

# SHMS-HMS Users Group Newsletter

July 2012

Newsletter edited by:

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## SHMS-HMS User's Board News

The SHMS-HMS User's Board holds regular phone meetings to discuss status and progress of the 12 GeV Upgrade in Hall C, in particular the SHMS as well as physics and other matters associated with Hall C at 12 GeV. The last meeting of the 2011/2012 Board was on July 12<sup>th</sup>, 2012. The Hall C Summer Workshop was held June 22 and 23<sup>rd</sup>. The [agenda](#) is on the web and has links to all the talks.

Tanja Horn and John Arrington will rotate off the board in September. Three names have been put forward as candidates for election. If you have any suggestions for candidates send to any board member. At the end of August, an email ballot will be sent out.

If you have any comments, ideas, news, or suggestions on topics related to Hall C at 12 GeV, for instance, on the SHMS-HMS, workshop organization, new grants for 12 GeV physics, student detector projects, or ideas for physics or equipment we would like to hear from you. Simply contact any SHMS-HMS User's Board Member listed below. You could even be featured in the next issue of this newsletter!

*Members of the Board: John Arrington ([johna@anl.gov](mailto:johna@anl.gov)), Donal Day ([dbd@virginia.edu](mailto:dbd@virginia.edu)), Tanja Horn ([hornt@cua.edu](mailto:hornt@cua.edu)), Mark Jones([jones@jlab.org](mailto:jones@jlab.org)), Eric Christy ([christy@jlab.org](mailto:christy@jlab.org)) and Pete Markowitz ([markowit@fiu.edu](mailto:markowit@fiu.edu))*

*As a reminder the detector team is:*

<b>Contact</b>	<b>Institution</b>	<b>Current Project</b>
Howard Fenker	JLab, Hall C	12 GeV Assistant Project Manager
Donal Day	University of Virginia	Noble Gas Cerenkov
Dipangkar Dutta	Mississippi State University	Collimator
Tanja Horn	Catholic University of America	Aerogel Cerenkov
Garth Huber	University of Regina	Heavy Gas Cerenkov
Hamlet Mkrtchyan	NSL (Yerevan)	Calorimeter
Eric Christy Peter Monaghan	Hampton University	Drift Chambers
Ioana Niculescu	James Madison University	Scintillator Hodoscopes
Charles Perdrisat	College of William and Mary	Support Structure
Abdellah Amidouch Sam Danagoulian	North Carolina A&T	Quartz Hodoscope
Brad Sawatzky	JLab, Hall C	DAQ, Gas system

## **SHMS Project Update**

Detector construction for the Hall C Super High Momentum Spectrometer continues, with preparations started to aluminize and overcoat the mirror blanks for the heavy-gas Cerenkov counter. Winding of the third coil for the Q1 quadrupole magnet is complete. Soldering of the copper stabilizer to the superconducting SSC cable for the Q2, Q3 and dipole magnets continues, with the second major shipment of soldered production conductor having arrived at the magnet vendor. Production winding tooling for the dipole magnet is arriving at the vendor and being assembled. The sections of the support structure have arrived at JLab and are stored pending their move to Hall C after removal of Q-weak and the Short Orbit Spectrometer is complete. The first sections of the several hundred tons of Q2, Q3 and dipole magnet steel yokes have been cast and readied for final machining.

## **SHMS Detectors Update**

To facilitate the transition to and long-term operation of the new SHMS detectors in Hall C, a new organizational structure is being developed. This structure will include liaisons permanently stationed at JLab for each detector. The proposed liaisons are: Quartz detector : Dave Mack ; Scintillators : Patricia Solvignon; Drift chambers: Howard Fenker; Cerenkov gas detectors: Brad Sawatzky; Aerogel and Calorimeter: Yerevan. Presentations on the drift chambers, gas Cerenkov detectors and aerogel detectors were made at the Hall C Summer Workshop.

## Progress on SHMS Quartz bars (provided by Charles Perdrisat )

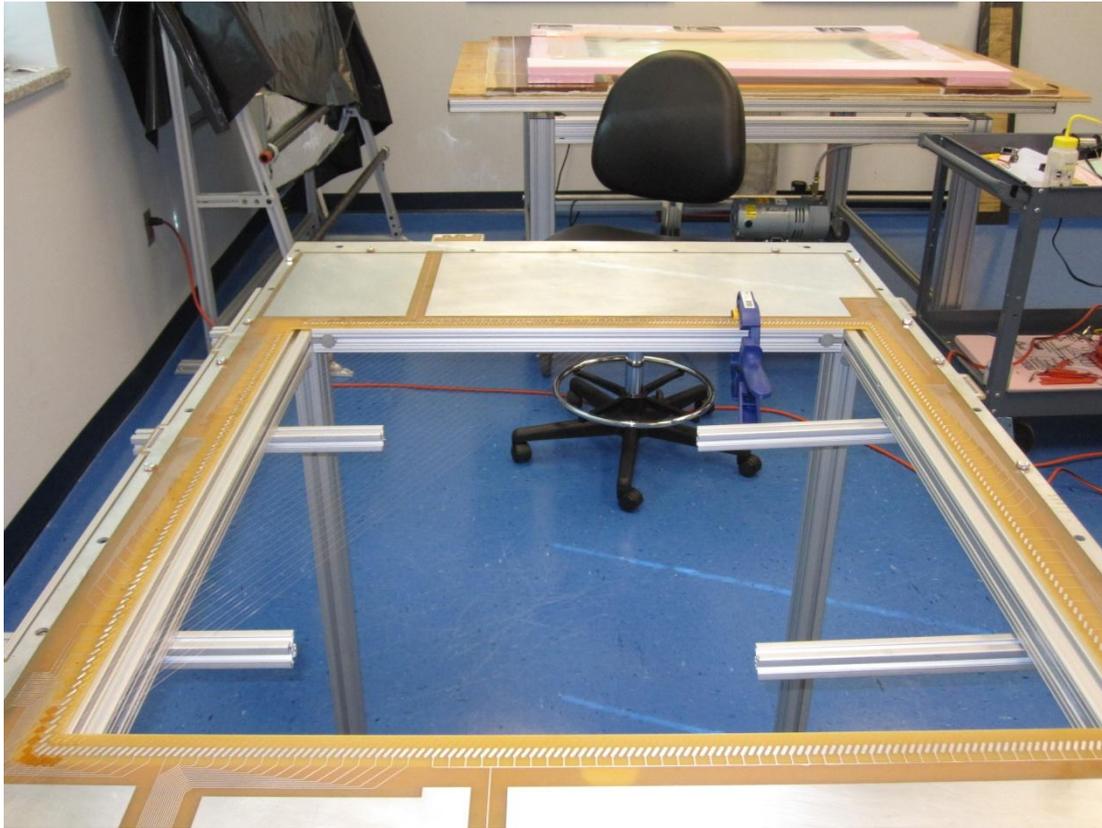
The design and construction of the rig to attach the base and PMT to the quartz bar has been completed. In Fig. 1 is a photo of the rig. A ring (labeled A1 in the photo) fits around the base (shown is location at label A2). Three long threaded rods are attached to this ring to the ring (shown in the location at label D3) at the face of the PMT which is secured to the quartz bar. The ring at the PMT face is shown at label B1. The pieces which clamp to the quartz bar are labeled C1. The pieces (C1) are attached by screws to the ring (B1). Two separate assemblies shown as D1 and D2 in the photo to show the two sides. The view of the assembly facing the quartz bar (D1) clearly shows the hose clamp that tightens the pieces to the quartz bar. A view from the PMT side of the assembly (D2) shows a cylindrical extension. The assembly is shown in place (D3) and the black housing that covers the PMT goes around the cylindrical extension.



Figure 1: Photo of the rig to attached the base and PMT to the quartz bar.

### **Progress on SHMS Drift Chambers (provided by N. Kalantarians & E. Christy )**

Base plates, gas windows, and boards have been received and assembly is ongoing. Two planes are worked on simultaneously for maximal efficiency, for instance, currently a u-plane and x-plane. The U-plane is 1/3 done. Graduates students are being trained. Fig 1 and 2 are photos on the U-plane being strung.



**Figure 2 Photo of U-plane about 1/3 strung with wires.**



**Figure 3 Detailed photo of U-plane is which the wires are more visible and the soldering of the wires to the board is clearly visible.**

### **Useful Weblinks**

Hall C Publications: <https://hallcweb.jlab.org/publications/>

Hall C Ph.D. Theses: [http://www1.jlab.org/ul/generic\\_reports/thesis.cfm](http://www1.jlab.org/ul/generic_reports/thesis.cfm)

Hall C Home Page: <http://www.jlab.org/Hall-C/>

Hall C Wiki: <https://hallcweb.jlab.org/wiki/>

Hall C 12 GeV Upgrade: <http://www.jlab.org/Hall-C/upgrade/>

SHMS-HMS Users Group: [http://www.jlab.org/Hall-C/upgrade/shms\\_users\\_group.html](http://www.jlab.org/Hall-C/upgrade/shms_users_group.html)

Previous Newsletters:  
[https://hallcweb.jlab.org/wiki/index.php/Newsletter\\_Listing\\_for\\_SHMS/HMS](https://hallcweb.jlab.org/wiki/index.php/Newsletter_Listing_for_SHMS/HMS)

Conference listing page: <http://cnr2.kent.edu/~manley/BRAGmeetings.html>