WHO ANSWERS THE PHONE AT EXTENSION 3333?

Operations Center Staff

Almost anyone who has been to Fermilab has seen the Laboratory Operations Center in its conspicuous location just east of the atrium in the Central Laboratory Building. Nearly as many are aware of the video display of the main-ring ramp and beam intensities that the Operations Center Group distributes on the Laboratory-wide closed-circuit cable television system (Channel 13). The members of the Fermilab staff on duty at the Operations Center on a round-the-clock basis are the Operations Coordinators, who are known to experimenters as their agents for contact with Accelerator Operations and as a source of technical information about the Laboratory and its research program. Despite the Center's visibility and a reasonably detailed treatment of its services and functions in the Procedures for Experimenters booklet, many experimenters have remained rather unfamiliar with the functions of the Operations Center Group. A discussion of these functions may serve, it is hoped not only to introduce those that are less familiar but also to account for the practices the Operations Coordinators have evolved in handling the responsibilities of their role.

The fundamental mission of the Operations Center Group is to implement the Current Operations Schedule developed at the weekly Experimental Planning Meeting and to document quantitatively the actual course of the research program. The responsibility for carrying out this mission on a shift-by-shift basis falls to the Operations Coordinator, and even though his approach to implementation is usually limited to communication

and coordination, the multitude of activities that must be handled and dispatched systematically to realize the intended program involves him in a wide variety of actions. Even under ideal running conditions, the duties at the Operations Desk at times require responses at a hectic pace. Given the unpredictability of high-energy physics experimentation and the less-than-perfect reliability of the complex hardware systems that make up the accelerator and each user group's experimental apparatus, the status of the overall program is subject to change at any moment. The Operations Coordinator must therefore be alert to the current situation at all times and prepared to make appropriate changes in running conditions and the program as required. A complicated series of decisions and actions is often required to discharge his basically simple mission and complete success in this endeavor is rarely, if ever, achieved. Thus the Operations Coordinator must judge his success in the vague, relative terms of how much he helps to minimize the effect of the unscheduled but inevitable problems that arise in running the Fermilab research program.

For the greater part of his time, the on-duty Operations Coordinator can be found at the Operations Desk in the Center. From this vantage point he seeks to keep the running experimenters informed of present and impending developments within the Laboratory by providing notices of immediate significance on CCTV Channel 13 and the schedule channel, Channel 12. The latter is used to publicize information of future or continuing effect and includes an up-to-date version of the operating program schedule. If he becomes aware of developments that may be especially important for a particular experiment or experiments, he will usually try to pass such news

along by telephone. He also attempts to maintain an awareness of the current intensity and beam-quality parameters in the various areas in order to call problems to the attention of the accelerator operators and also to judge, for record-keeping purposes, whether or not the beam is up to the requirements of the several experiments. Experimenters frequently call to request information about operating parameters or for detailed information on accelerator status and the prospects for short- or long-term future running. Calls are also made to draw attention to problems with the delivered beam. The Coordinator informs the accelerator main control room of these problems or deviations from desired running conditions, taking into account the priority of activities and mutual compatability of experimenters' desires. If an experimenter wants a change in the intensity or position of the primary beam, his request is properly made through the area Crew Chief who will then seek out the opinions of other users in that area. If by mistake the experimenter does call the Operations Center directly, the area Crew Chief is first contacted to avoid possible conflicts. A canvass of affected experimenters will then be arranged to be carried out by either the Operations Coordinator or the area Crew Chief, depending on who has the better opportunity.

When the beam goes off for some reason that is not evident from the monitoring instruments at the Center, the Operations Coordinator lets people know the cause as soon as he can ascertain it. Inasmuch as the accelerator operators themselves may not instantly know what has happened and furthermore are often likely to get somewhat involved in trying to diagnose the problem, the Coordinator normally waits about three minutes before

calling the main control room to request a report on what is happening. This gesture toward reducing the harassment of the accelerator operators sometimes leads to a brief delay in posting the precise nature of the failure and its probable duration, but it is believed that experimenters can normally easily tolerate such a delay. For this reason, calls to the Operations Desk within three minutes after the beam goes off will usually not yield much useful information. It should be emphasized here that the Coordinator does attempt within the three minutes to make a preliminary report, noting the system or area in difficulty if he can, based on his own monitoring capability or any clues that he may pick up while waiting to hear from the main control room. This frequently leads to a series of updated messages and estimates as diagnosis and repairs progress. Downtime estimates are based on reports from Accelerator Operations, the Coordinator's own knowledge about the trouble and his past experience with similar failures.

In addition to maintaining a log book and the worksheets that document the minute-by-minute progress of the research program, the Operations Coordinator prepares a JIM recording (Ext. 3546) at least once per shift (more often when the situation is changing rapidly) that summarizes the current schedule, accelerator status and progress on the physics research program. He is also called upon to respond to any number of situations that arise and that could be categorized as emergencies. These range from checking out PREP electronics equipment during "off hours" to Laboratory staff or visiting experimenters, in accordance with current research program requirements, or monitoring FIRUS utility-system alarms and

power-usage readings to providing technical direction and information to the Fermilab Emergency Coordinator when a serious incident, such as a fire, explosion, personal injury, radiation accident, etc., occurs on site that impacts on or is affected by continued running of the research program. In such instances, the Operations Coordinator is empowered to modify or shut down the program, if in his judgment the situation makes such an action advisable. In other words, he is the "front-line" person on site at any given time charged with the responsibility of coordinating and directing the overall aspects of the Fermilab research program effort.

Experimenters frequently question the location of the Operations Center in the Central Laboratory as opposed to the Cross Gallery where the Coordinator would have more direct knowledge of accelerator running conditions and closer contact with the accelerator crew. Indeed, during accelerator startup and other periods when accelerator operation is highly variable, the Operations Coordinator often moves into the main control room where he can keep up with developments and still handle his telephone and television communications. Such a relocation is one of the reasons that, despite the assertion in the Procedures for Experimenters that the Operations Center is manned around-the-clock, the atrium location is sometimes deserted. Business in the experimental areas may also draw the Coordinator away from his regular post. In this case, people calling the Operations Desk extension may find their call answered by the Fermilab telephone switchboard operator or relayed by a somewhat awkward radio-telephone system that requires a bit of patience for any detailed conversation. In either event,

once contact has been made, the Coordinator is alerted and will follow up on any unfinished business. Under some circumstances, particularly when he expects to be away from the desk for a limited time, it may be necessary to page him via the radio paging system (Pageboy number 279). If his responsibility were narrowly defined to be simply the expediting of experimenters' communications with the main control room, the Coordinator would doubtless do best by spending all his time there. In terms of the experimenters' and the Laboratory's long-term interests however, it is felt that the primary emphasis of the Operations Coordinator's effort ought not to be related to Accelerator Operations and its problems. Without minimizing the importance of this interaction, he should nevertheless be even more sensitive to and knowledgeable about developments in the experimental areas. He must be prepared to make appropriate priority decisions that reflect the Laboratory's research policy and physics-program objectives, taking into account the overall ability to carry out that program in the most efficient and effective way at any given moment.

Because of this broader commitment to both understanding and facilitating the progress of the research program, the Operations Coordinator may also leave the Operations Desk to visit running experiments, either to deal directly with an experimenters who is particularly affected by a current problem or simply to improve his knowledge and information on running experiments. Time for visiting the experiments is more likely to be available during the early morning hours and is associated in many experimenters' minds with the gathering of information for the "Morning Report" which the

Operations Coordinator writes on weekdays. The intention in having the Coordinators familiar with the experimental areas, the experiments, and the experimenters is actually more general, however. The experimenter who takes the time to discuss his special problems and particular requirements is likely to find either at that time or later that the Operations Coordinator can provide help by alerting accelerator operators to the problem, by recommending consultation with an expert from the Laboratory staff, or by paying close attention to some particular monitor or beam property or special concern to the user.

With the experiments as numerous and dispersed as they are, it is natural that the Operations Coordinator's information on the current situation may, in some aspects, at times be a bit stale. Because the Operations Center is the most general and available source of information for the directorate, timely contributions from the experimenters may help to promote informed program planning. Accurate information also reduces the chance of confusion and the lost time that can result when one of the laboratory's support groups makes an improper or even a wrong response to a need for assistance, based on outdated information on the status of the research program.

As individuals the Operations Coordinators are usually holders of a Bachelors or Masters degree in physics with a variety of specialties; some are continuing their formal education and training. Their involvement as part-time participants in the physics-research program or working on projects of personal interest in other technical areas, which is done on their

own time over and above their normal work assignments, gives them sympathy for the experimenters' needs and a degree of immunity from bureaucratic tendencies. The maturing of these interests has led to some turnover in the group, since several of the original members of the Operations Center staff have moved to other jobs within Fermilab. This turnover has, in fact, been a favorable development at the level evidenced to date because it has resulted in a group that appeals to capable and imaginative people, thereby holding out the chance that the Operations Center can continue to deal with experimenters needs in a flexible, informed, and yet responsive way. Furthermore, an improvement in communications and a better understanding of specific operational problems has resulted from interacting with Operations Center "alumni" in other operating departments.

The generality of its mission and the fact that its primary role is to coordinate the work of carrying out the Laboratory's physics-research program on a day-by-day basis between the Accelerator and Research Divisions accounts for the placement of the Operations Center as a management function within the Directorate of Fermilab. The Operations Center Group is one portion of the Operations Section under Halsey Allen, which also currently includes the Communications Center and the Operations-Plant Support staff who are responsible for utility systems and physical-plant equipment that relate closely with the ongoing program of the Laboratory. Because of their shared responsibility for twenty-four hour a day coverage of emergency response and program progress, the Communications Center and Operations Center personnel and duties have recently become fairly well integrated, and

this trend is expected to evolve even further as time goes on. Jim MacLachlan is Halsey Allen's deputy in charge of the Operations Center Group and its activities and Dee Ray serves as secretary for the office. Other members of the Centers' staff include Anthony Malensek, Bryant Henry, Paul Brindza, Dave Burkhart, Ken Shafer, and Ed Stout. These are the people who answer the phone when you dial extension 3333. They are continually striving to learn some new aspect of Fermilab geography, support services, user roster, program status or any one of the countless other facts that may be the exact piece of information you need at any given moment to carry out effectively your own objectives in the Fermilab research effort.