The View From Operations

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Outline

- Machine Issues
- Apex
- Communication
- The Climate for Operators
- Operational Competence and Efficiency
- Miscellaneous/Recurring Issues

Machine Issues

- **Sextupole trips due to ramp rates (dI/dt)**
  - Numerous trips led to substantial downtime
  - Downtime spread over several months
    - *Should be prevented altogether or at least effectively (quickly) remedied in the future*
- **Speaking of power supplies… modeswitching behind 20 minute stores**
  - Limited amount of development time is accompanied by risk
  - Supplies often trip off, come back in a different state or don't come back at all
  - Delays were seen in refilling RHIC (even with Zeno)
    - *Ideally should have a ½ hour buffer before dump time*
      - This would allow ample time for troubleshooting (if necessary) or time for fine tuning if all goes well

APEX

- **APEX from home**
  - Should be avoided if at all possible
  - QLI due to poor communication during APEX from home
  - Inefficient at best; crippling at worst
    - *Feasible if MCR retains control and a liaison physicist is in MCR*
  - Controlling machines using a personal internet connection should be reserved for special situations (troubleshooting etc.)
- **Recovery from APEX**
  - MCR has for the most part easily recovered from APEX
  - Thanks to those who revert all changes
  - Still a few rough patches though
  - A reminder to please leave the machine as you found it and also to stick to your allotted time schedule

Communication

- **Communicating with MCR solely through the elog is inefficient and often insufficient**
  - *If you need/want something quickly, call the MCR then **log** as a backup (and so others know what is going on)*
- **Any relevant parameter change must be preceded by communication with MCR and then logged for others**
- **Plan of the day is often not up to date, and communication with MCR is lacking in general**
  - Most operators have no idea what is planned for a given week/day, this is not ***wholly*** the operator's fault
    - The people running the machines are often informed last
    - Better communication is needed, whether written or verbal
    - Information dispersed in meetings should consistently trickle down to operators in some form (that is effective/reliable)
      - *Operators could receive the relevant minutes of the meetings, for instance, as a standard step in the process of commemorating the meetings*

The Climate for Operators

- **Prevailing mentality: physicists should re-configure RHIC/ATR whenever necessary while operators are responsible for mindless daily button pushing**
  - Configurations are often cryptic to Operators/O.C.'s
  - Tuning/scanning of settings is discouraged rather than encouraged
  - Lack of confidence in operators fosters passiveness
- **Operators must be allowed to perform duties and exercise appropriate judgement**
  - Operators are paid to efficiently/safely **run** the machines
  - Physicists/Specialists/O.C.'s need to invest more faith (within reason) and let operators do their job if they want more competent operators
- **Better 'informal' operator training/involvement is needed**
  - Lack of invitation to meetings/retreat attests to the perceived exclusionary atmosphere described here
  - It is understood that this isn’t high school; operators shouldn’t expect to be led by the hand and forcibly involved with activities. But they do need more support and mentoring nonetheless…

Operational Competence/Efficiency

- **On-shift training is paramount**
  - Operator training requires help from *all* sources
  - Physicists, Machine Specialists and O.C.'s are key
  - Most operators will only be as good as their mentoring
  - Everyone has a responsibility to help improve operator prowess/knowledge
    - *Involve the operators in experiments and/or general 'tuning' as much as possible in the MCR*
    - *Explain concepts in a clear and professional manner*
    - *A basic understanding is infinitely better than no understanding*
- **Missed TAPE popups compound into wasted time**
  - The best operators will miss a popup occasionally, the worst miss them often and the effect is not negligible
  - This is a known tripwire, but an agreeable solution has still not been implemented
    - *Audible alert has been discussed but not implemented*

Miscellaneous/Recurring Issues

- **Reluctance in allowing MCR staff to tune at store**
  - Especially in the case of low energy stores
- **Communication with experiments**
  - Different shift crews have varying background targets
  - Difficult for MCR to discern legitimate issues from frivolous concerns
  - Experiments and/or MCR should be trained to an equivalent standard such that backgrounds are interpreted correctly
- **Number of temporary and/or special rules often rivals the number of standard tasks/procedures**
- **Minimal operator involvement in tuning the A.G.S.**
- **RHICInjection orbit/phase/field correction should work properly (i.e. during low energy runs)**
- **PASS behavior is still occasionally erratic**
- **Conflicting instructions/explanations**

Conclusions

- Progress has been made over the past few runs with regard to effective collaboration between physicists and MCR
- Prowess among operators is generally lacking, and will continue to suffer without help from seasoned personnel
- Communication needs to be clear and consistent, and relevant changes/configurations must be documented
- APEX downtime has been minimal this run but dedicating machine time to home-based experiments has proven risky
- Thanks to all our colleagues who help make life easier. We appreciate your help, support and guidance. We look forward to continued success