
Preparations for the spring run

Will have time for one beam energy, 2.2 GeV

Stepan Stepanyan
(JLAB)



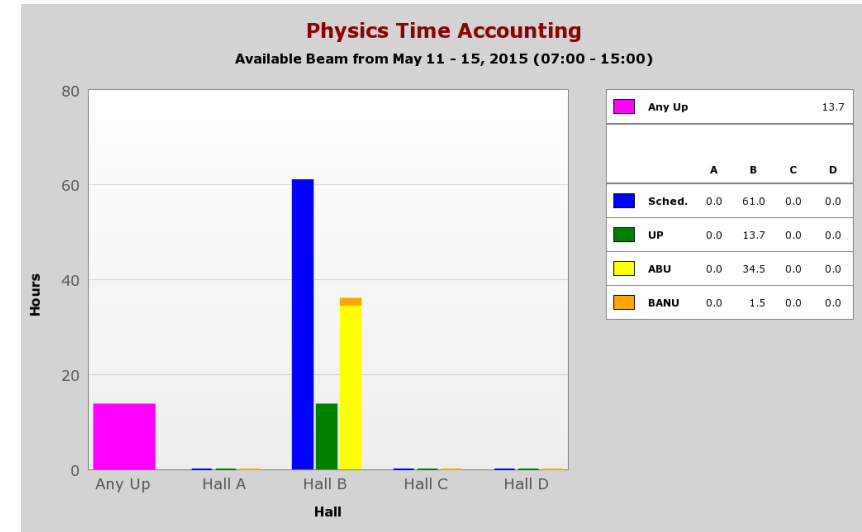
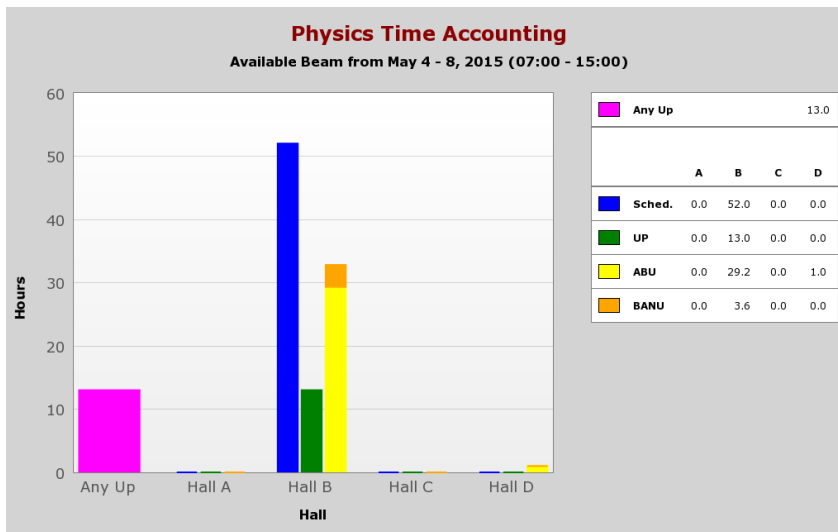
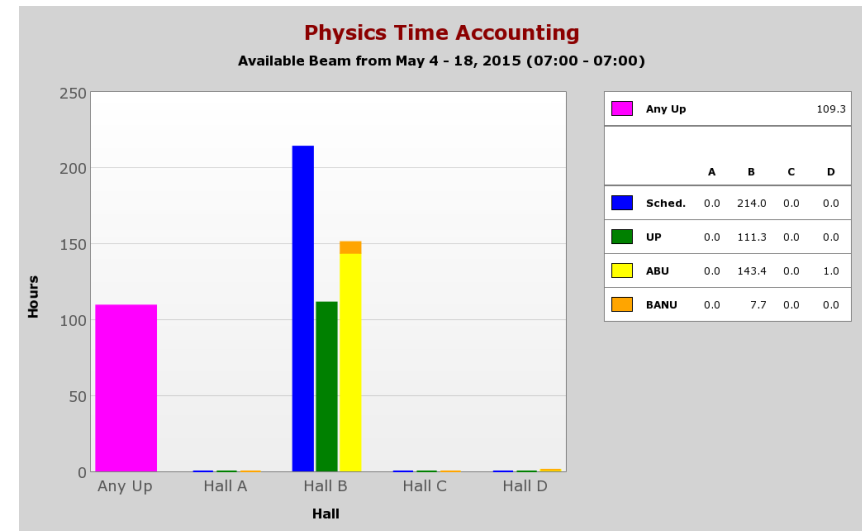
Spring run

- ❑ From Patrizia Rossi's talk
 - “Hope to run HPS in February
(but only weekends will be possible this time)”
- ❑ Great to be on the schedule, but this amounts 4 weekends only or ~5 PAC days by JLABs 50% efficiency definition and ...
- ❑ First weekend is right after only a week of the machine restoration and Halls A and D in priority
- ❑ Nov.-Dec. 2014 and March-April 2015 runs showed that the delivery of quality beams for HPS in multi-hall operations has issues – energy lock, bleed through, ... and ops does not have plans to address these issues before we start in February
- ❑ To make use of the beam, HPS needs calibrated BPMs and orbit locks. Last time it took 10 days to get above done, with running evenings/nights during the workweek and weekends



ABUs during May 4-18 extension

- 6 days of ABUs in two weeks of running as a single hall
- 2.7 days of which during evenings/nights in workweek
- 3.3 days over weekends – 1.65 ABUs per weekend



Run or not run or how to run

- Should work with the lab management to get run time that gives HPS a chance to get some physics out
- Shifts –
 - With only weekends total of 32 shifts (x2 for expert and worker) to fill, no need for participation of overseas collaborators
 - If successful to get arrangement as in May – evenings/nights during workweek and weekends and one more week (total of 5 weeks) there will be 90 shifts (x2 for expert and worker) will need everyone's help
- In any scenario run time will be limited – been a well organized and efficient will be the key for success
- May run was successful but was run with expert presence, cannot do it again with longer run time
- Detector will not change much operationally and we learned enough to have useful documentation for shifters to run efficiently



Documentation



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The HPS Run Wiki

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Phone Numbers

[Shift Schedule](#)

[Shift-Taker's Checklist](#)

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[Beam Time Accounting](#)

[HPS Run Spreadsheet](#)

Procedures

- Commissioning Plans:
 - Beamline
 - Beam Trips
 - Trigger (old)
 - ECal
 - SVT
- SVT TOSP (1,2,3)
- Tunnel/Hall Access
- Power Failure

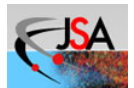
Manuals

- Harp Scans
- Beam Trip Runs
- SVT
- ECal (Annex)
- DAQ
- Beamline
 - Turning Chicane ON/OFF
 - Chicane Settings
- Slow Controls

JLab Logbooks

- [MCC](#)
- [Hall-A](#)
- [Hall-B](#)
- [Hall-C](#)
- [Hall-D](#)

- Too much and too long documents are not the optimal thing to have
- Many procedures were added in ad hoc way to fill holes in the manuals
- Should aim for short and complete documentation for shifters!



Improvements on beamline & slow controls

Musts:

- New SVT protection collimator with smaller holes
- Cleanup collimator before the first chicane magnet
- Better vacuum monitors (replace faulty gauges)

Likes:

- One-button setup for the chicane (ready?)
- Speed up the SVT wire scan
- Relocate, calibrate and use BLMs (may be increase their sensitivity by installing scintillator on photocathodes)
- Chicane power supplies in FSD
- Lower dead time on struck setup



Improvements

SVT, SVT-DAQ

- SVT restoration procedures – single button operation?
- Increase DAQ rate – 92% at 35 kHz (tested)
- Event size reduction ~86% (tested)
- Full DQM

ECAL

- Remove discriminators & T DCs – replace splitters, will increase signal on fADC (ready to go)
- Noise from HV modules - fixed

DAQ & Trigger

- Continuous transfer of data to tape silo (tested)
- Run DB – restore bgn/end run records
- Run pause ?
- Simulation of 2.2 GeV trigger setup(s)



Calibration runs

Not much calibration data were taken during the May run

- Luminosity scans – at 2.2 GeV beam current will be ~ 200 nA. BPMs become reliable above 30nA, can make several points to understand trigger/DAQ/ECal performances (SVT?)
- Empty target runs, how often and how long
- No field data – how often and how long, procedures
- Anything else –
 - different beam position
 - different chicane settings (impact angle, position)

Clearly need a run plan



Summary

- ❑ Presented draft schedule does not give much hope for HPS physics running, must work with the lab management to get running during workweek and one week more, with the usual agreement that the 12 GeV has a priority for the hall
- ❑ With only weekends we should think hard how to run, what will be our goals, promising physics will not be reasonable unreasonable
- ❑ Note - the run will take considerable amount of efforts from people who are doing analysis of data and writing the papers
- ❑ Efficiency of running shifts is important especially when run time is limited and hence good documentation for shifters is essential
- ❑ Number of improvements to the detectors and DAQ are underway (or already done), these should improve quality of data
- ❑ Must engage early on with accelerator ops to get beam controls and monitors calibrated and ready on day one

