

Physics Options Weighed in Light of Budget Cuts

Hobson's choice. An apparent freedom of choice with no real alternative. [After Thomas Hobson (died 1631), English liveryman, who required his customers to take whatever horse they wanted, as long as it was the next available horse.]

“What is the best way to get by doing the best physics we can do?”

That was the question posed by Fermilab Director John Peoples at a Special All-Experimenters' Meeting held on the afternoon of November 29 in Ramsey Auditorium. The question was necessitated by apparent FY90 funding cuts, which pose a Hobson's choice for Fermilab's physics program, a program that Fermilab Users Executive Committee (UEC) Chairman Raymond Brock characterized at the meeting as “the best and most balanced in the world.” These cuts result from the automatic imposition of 5.3 percent Gramm-Rudman-Hollings (GRH) budget reductions on all federally-funded programs.

The answer will come from Fermilab management, which is seeking counsel from experimenters at meetings such as the one on the 29th and others on December 4 and 11, and from the Physics Advisory Committee (PAC), which will meet in special session on December 14 and 15.

At last week's meeting, Fermilab Deputy Director Ken Stanfield outlined the Lab's projected FY90 budget, and then presented three budget-impacted scenarios for the '90-'91 fixed-target and Collider runs. Following Stanfield, the UEC and representatives from several of the Lab's experiments posed their initial responses to the scenarios.

In August of '89, prior to GRH, Fermilab had tentatively scheduled fixed-target physics for January through June of 1990, and October '90 through January '91, for a total of 9-1/2 months. This was based on an anticipated FY90 budget allocation some \$12 million above the Lab's FY89 budget. The reduced FY90 budget lopped approximately \$11 million off Laboratory funding. The final number for FY90 awaits possible upward adjustment by the White House and disbursement of any replaced funds to various programs by the Department of Energy.

In the event that the final FY90 budget receives the anticipated additional funds, candidates for these funds (in no particular order) are a July fixed-target run, additional support for incomplete fixed-target detectors (E-771, E-789, E-791) for the upcoming run, restored support for computing resources, and support for D0 and CDF.

The search for ways to make up for at least a part of the shortfall led to the three alternative scenarios for the FY90-91 physics schedule. These scenarios have the following assumptions in common:

- The fixed-target program proposed in August '89 required \$5.2 million more in power costs than was expended for the FY89 Collider run (Collider runs use less power than fixed-target runs).
- Less running time in FY90 compared to the August schedule, thereby saving at least \$3 million in power in FY90.
- Reduction in staff relative to what was planned, for a savings of at least \$3.8 million, is thought to be achieved through attrition and re-

duction in new hires.

- Additional cuts totaling \$7 million in power and/or program reductions are necessary.

The three scenarios:

- **Scenario #1** posits a 4-1/2-month fixed-target run starting in mid-February of 1990, followed by a one-month open period which would be used for running if additional funds could be obtained, a two-month period for accelerator maintenance and low-beta installation, a five-month continuation of the fixed-target program through February of 1991, roll-in of the Collider Detector at Fermilab (CDF) and the partially completed D0 Experiment detector beginning in May of '91, and a Collider program in the rest of '91 with a halt to install the remainder of D0.

This scenario allows the fixed-target program to be resumed promptly and completes it as quickly as possible. It minimizes the delay in resuming the Collider program, although it can only be resumed promptly with the CDF detector. It does this by postponing the expenditure of funds for completing and installing the newer initiatives until after October 1990. In particular, the D0 Experiment will be delayed until October of 1991.

The completion of some of the more recently approved fixed-target experiments, principally the heavy-flavor experiments, will be delayed until 1991, thus denying them the chance of running in 1991. Scenario #1 favors the fixed-target experiments that are ready to run.

- **Scenario #2** also begins fixed-target running in February of '90

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Leipziger Bach-Collegium Brings Baroque Music to Ramsey Auditorium

"The playing of the **Leipziger Bach-Collegium** caressed the ears of the audience." Superbly performed Baroque music is the fare when the seven-member Leipziger Bach-Collegium under the direction of trumpet virtuoso Ludwig Guttler performs in Fermilab's Ramsey Auditorium on Saturday, January 13, 1990, at 8:00 p.m. This marks the Leipziger Bach-Collegium's debut tour in the United States, and their only Chicago-area appearance.

Ludwig Guttler formed the Leipziger Bach-Collegium in 1976 in order to concentrate on the performance of Baroque and early

Classical music. These distinguished musicians, who are also members of the Gewandhaus Orchestra, include Karl-Heinz Passin on flute, Klaus-Peter Gutz on oboe, Eberhard Palm on violin, Matthias Pfaender on cello, Hans-Jurgen Schmidt on double bass, and Friedrich Kircheis on harpsichord, in addition to Maestro Guttler. Guttler has done extensive repertoire research in the palace libraries and archives of Germany, and consequently has re-discovered many works for trumpet and chamber ensemble, such as the Sonata in C Major for Trumpet, Oboe and Continuo by Gottfried Finger. Guttler

has chosen to perform this work along with trio sonatas, concerti, quartets and quintets by the composers Georg Philipp Telemann, Arcangelo Corelli, J.S. Bach, J.C. Bach, and Tommaso Albinoni.

There is a \$13 admission to hear Ludwig Guttler, "the newest god of the trumpet," and the Leipziger Bach-Collegium at Fermilab. Reserve your tickets by calling ext. ARTS weekdays between 10:00 a.m. and 12:00 noon, or 1:00 and 4:00 p.m. Phone reservations are held for five days, but due to ticket demand those not paid for within five working days will be released for sale. - *Tammy Kikta*

Facilities Request Form a Must

A Facilities Request Form (referred to as a "blue form") must be completed for the following:

- Use of the Village Barn
- Use of a conference room which requires special setup.
- Vendor presentations.
- Food and beverage arrangements.
- Additional equipment/services such as audio visual, traffic control, parking signs, etc.

The form must be completed and received in the Accommodations Office, MS 322, two weeks prior to the event, or the event will not be approved. The form must be approved by your Division or Section Head before the form is sent to the Accommodations Office, which will then route the form to the appropriate offices for approval. All forms require approval by the Director's Office.

Events which incur cost (i.e., food or beverages) must indicate the budget code to which the cost will be charged. The Cafeteria will not charge food or beverages to a budget code without Director's Office approval. Forms can be obtained from the Accommodations Office, M.S. 322, ext. 3082.

To check on availability of the Village Barn, please phone the Accommodations Office, extension 3082. The barn will not be reserved until the Facilities Request form has been received.

Please phone Marilyn Rice in the Director's Office, ext. 3211, to reserve the Auditorium, Conference Rooms (Black Hole, Comitium, Curia II, 1West, Snake Pit), and the Small Dining Room.

If you have any questions regarding the use of this form, please phone Jean Lemke, ext. 3211.

- *Jean Lemke*



As part of Fermilab's Distinguished Lecturers Series, Jack Steinberger of CERN will present a Special Colloquium entitled "Results at LEP in ALEPH" on December 21, 1989, at 4:00 p.m. in Ramsey Auditorium.

"Wellness" Works

Great American Smokeout

The 13th annual Great American Smokeout was observed on November 16th. Fermilab employees were encouraged to give up smoking for the day or help a friend quit. Smokers could pick up a pack of sugarless gum and some quitting tips at a table set up in the Atrium lobby.

The Wellness Works Committee thanks everyone for their participation and hopes that some who quit for the day will join the 40 million Americans who have quit for good. - *Paula Cashin*

← *Karin Etter (l.) presents Laurie Loebel with the turkey she won in the Great American Smokeout "cold turkey" raffle.*

Security Subjects

Deer Alert!

Fermilab's wildlife population, including deer, provides a unique and interesting sidelight to working at the Lab. Unfortunately, wildlife also provides numerous opportunities for accidents and collisions. Our primary concern at this time of the year is with the deer. Twelve collisions involving cars and deer have already been reported this fall. (Last year we had about 25 during the fall/winter season, and about 27 the year before.) Human injuries do not often result from these collisions, but injuries are certainly possible. The damage to vehicles can be extensive.

Most of these collisions seem to happen when people are driving to and from work, which is the same

“Budget” cont'd from page 1 and ends it in June of '90, but does not resume the fixed-target run until February of '91 for five months following a six-month shutdown and accelerator installation period (for the low-beta insertions and new separators needed to increase luminosity to the Collider experiments). The Collider run would begin in October of '91 following completion of the low-beta insertion, studies, and D0 and CDF roll-in.

Scenario #2, another early/split fixed-target run, was designed to let the more recently approved heavy-flavor experiments get on the fixed-target train before it leaves the station. The separation of the two segments of the fixed-target run is increased to six months by delaying the start of the second segment until January of 1991, allowing the heavy-flavor experiments to take advantage of the infusion of funding that will come at the start of FY91.

This scenario favors the fixed-target program at the expense of the

time that deer are most active. However, we've also had them reported at 10:00 a.m. and around 12:00 noon. The most critical times are between 5:00 a.m. and 8:00 a.m. and again between 4:00 p.m. and 8:00 p.m. All drivers are urged to be especially careful during these periods. On the Fermilab site, areas of special concern include all of West Wilson Road, Pine Street, "B" Road, and Batavia Road. Deer are hit in other areas, too, but these are the locations of most accidents.

Here are some suggestions you can follow to reduce your risk of hitting a deer with your vehicle.

1. Be alert, primarily at the times and places listed above, but in general when driving on site.

2. Be aware of deer along the sides of the road. When your car's headlights are on, look for stationary shining eyes, as well as move

Collider program by delaying the completion of the first upgrade of the CDF detector until October. It also delays the completion of D0 until October 1991.

• **Scenario #3** schedules the fixed-target program to begin in July of '90 and run uninterrupted through February of 1991, followed by a six-month accelerator installation period, roll-in of CDF and D0 in September of '91, and a Collider run beginning in October of '91.

According to Stanfield, this plan (a) saves \$5.3 million in power in FY90 by delaying the fixed-target cycle, allowing those funds to be applied to experiments 789, 771, and 791, (b) results in better efficiency for the accelerator and the fixed-target experiments, but (c) puts the Collider run at greater risk because all of the separator and low-beta installation and testing must wait for the shutdown immediately prior to the Collider run, creating the possibility of an extended delay in preparing the accelerator

ment. When you see one deer, expect more in the same area.

3. As soon as you see a deer, *slow down - brake!*

4. If there's time, blow your horn to frighten off the deer and alert other drivers. Dim your headlights, so the deer are not blinded by your high beams.

5. Maintain control of your vehicle, no matter what. Don't swerve out of your lane. It's usually better to hit the deer than to risk a roll-over in the ditch, a head-on collision with another car, or hitting a tree.

6. Report all collisions with deer to Security immediately, just as you would any other accident.

Please be extra careful during these dangerous months, and preserve both our wildlife and your own safety. *Give a deer a brake!*

- Gary Verseput

for Collider physics. The entire risk is put on CDF and D0.

This plan is seen to favor the recently approved heavy-flavor experiments by diverting funds to them and away from CDF and D0. It also results in 1-1/2 months less running time for most of the fixed-target experiments.

“The future isn't what it used to be,” was the opening statement by Raymond Brock, UEC Chairman. Speaking on behalf of the UEC, Brock noted that, “We shouldn't be [at a meeting like this]” because of the “admirable” success of the Tevatron's first decade. Calling this a “crucial year for high-energy physics and Fermilab,” Brock then introduced a series of representatives from the Laboratory's experiments, both Collider and fixed-target, who offered preferences as diverse as the Laboratory's physics program itself. Among them:

Paul Grannis (D0/SUNY-Stony Brook) found scenario #1 to be a

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“disaster,” but scenario #2 “okay” because it treats both Collider experiments as equal, allowing D0 to meet its test goals during the fixed-target run and its physics goals during the Collider run.

Mel Shochet (CDF/Chicago) observed that all three scenarios “pit experiment against experiment,” but favored scenario #1, saying, “We want to get on with our physics and [find] the top quark quickly.”

Opting for either #1 or #2 with an extension of the first part of the run to complete data taking, Joe Lach (E-761/Fermilab) called it “a discouraging business to have to talk about program cuts... E-761 is a very international experiment; our group members from several countries are assembled and ready to go.”

George Gollin (E-773/Illinois) said on behalf of experiments 731 and 799, as well as 773, that scenario #2 was to their liking. The shutdown between runs would be long enough for them to continue data analysis from 731 and gave them more time for further equipment installation.

Brad Cox (E-771/Virginia) took note of the negative effect all the scenarios had on experiments 771, 789, 791, with a preference for the later, but continuous, run afforded by scenario #3.

Paul Slattery (E-706/Rochester) called scenario #3 a “vote of no-confidence in the first round of Tevatron experiments,” which were first proposed in 1981, proved themselves in the 1987-88 fixed-target run, and would be off the air for two full years under #3. In his view, scenario #1 was optimized for completion of the first round of Tevatron experiments, but was a “disaster” for second-generation, heavy-quark experiments. He saw scenario #2 as a “possible compromise” if the summer-1990 run was extended beyond 4-1/2 months. “Let’s stop talking and start running in mid-February [of 1990], and

consider the second half of the run in April,” he said.

Jeff Appel (E-791/Fermilab) favored the earlier runs of #1 and #2, but pointed out that experiments 771, 789, and 791 were not included in these early runs. “We are in a unique situation; we can complete our data-taking in the next run no matter what scenario is followed... if only sufficient funds were made available. Our readiness has never been seriously questioned.”

Alexandr Vassiliev (704/IHEP, Serpukhov) spoke on behalf of the Lab’s fixed-target experiments (672, 704, 761) on which approximately 20 U.S.S.R. physicists are collaborating. They had, he said, brought their detectors, assembled them, and kept their part of the agreements between the experiments and the Lab. Some of their group will be ending their stays at the Lab just as the fixed-target run begins under scenario #3.

John Peoples has encouraged experimenters to express their feelings to the Director in writing, and has asked spokespersons to have representatives available to answer questions during the December PAC meeting. - *Richard Fenner*

CPR Classes Offered

Once again, Fermilab will be offering two CPR, or cardiopulmonary resuscitation, classes.

The eight-hour CPR class is for those who have never taken a CPR class. The four-hour class will be a refresher for those wishing to renew their yearly CPR certification.

To attend, please obtain your supervisor’s permission, then send your name, mail station, Division/Section, and extension to Neil Dal Cerro, MS 302; specify either the eight-hour or four-hour class.

- *Neil Dal Cerro*

Estimated number of calories a person consumes during Thanksgiving dinner: **2250**

☛ Cla\$\$ified Ad\$

**FOR SALE
Motorized Vehicles:**

1984 SAAB 900S, 3-dr., 93,000 miles, AC,PS,PB, power door locks, AM/FM cassette, sunroof, black w/ burgundy cloth interior, very good condition, \$4500 or best offer. Call 892-9076 and leave message.

1985 DODGE COLT PREMIER, 69,913 miles, one owner, low mileage tires, new battery, \$3200 or best offer. Call Euhel at ext. 3555.

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CROSS-OVER TOOL BOX for full-size pick-up, \$50. TRAK 1000 CROSS-COUNTRY SKIS, 200 cm waxless with Salomon boots and binding (size 40) and poles, barely used, \$90. SKI OVERALLS, female size 12, \$35. REI PARKA, female size 10, \$35. Call Dennis at ext. 2550 or 406-0035.

WANTED

HOME FOR KITTENS. Born September 25th, mostly black, some with white markings. Desperate. Call Bob at ext. 4700.

Rank of the holiday season, among the busiest times of the year for plastic surgeons: **1**

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