2007-8 MINOS Shift Proposal

Alec Habig, incoming Run Coordinator
University of Minnesota-Duluth
Cat James, outgoing Run Coordinator
Fermilab
Alfons Weber, IB Chair
Oxford University

September 11, 2007

1   Existing Scheme

The MINOS detector is operated by four overlapping 7 hour shifts per day in the MINOS control room on the 12th floor of Wilson hall. These shifts must be filled for the NuMI beam to operate. There are also shifts available at the Soudan Mine, but these do not need to be filled to operate, and in practice something around a quarter of open Soudan shifts are taken. All shifts have been a week long. See `http://www-numi.fnal.gov/collab/ib/shiftrules_2006.pdf` for full details of the existing scheme.

2   Proposed Changes

The following changes to the previous shift scheme are proposed, based on discussions at the June 2007 Week in the Woods IB meeting where a consensus was reached by straw poll that these would be good ideas to implement.

Two shifts per week   Past control room shifts had been a week long (or the five working days, 10 hours long for Soudan shifts). It is proposed that control room shifts be scheduled in two blocks per week to allow shifters more flexibility, with one shift being the three weekend days (Friday, Saturday, Sunday) and the other being the four weekdays (Monday, Tuesday, Wednesday, Thursday). Shifters are certainly encouraged to sign up for multiple contiguous blocks to save travel money. Soudan shifts would remain unchanged, but credit would be renormalized for them to two of these new shifts for the Soudan week.

One feature of the previous shift scheme will be lost with this change – staggered shifts to ensure that subsequent shifts are not filled by new shifters on the same day. Staggering 3+4 day shifts makes for a very complicated schedule that is bound to cause scheduling problems, and defeats the purpose of having weekend-only shifts available for collaborators with teaching duties. So, all four shifts will now start on Mondays and Fridays. The experiment is mature enough and nearly all shifters experienced enough that potential information transfer problems caused by non-staggered shifts can be worked around.

Note, however – this makes it even more important that shift workers know what they are doing. To sit a shift alone the shifter must understand how the both MINOS detectors and the NuMI beam work and what to do if troubles arise. While this knowledge and the shift responsibilities are spelled out in the shift documentation, on the job training alone is NOT ACCEPTABLE. New shifters especially (or existing collaborators who haven't done shifts in a while) should arrange to sit in with an experienced shifter before flying solo for shift credit, lest the problems occur on their first shift while they're still figuring things out.

Shift Credit Carryover   To encourage institutions to take their full quota and reward those who take extra shifts, it is proposed to carry over an institution's excess or deficit shifts from the current shift period to the next shift year's quota, up to a maximum of 20% of the institution's quota. This maximum shall be at least 1.0 to allow small institutions the opportunity to have a meaningfull carryover. This is in effect for the coming shift year, 2006-7 numbers will not be applied to 2007-8.

Enforcement   Although it has thankfully not yet occurred, the IB thought it wise to specify that in event of a scheduled shift going unfilled, the spokespeople be given the latitude to issue sanctions for such shift no-shows, up to the suspension of authorship. This is at the discretion of the spokesfolk, who can certainly take into account unavoidable emergencies etc.

Filling Empty Shifts   There has been near universal support for the long-approved but seldom implemented idea of drafting institutions with the lowest shift completion fraction to fill empty shifts, provided that it is done with enough notice for the draftee to either make travel plans or to trade the shift away. This shift period will see strict enforcement of this policy, with the PI from the drafted institution being entered onto the shift calendar. The PI thus has the responsibility to fill that shift personally, coerce a colleague to do so, or find a collaborator from another institution who is willing to trade shifts.

The "lowest completion fraction" is defined as the fraction of an institution's quota currently signed up for in the whole current shift year. The mechanism of the draft will be to assign the first empty shift to the lowest fraction, and recalculate the statistics. The second empty shift will be assigned to the new lowest institution (which might or might not be the same institution, depending on if their new shift pushed their fraction high enough not to be in last place anymore), statistics recalculated, repeat until the quarter's schedule is full. Note that the first quarter to be filled each year will not have good statistics yet from the current year for who is the lowest in the draft order, so the numbers and drafting mechanism will use the statistics from the previous year instead.

One administrative change to the way this is implemented is proposed (this has not been formally voted on, but in discussions people have seemed to like it). Rather than handle the drafting as a rolling deadline (ie, always looking six weeks out on the schedule for empty shifts), it is proposed to concentrate peoples' shift planning (and the Run Coordinator's administrative work) into quarter-sized blocks. For example, all the shifts in the January–March quarter will be filled by mid-November, with reminders and discussions happening in the first half of November. Come mid-November any necessary drafting will occur for that quarter, allowing plenty of time for draftees to make plans.

Note that people who really like to plan ahead (so they can take shifts during academic breaks, for example) can always sign up well in advance. This shift-signup for the quarter scheme is to ensure that shifts are set for the impending quarter.