each of the items that comprise a Record of Repairs or a Portfolio have to be checked by a qualified member of the Institute (MBHI / FBHI). This may prove impossible in some countries – the Institute maintains a flexible approach to meet the needs of candidates wherever possible:-

- i) a qualified member of the Institute (MBHI, FBHI) - the Institute will try to provide a suitable person to check your work
- ii) a qualified clock / watchmaker, according to pathway selected. If the Institute is unable to locate a suitable person please suggest a qualified clock / watchmaker. It is important to provide details giving the name, address, qualification and experience at an early stage so that the Institute can decide whether, or not, the person meets the requirements.
- iii) if the above approaches cannot be followed, wherever possible, an alternative method will be suggested

Special Assessment Needs:-

The Institute is ready to consider requests from candidates who may require special provision to enable participation in the examination process:-

1. Special provision:- agreed before the examination e.g. extra time or amanuensis because of dyslexia.
2. Special consideration:- agreed after or during the examination (in the case of the Practical Test Piece) - e.g. allowance for temporary illness, injury or indisposition at the time of the examination.

Special provision:-

Information about any condition should be submitted to the Examinations Secretary, preferably prior to the candidate's application or, at the latest, should be submitted with the candidate's application form. This must include supporting information such as a specialist's report describing the candidate's condition and suggesting recommended provision.

Examples of the type of information required:-

- a. educational psychologist's report with a recommendation for extra provision
- b. summary of the situation by an educational psychologist with a recommendation for extra provision
- c. report from a qualified specialist teacher for dyslexia recommending extra provision
- d. doctor's certificate accompanied by a recommendation for extra provision

The Senior Examiner will carefully consider such requests with the assistance of two members of the Examinations Board. The decision, based on national guidelines, will be forwarded to the Examination Centre and the candidate at least one week prior to the examination.

If the information supporting a request for Special Assessment Needs is incomplete, or submitted after the closing date for entries, it may not be possible to ensure arrangements are completed in time for the Examination.

Special Consideration:-

A request for "Special consideration" can be made in the event of illness or injury causing a candidate to underachieve during an examination. Any request for "Special Consideration" should be submitted, together with appropriate evidence, to the Examinations Secretary. In the case of the Theory or Technical Drawing Examination it must be received within seven days of the examination or, for the Practical Examination, at the onset of the difficulty. The Senior Examiner, liaising with two members of the Examinations Board, will determine any provision to be made and inform the candidate accordingly.

How Your Work is Assessed by the Examiners:-

Examiners are trained and provided with detailed marking schemes for each of the various units.

- Every Theory script, Technical Drawing and Practical Test Piece is independently assessed by two Examiners.
- Every Record of Repairs is verified by a Senior Examiner to ensure that it meets the requirements.
- The Portfolios, Final Grade Part II : Units 8 and 13, are assessed by two Examiners

The assessment process is monitored by the Senior Examiner in order to prevent any errors and candidate assessment material is checked against archived examples to ensure constancy of standards over time. Borderline Pass / Fail and borderline Pass / Pass with Merit are carefully reviewed.

Theory Papers:-

Essay type questions:-

The examination paper indicates the maximum mark which can be allocated to the separate sections of each “essay type” question; the total for each question is 20 marks. The assessment reflects the degree to which the candidate is familiar with the relevant content of the course. The technical content of the answer is assessed; there are no marks awarded or any deduction of marks in respect of the accuracy of spelling or grammar.

The instructions for the paper state that mathematical questions should be laid out in a clear and logical manner, the use of calculators is permitted but the approach must be clearly shown. A correct answer, but without adequate working, can only receive a maximum of two thirds of

the possible marks; a clearly laid out answer, but with an incorrect result due to mathematical error, may also receive up to two thirds of the possible marks.

Short answer questions -

The Examiners award one mark for each wholly correct answer; a partially correct answer will be awarded a half mark.

Technical Drawing:-

The Examiner assesses the candidate’s drawing by considering the following aspects; the approximate allocation of marks is given:-

1. Planning of the page - Have the required elevations been drawn? Is the type of projection indicated? Are the elevations in the correct relative positions? Is the overall layout correct? Is the lettering of good quality and scale and units stated (15%)
2. Technical correctness - outlines, centre lines, hidden detail, contrast of lines, use of conventions - e.g. screw threads, wheel teeth , correctness of dimensioning (35%)
3. Elevations - correctness and completeness of elevations, accuracy of detail (50%)

Practical Test Piece:-

Each Practical Test Piece is assessed against three broad criteria at the **Technician Grade and Final Grade Part I:-**

- Accuracy
- Quality of workmanship
- Quality of finish

In addition, at **Final Grade Part II**, aspects of the function and design of the components are also assessed.

Accuracy:- A number of key dimensions are checked for accuracy. If, for each dimension, the size is within the tolerance stated on the drawing five marks are awarded; if within a broader tolerance, three marks are awarded. If the measurement is outside these requirements, a zero mark is awarded

Quality of workmanship:- Various aspects of the examination piece are identified to test whether, or not, the candidate has demonstrated the ability to achieve a high standard of workmanship. Marks are awarded for each aspect: a maximum of five marks for complete correctness. E.g. Are pivots parallel with correct end radius, square cornered root, square shoulder and correct chamfer? Are working clearances and fits correct? Have parts (where required) been hardened and tempered?

Quality of finish:- Various aspects of surface finish are identified, each being allocated a maximum of five marks. E.g. sharpness of corners; absence of vice, file and machining marks; bluing, polishing on flat surfaces.

Design and function of components (where applicable):- The Examiners consider aspects of the function and appropriateness of the designed components. The function of, for example, an escapement is essential and accounts for over 50% of the final result.

The Record of Repairs:-

The Senior Examiner checks whether, or not, the Record of Repairs and Workshop Processes is complete:-

- Is the “List of Contents” present showing the repairs that have been undertaken?
- Does the “List of Contents” indicate that all of the “Repair Processes” have been included in the repairs, or as exercises, with each “Repair Process” having been checked and signed by a qualified member of the Institute?
- Is there a “Clock Form”, “Mechanical Watch Form” or “Quartz Watch Form” for each repair?
- Has each “Clock Form”, “Mechanical Watch Form” or “Quartz Watch Form” been signed by a qualified member of the Institute?
- If some of the processes have been included as exercises, has a separate sheet been provided giving further details of the watch / clock / exercise concerned and the nature of the exercise?
- Is the Escapement Design Drawing present (Final Grade Part I Unit 4, Final Grade Part II Unit 5, only)?

If the Record of Repairs and the Workshop Processes meet the examination requirements for the unit a Pass is awarded.

The Portfolio, Units 8 and 13:-

The Assessment of the Portfolio:-

Assessment of the Portfolio takes place in three stages:-

1. The initial assessment is by a qualified member of the Institute (MBHI / FBHI) who checks that the work has been completed to a good standard, as with the Record of Repairs in Units 4, 5, 9, 10.
2. Checking by the Senior Examiner ensures that the number of items, the nature of the work and the initial assessment by a qualified member of the Institute fulfill the examination requirements. If the Portfolio is found to be “complete” a “Pass” (40%) is awarded.
3. The supplementary material is then assessed by Institute Examiners who award a mark reflecting, for each restored item, the depth and quality of the work.

A candidate whose Portfolio is found to be incomplete is informed of the position when receiving the results for each unit. The Portfolio is returned; a **Portfolio which has been found to be incomplete may, on payment of the examination fee, be resubmitted at a subsequent examination.**

Portfolio, Assessing the supplementary Information:-

Two BHI Examiners assess the supplementary information, which has been submitted with the basic documentation. Each item is assessed separately; the supplementary information submitted provides a range of insights into the candidate’s work. Four broad parameters are used:-

1. The depth of supplementary information
2. Content
3. Use of photographs / sketches / drawings
4. Approach to restoration / conservation

How your mark is calculated:-

A “Pass” (40%) can only be awarded if, when the Senior Examiner checks the content of the Portfolio, it is evident that the standard documentation and the nature of the work undertaken meet the guidelines for the Portfolio.

- a. Any Portfolio which fully meets the requirements will gain a Pass (40%)
- b. The mark awarded by the Examiners for the supplementary information is added to the 40%, already gained if the documentation is complete, thus giving a higher mark.
- c. If 66% is attained a “Pass with Merit” is awarded.

If the required number of items has not been presented, the forms are incomplete or the work unsuitable the Portfolio will be returned with a note of explanation. **A Portfolio which has been found to be incomplete may, on payment of the examination fee, be resubmitted at a subsequent examination.**

Receiving your results:-

The results are despatched from Upton Hall early in August (May / June examination) or February (November/ December examination).

All candidates receive with their results a copy of the relevant Examiner's Reports. The Examiner's Report concludes with a brief statement about the action that a candidate should take if it is felt there has been an error in the result:-

“The Examiners exercise considerable care to ensure that there can be no error in the final mark awarded. If, however, you believe that a mistake has occurred then you may request that your paper be assessed again. The current charge for remarking is given on the application form; the fee must accompany the request. This should be received before (*date given when receiving results*). The fee is refundable if the outcome of the examination (i.e. Pass / Fail or Pass / Pass with Merit) is changed.

The Chief Examiner with two Examination Board members (The Appeals Panel) consider any request for papers to be reassessed. The Chief Examiner will not have been involved in your initial result and is therefore able to give an independent and impartial appraisal of the material to be reassessed:-

- the total mark will be checked against the sum of marks awarded for the separate criteria
- your theory paper / technical drawing / practical test piece / Portfolio will be reassessed
- the Chief Examiner will prepare a report informing you of the various details considered and the decision of the Appeals Panel.



British Horological Institute

Examinations Customer Service Statement:-

The British Horological Institute is committed to providing at all times a service, which is open and informative, efficient, courteous and cost effective:-

- The Institute will respond to correspondence within 10 working days of receipt
- Complaints will be acknowledged within five working days and a response despatched within 10 working days
- Information about the fee structure for the examinations is available on request to Upton Hall; all candidates are notified of entry fees at the time of registration.
- Candidates at the May / June Examination will receive their results in early August, certificates will be available at Graduation Day (October) or posted to candidates during the following two weeks. Candidates at the November / December Examination will receive their results in early February, certificates will be posted to candidates in April.
- Candidates will receive with the examination results a copy of the Examiner's Report for the examination and a summary of the syllabus and examination requirements for the units in the following Grade.
- Candidates who believe that a mistake has occurred in the marking of a paper, test piece; portfolio or drawing can request a reassessment. The charge for re-marking is given on the application form; the fee must accompany any request. This should be received during August (for the May / June examinations) or February (for the November / December examinations) and will be attended to within fifteen working days from the closing date for requesting a re-mark. The fee is refundable if it is found that there has been an error in the original result.

Contacting us

- If you require general help or advice on the Institute's examinations please telephone Upton Hall - 01636 817604 and ask for the Examinations Secretary.

Keeping us informed

- We should like to know if you are in any way dissatisfied with the level of service you receive. An awareness of any difficulties enables us to cater more effectively for our candidates.

Please write to:- The Examinations Secretary,
British Horological Institute
Upton Hall
Upton
Newark
Notts
NG23 5TE

Telephone:- 01636 817 604

Fax:- 01636 812 258

Email:- maxine@bhi.co.uk