PHOTO LOG
Zeagler's Musical Instrument Repair/ Brian Falcon, Technician

afc2014023_02027_ph01
Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Worktable space, special tools of this skill-set; oils, gear, and gizmos to adjust, fix, recondition, and repair mostly but not invariably band instruments.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Jumble of replacement and spare parts, brass & nickel-plated. [DSC – 0063 is a related image]

afc2014023_02027_ph03
Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Establishing image, general photo, room & workplace, with Brian Falcon @ his workbench, larger power tools (including a belt-sander, dremmel, saw). Note the rack of cased instruments on the metal shelves in the rear, right corner of the image.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – The technician begins with an especially manufactured rectangle of dense, firm cork. This sheet of composite cork material is flexible and uniform. All of the "keys" of this instrument have been removed, cleaned, the worn pads removed and new ones installed with special glue. Meanwhile the "axle" pins, upon which the keys pivot when pressed, have been soaking in penetrating oil. They are visible in the clear plastic tray just above Brian's fingers in the photograph.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Rack of fittings, tiny pars, and specialized tools.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Wind instrument parts and pieces, brass and nickel plated; horns, valves, and flared bells. Also braces, conical tubes, slides, and receivers. [Related image – DSC 0010]

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Brian, reflecting on how to best proceed with this particular repair/refurbishment of the clarinet, at this moment.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – The tech holds the clarinet barrel section (this instrument "breaks" into component parts for carriage/storage) explaining that the new cork goes around the narrow, tapered edge. The cork strip is cut with a bevel, allowing the "wrap" to meet end-on-end with a smooth, strong join – the bevel and the trimming of the strip from the larger sheet is done with single edge razor blades (frequently replaced to guarantee sharpness). Note the juncture of Brian's thumb and forefinger.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Queue of band and other instruments in fitted carry-cases on metal shelf.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – A narrow strip of composition cork sheet (clue on one side) is fitted around the end of the clarinet tube, replacing a worn out older similar piece. The tech pressed the material into place, then trimmed it carefully to fit. This cork must be eventually shaped to provide a firm but not too tight "slip fit" for the instrument's assembly and disassembly.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – The section of clarinet is mounted on a small woodworking lathe. Then, the newly glued (the glue will take several days to cure, but it can be handled and worked almost immediately) cork gasket is braided down to its basic sloped contour. Although the thickness is just basic at this point, because the lathe spins quickly and smoothly, the cork is quite uniform.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – On the rapidly spinning wood lathe: the outside edge of a new, narrow strip of composite cork material gets a slight slant or bevel designed to accommodate joining once the clarinet has been rebuilt.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Once the cork strip has had glue applied to one side, pressed into place, generally shaped on a standard, small wood lathe, it is in the final phases hand-sanded to a "smooth" grip-tight fit.

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Individual sections of the instrument must hold together while playing yet "twist" apart into convenient parts when not in use – to be carried, repaired (or possibly replaced), shipped, or stored. Once all the steps involved in shaping the new cork have taken place, the final gasket is lightly lubricated with special grease.

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Establishing image, general photograph of the instrument technician at work at this bench.

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A special set of tools involving a rare earth magnet— (according to on-line sources, these things are "permanent magnets made from alloys of rare earth elements. Developed in the 1970s and '80s, rare-earth magnets are the strongest type of permanent magnets made, producing significantly stronger magnetic fields than other types such as ferrite or alnico magnets." Their pull is so strong that people working with them can have flesh badly pinched, even bones broken, by the powerful attraction.) ---

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – The freshly cleaned & rebuilt key is gently heated & shaped into its proper fit aligned with a corresponding tone

hole (tiny amounts of glue weeps from the cork/metal seam during this process but it's quickly cleaned away).

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Zeagler's Musical Instrument Repair/ Brian Falcon, Technician – Brian gently pushes on a key (with his middle finger); the cleaned and oil-soaked axle pin has been slipped into the rocker hinge just ahead of his bent fore-finger (in which he holds a spatula to wipe the join between the key & its new pad as it settles into the tone hole bored into the instrument's hard-wood shaft). The carefully tapered & now very lightly greased new cork is visible at the end of the dark tube.