



**AMERICAN WATCHMAKERS-CLOCKMAKERS INSTITUTE
HARRISON, OHIO**

(Also a support course for the AWCI CW21 exam)

BALANCE STAFFING & TIMING

- **The purpose** of this course is to teach the student all the fundamentals of balance staffing. Topics covered will include the verification and analysis of the escapement function, poising (static & dynamic), truing and timing adjustment in a mechanical watch. Cutting out a balance staff on a lathe and adjusting the balance staff, and removing balance staffs from Glucydur balances with the Horia tool.
- **Prerequisites:**
 - Minimum 3 years full-time experience in watch repair (and/or) having attended the following AWCI Courses:
 - Basic Watch Repair and/or
 - Automatic Watch Repair
 - Knowledge of watch escapement
 - Knowledge of the oscillator unit
 - Membership with AWCI
 - Ownership of hand tools as per tool list below
 - Ownership of the books *The Theory of Horology* and *The Watch Repairer's Manual* is essential. **Must read pages 99-166 of *The Theory of Horology* prior to attending the course.**
- Class Schedule **Monday- Thursday, 8:00 a.m. to 5:00 p.m., Friday 8:00 a.m. to 3:00 p.m.**

More specifically, the student will learn about:

- A. Overview of the nomenclature of the watch and its various components
- B. General repair procedure
 1. Jewels and endshake
 2. Proper servicing of balance
 3. Balance staffing and poising
 4. Verification and diagnosis of the lever escapement
 5. Adjusting and truing the hairspring and balance wheel
 6. Proper removal of a balance staff using a lathe
 7. Static & dynamic poising
 8. Modern cleaning practices
 9. Punch selecting
 10. Graver maintenance
- C. Assembly and lubrication
- D. Timing adjustments and analysis

ESSENTIAL MATERIALS FOR THE STUDENT TO BRING

For **all** AWCI courses, AWCI will provide cleaning machines and solutions. Hand tools should be provided by the student. Lathes will be available, but students should provide their own tools wherever possible. Ownership of quality hand tools is expected of a **Professional Watchmaker**. The brand name Bergeon mentioned below is used to help you identify the tools from the most popular tool catalogs; you are welcome to choose a brand of your choice, as long as it is of equal or better quality.

Check with your supplier for the recommended hand tools or their equivalents.

Balance Staffing & Timing		Suggested Tools Or Equivalent
TOOL LIST		
Description		Bergeon
1. Buff Stick Leather 6.0 mm wide with plexi-cover # 4056-6		1282-D 4056-6
2. Buff Stick Leather 6.0 mm wide with plexi-cover # 4056-6		
3. Casing Cushion		5394
4. Buff stick leather 6.0 mm wide with plexi-cover # 4056-6		1282-D 4056-6
5. Cloth (lint-free) Selvyt or micro-fiber		
6. Dial plastic protection		6938
7. Finger cots		
8. Hairspring collet removers		30013
9. Hammer, brass or brass & fiber		30416
10. Hands fitting tool (hand press or manual pushers)		7404
11. Knife with case opener		6403
12. Lever for hands (2.5 – 5.0 mm in width or similar)		30018
13. Loupe 3X or 4X		
14. Loupe 10X		
15. Movement Holders (Slick/Bergeon/Horotec) (Large)		4040
16. Movement holder- dial side 16 ½ ligne (for 6497)		5914 -1612
17. Oilers (plastic handle, spade tipped) small sizes Bergeon only (7013 preferred)		7013 or 30102
18. Oil cups, 4 (at least) with individual lids		30180-A
19. Oiler (automatic No 1A) Optional- If you use one, bring it.		2718-1A
20. Pegwood, Ø 3 mm or Ø 4 mm		
21. Pithwood (circular wheels)		
22 .Gravers- 2 Carbide Blanks (Handles are optional)	MSC# 04120077 (6")	OR Casker #360.110 (3 ")

