

# GlueX FDC Phase 3 Preparation Work

December 17, 2009– v1.0  
(File: *phase3-work.tex*)

In order to better understand where we are in completing this list of goals, the following key is being used:

- Work completed. (0)
  - X – Work partially completed or in progress. (1)
  - Work not begun. (11)
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The items in this list were based on a teleconference between the FDC representatives at Jefferson Lab and the representatives of the Wire Chamber Lab at IUCF on Dec. 15, 2009. Meeting attendees: D.S. Carman, B. Crahen, B. Zihlmann, K. Solberg, A. Eads.

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- X 1). Daniel will make contact with Matt Shepherd in the IU Physics Department about acting as a liaison between IUCF and JLab. This idea was raised by the JLab folks as a possibility. IUCF Director Jim Musser also stated that he believed it was a good idea to have someone on the IU side as a visible partner in this project given the administrative changes taking place at IUCF.
- 2). Bill will take responsibility for coming up with a draft design for the comb sets to be mounted on the wire winding table. We all agreed that we do not need to consider a dimensionally stable material such as ceramic for these combs given that the frames are made from G10. However, we will require machining precision in the combs as they are used to define the wire-to-wire separation. The devices will have to be compatible with the existing layout and operation of the wire winder. A first design will be prepared and discussed at our next meeting.
- 3). Keith will provide a complete drawing of the wire winding table for Bill to use to move forward with the comb design.
- 4). We would like to measure the flatness of the existing strongback still at IUCF. This can be done by placing the strongback on a granite table and using a height gauge. Keith will look into this and let us know if he can complete the measurements.

5). Bill is looking into a better way to attach the wire frames to the strongback to ensure they are flat for attaching the wires. He has to ensure that the attachments do not interfere with the positioning of the wires. We plan to modify our existing fifth wire frame and attach it to the strong back and perform flatness measurements before the start of Phase 3 work.

6). We all agreed that use of the Moiré films for checking wire spacing should not be part of our plans moving forward (cool but useless).

7). For the soldering work, we would like to improve the tools available for Alan. We would suggest to replace the low magnification visor with an appropriate microscope (at least for final solder QA). Keith will check into availability of such devices at IUCF. We will talk at an upcoming meeting about an appropriate mounting system and swing arm for positioning above the wire frame.

8). Bill will look into the design of a weight to place on top of the boards before soldering to ensure the wires are flush with the boards. This system must not affect the wire tensions outside of our specified tolerances.

9). Bill will work to develop an ultrasonic cleaning system (with a suitable tank) for cleaning the wire frames after soldering work. Keith will check at IUCF to see if any parts and pieces for such a system are available. We will need to do a test of a wire frame to validate such a procedure.

10). We discussed modifications to the control box and replacement of the ancient computer on the wire winder. If IUCF will not pay for the replacement of the control box, we may have to live with it for the duration of the Phase 3 winding project. The computer is not so easily replaced as it has a fairly unique bus structure to accept the control cards. Keith will get some details of this system and pass it along to JLab so that we can see if we might have a suitable replacement available here.

11). We discussed the cleanliness of the Wire Chamber Lab and its temperature control. Keith will check into availability of funds from the Cancer Treatment Facility that also uses this space.

12). Before the circuit boards are sent out for manufacture, JLab will provide design drawings to IUCF for feedback and comment. During the redesign phase, we have agreed to include more wire sighting fiducials.

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