AMERICAN WATCHMAKERS & CLOCKMAKERS INSTITUTE
HARRISON, OHIO
Course Outline

Precision Timing and Dynamic Poising

(Also a preparatory course for the AWCI CW exam)

I. Course objectives

- **The purpose** of this course is to teach the student most common causes of timing errors and methods of correcting them. Performing precision timing exercises, including staffing, static & dynamic poising.
- **Prerequisites:** Having a minimum of five (5) years in mechanical watch repair, or Instructor approval.
- *Reading Chapter 7 of The Theory of Horology prior to attending the course is recommended.*
- **Length of course:** Monday - Thursday 8:00 a.m. – 5:00 p.m. & Friday 8:00 a.m.- 3:00 p.m.

More specifically, the student will learn about:

1. Static poising
2. Hairspring manipulations and adjustments
3. Theory & function of the regulator pins (traditional and ETACHRON)
4. Dynamic poising
5. Timing adjustments and analysis (five positions and amplitude in two states of power)
6. Other practical exercises as time allows.

Essential materials for the student to bring along

For **all** AWCI courses, AWCI will provide cleaning machines and solutions. Hand-tools should be provided by the student. Lathes, staking tools, poising tools and truing calipers etc will be available, but students should provide their own wherever possible. Ownership of quality hand tools is an expectation of a **Professional Watchmaker.** The brand names mentioned below are 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. You will notice that in some instances, we have listed more than one type of tool below-this indicates you may bring the tool of your preference.

A listing of recommended hand tools follows:

Updated, 6/24/2007 10:46:53 PM **R[1]**: Required **R[2]**: Recommended **O:** Optional

Precision Timing & Dynamic Poising
TOOL LIST

Description	Bergeon	Other Brands	R[1]	R[2]	O
1. Acrylic square block, 15mm x 30 mm x 50mm (prepared by candidate in advance)	hand made project				X
2. Apertured brass plate for balance 35 mm	30106			X	
3. Arkansas slip (triangular or square) 85mm x 7 mm (apprx)				X	
4. Bench Block (anvil)					X
5. Benzene glass jar (small) O 60 mm (or smaller)					X
6. Brush (small)	1300-6		X		
7. Carbide rod (O I or 1.5mm or pivot drill 0.25mm tip to cut balance during poising)			X		
8. Dust-blower (rubber)		A.F.l8666	X		
9. Files (assortment of precision needle/escapement files)					X
10. Hammer (Brass or Brass & Fiber)	30416		X		
11. Knife with case opener	6403		X		
12. Levers for hairspring collets, 1.7 mm (polish the jaw surfaces to a smooth mirror sheen)	30013		X		
13. Loupe l0	4902-1	Bausch & Lomb		X	
14. Loupe 3 X or 4 X	4902-2.5	Bausch & Lomb	X		
15. Loupe 12 X A.F.		A.F. 17613		X	
16. Movement holder (Slick/Bergeon) (large)	4040		X		
17. Oilers (plastic handle, spade tipped) red (2 of each) (Bergeon Brand Only)	30102		X		
18. Pegwood, O3 mm.	6724-30		X		
19. Pin vise with double chucks (O- 3.2mm capacity, round hole)	5860		X		
20. Pith wood			X		
21. Plastic stick (apprx. 4 mm thick & 6 inches long)	6436		X		
22. Poising Tool					X
23. Rodico or Rub-off			X		
24. Roller table remover (polish the jaw surfaces to a smooth mirror sheen)	2810				X
25. Screwdrivers, watchmakers' *(e.g.* Bergeon, Star, Vaucher, Horotec etc.)			X		
26. Tray (with Plexiglas bell)	3508		X		
27. Truing calipers (Lyre style a.k.a. Levin calipers, preferably of vintage manufacture)	30548			X	
28. Truing caliper (figure 8 shaped)				X	
29. Tweezers, antimagnetic, No. 00 (for cap jewels) (x 1)					X
30. Tweezers, antimagnetic or carbon steel, No. 5 (x 2)	6671-5		X		
31. Tweezers, antimagnetic, No. 3 (x I) 6671-3	6671-3		X		
32. Tweezers, antimagnetic or carbon steel. (lx) Old pair of tweezers which will be reshaped in class)			X		
33. Watch paper				x	
34. Ziploc bags 2" x 2" (clear) approx 10					x