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NEW NAL DIRECTIONS CONSIDERED

Over 60 physicists met for four weeks during July in a concentrated review of some of the future programs the National Accelerator Laboratory might undertake. The study originated from discussions held with the NAL Long Range Planning Committee last November which pointed up the need for a thorough consideration of long-term NAL projects. Held in Aspen, Colorado, the 1973 summer meetings considered four general topics, with several sub-groups formed according to the interests of those who participated.

The 1973 NAL Summer Study was directed by Donald A. Edwards of NAL's Accelerator Division. Reviewing the meeting, Dr. Edwards says, "The pleasant surroundings provided a congenial atmosphere in which to step away from more immediate concerns and take a look toward the future. The study was very productive and made a fine beginning to the long range planning process."

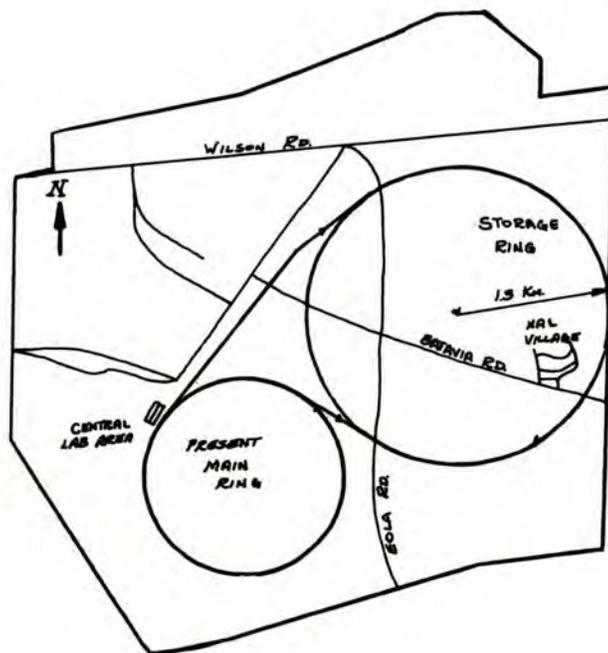
A.K. Mann, an NAL experimenter from the University of Pennsylvania, assisted by B. Cox, of NAL's Proton Section, acted as group leaders for discussions about a possible fourth external experimental area and about improvements to the existing experimental areas. The group recommended that a new area be developed east and "downstream" of the present Proton Area, as has been shown previously in some NAL master plan projections. The purpose of the new area would be to provide primary and secondary beams at the highest possible energies. Target stations would be situated near the Proton Area, a location which allows some 2,000 feet for construction of secondary beams. Extensions to the Proton Area were also recommended which would, in effect, become part of the fourth experimental area and result in a closely-integrated complex of experimental facilities.

The Meson Area should remain a 300 BeV area, the Study concluded, because a large number of experiments have been approved there for the facility as it exists, and it was felt these should run to completion.

There was some feeling that the potential of the Internal Target Area deserves further exploitation. A modest change might be the building of a detector room outside the Main Ring tunnel.

Neutrino Area changes considered at the Summer Study were related to the possibility of obtaining 1000 BeV with the energy doubler. Successful development of the doubler might mean lengthening the decay pipe and increasing the density of the shielding on the Neutrino Line. In addition, there was considerable discussion of possible modifications to the existing muon line in order to improve the muon flux and to facilitate simultaneous operation of experiments located in different regions of the Neutrino Area.

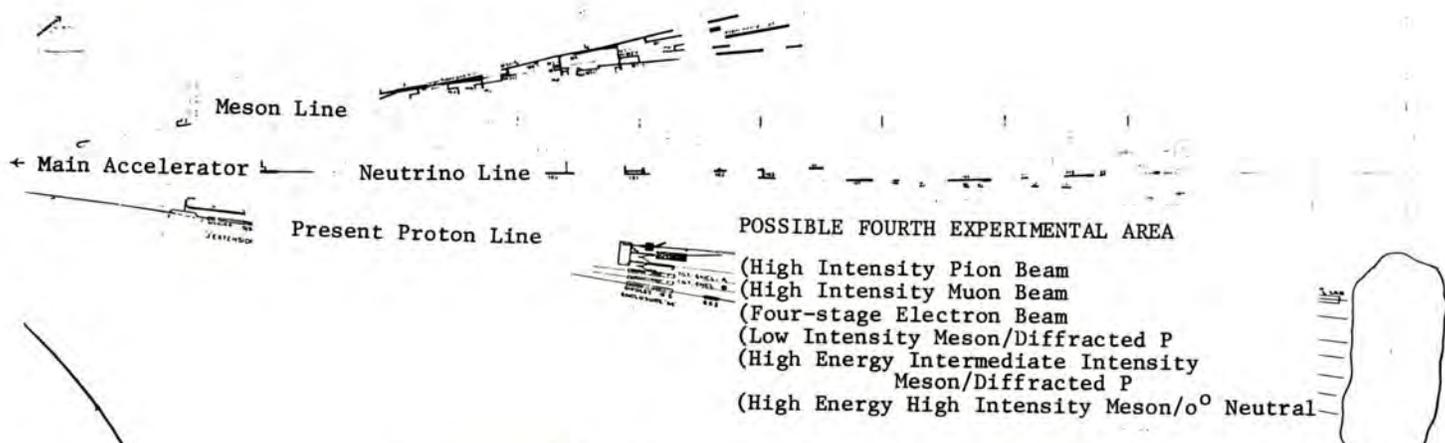
The Spectrometer group was led by R. Diebold, Argonne National Laboratory, with the aid of



...Scale drawing of storage rings discussed at 1973 NAL Summer Study...

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NEW NAL DIRECTIONS CONSIDERED (Continued)



...A proposed fourth experimental line for NAL...

L. Voyvodic, NAL Neutrino Section. The group proposed a major multi-purpose facility suitable for a wide variety of hadronic interaction studies. Some 250 feet in length, it would be composed of a number of large magnets and electronic particle detectors having high event rate capabilities. Options discussed included the replacement of some of the electronic detectors by a rapid-cycling bubble chamber for certain experiments. The spectrometer is intended for use by many experimental groups; therefore, it would be a laboratory facility in the same sense that the bubble chambers are. "What was visualized here was a 'next-generation super-spectrometer' for thorough studies of all of the interesting strong-particle interactions presently being sampled at NAL by bubble chambers, hybrid systems, and various mini-spectrometers," according to Dr. Voyvodic.

Two "colliding beam" groups met at the NAL 1973 Summer Study. Proton-proton colliding beam considerations were led by Wonyong Lee, Columbia, assisted by E. Malamud, NAL Meson Section. K. Strauch, Director of the Cambridge Electron Accelerator; and E. Hubbard, NAL Accelerator Division, headed the group discussing electron-proton systems. Both groups advocated that NAL embark on the design of a set of storage rings permitting the study of both electron-proton and proton-proton collisions. For the protons, an energy in the 1000 BeV range was recommended and, for the electrons, an energy of some 20 BeV. These rings would be somewhat larger in diameter than our present main accelerator. Noting that superconducting magnets were a prerequisite for proton storage rings on this scale, the groups urged that development of such magnets be vigorously pursued by NAL.

Since the large storage rings are projects of such great magnitude, both in time and money, the participants recommended that intermediate steps be considered particularly in view of design uncertainties in the big rings. It was noted, for example, that the Cambridge Electron Accelerator might be moved to the NAL site and used as an "electron target" for a preliminary study of electron collisions with protons in the existing Main Ring. In a similar spirit, the proton-proton group advised that NAL look into the possibility of building a 30 to 50 BeV superconducting proton storage ring, also to make collisions with main ring (or doubler protons).

Projects of more immediate concern, such as energy doubler research and other improvements to existing facilities, were also discussed in Aspen, but were divorced from the long range projections.

A summary of the Summer Study conclusions appeared in the August issue of NALREP. It is expected that an entire volume of proceedings will be published later this year, including the papers contributed to the study and the summary papers and recommendations prepared by the group leaders.

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...NAL employees should report changes of home address or family status to the Personnel Office, 21 Sauk, Ext. 3396....

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IN MEMORIAM

DEWAYNE WILLIAM BROWN

Dewayne William Brown, Maintenance Mechanic in NAL's Plant Services Group, passed away at his home at 414 East Brown Street, West Chicago, on the morning of October 19, 1973.

Dewayne was born in Westbrook, Minnesota and attended schools in the St. Paul, Minnesota area. He was a veteran of service in the U.S. Army. He came to NAL in May of 1973 and was a heating-ventilating-cooling mechanic in Plant Services.

"Dewayne was happy with his work at NAL," observes George Doyle, head of Plant Services. "He was enthused about his future here and as recently as last week, had given valuable assistance to problems on the Neutrino Line."

Funeral services were held Monday, October 22, at St. Mary's Catholic Church in West Chicago with burial at Assumption Cemetery, Winfield.

Brown is survived by his widow and five young children. A fund for the family is being collected by the Plant Services office, 30 Sauk, Ext. 3421.



*Dewayne W.
Brown*

'73 TENNIS TOURNAMENT COMPLETED

Winner of the 1973 NAL Tennis Tournament is James K. Walker (Physics Department). He defeated Stan Bristol (Physics Department), 6-2 and 6-3. In the consolation league, Dan Carson (R.S. Computer) won the final match with Rich Krull (Accelerator Division), 6-2 and 6-4.

Others who participated in the 1973 tournament include: R. Kreml, J. Sauer, M. Storm, and M. Wilks, Accelerator Division; R. Walker, 30" Bubble Chamber; T. Luisada and J. Paliulionis, DUSAF; M. Appel and N. Paar, Experiment 70; P. Koehler, Meson Section; A. Loomis, Muon Lab; R. Rihel and H. Davenport, Neutrino Section; J. Jackson, R.S. Computer; and W. Bosworth, Technical Services.

Koehler and John Satti (both of Meson Section) were NALREC co-chairmen of the tournament.



...Stan Bristol (L) congratulates champ Jim Walker at the end of 1973 NAL Tennis Tournament...



...Co-chairman Peter Koehler (L) presents trophy to consolation league winner Dan Carson...

...MUSIC and FUN -- OH, YOU KID...

The nickel beer returns to life at NAL's Speakeasy Night - Saturday, October 27, Village Barn - 8 p.m. If you'd prefer, try the cash bar or the stuff in the 4-legged bath tub -- all part of the 20's fun being planned by NALREC for NAL employees and visiting experimenters, spouses and dates.

Dancing to live band or the vic. NO CHARGE!

For further information, call Helen Ecker, Ext. 3391

IN THE NAL AREA...

...Lizzadro Museum of Lapidary Art, 220 Cottage Hill, Elmhurst, will feature a special exhibit of artifacts from the Koster Site, Kampsville, Ill., October 20 through November 3. Remains from at least 15 primitive Indian cultures have been discovered at the site.

...The Field Museum in Chicago offers free weekly film lectures. The theatre is reached through the west entrance of the Museum. The program for Saturday, October 27 is, "Minnesota Valley Saga," with Dr. Walter J. Breckenridge; Saturday, November 3, "New Hebrides," with Kal Muller; Saturday, November 10, "Panama," Col. John Craig.

...The London Bach Society will perform at Wheaton College on Friday, November 2, 8:30 p.m. in Edman Chapel. The Society is a company of 80 singers and instrumentalists known for the performance of both vocal and instrumental music. Music of all periods will be featured on the program. Single concert ticket prices are \$5,4, or 3.00.

...Used books are needed by the American Association of University Women, Wheaton-Glen Ellyn Branch, for their 13th Annual Book Sale. All proceeds of the book sale go directly to fellowships and scholarships for local young women. If you are moving, housecleaning, or have books you don't need, Sherry Yarema, 858-5225, will collect your books all through the year.

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SIGN UP NOW - CALL EXT. 3232

The American Red Cross Bloodmobile will make a one-day stop at NAL on Monday November 12. This will be a one-and-only chance for employees to make donations that will give coverage for all NAL employees. At least 200 pints are needed because NAL failed to reach its goal on the September visit of the Bloodmobile.

YOUR help is urgently needed. Call Dorothy Poll, Ext. 3232 to sign up.

CLASSIFIED ADS

FOR SALE - Birthday cakes, ½ sheet cakes, custom decorated. Also, homemade cookies. Call Vi Caponash, 898-6584 (Aurora, Ill.).

FOR SALE - 1970 Fiat 124 Sport Coupe, steel-belted radials, excel. running condition, needs body work, \$1000 or best offer. Call Rene Donaldson, Ext. 3278.

FOR SALE - Boy's 26" 10 speed bike, perfect condition, \$100. WANTED TO RENT - Small 2 bedroom house. Call J. Raboine, Ext. 3521.

FOR SALE - 2 pair boys ice skates, size 1. Call Marie Nelson, Ext. 3154 or 898-9472.

FOR SALE - Modern dry bar, white formica with chrome legs, 4 ft. by 6 ft., plus 2 matching stools. Best offer. Call Rupert Crouch, Ext. 3776.

WANTED - Bagged leaves and/or lawn clippings. Call Peter, Ext. 3461 or 964-5371.

WANTED - Good used car, cheap, immediately. Call Claudia Slater, Ext. 3351.

FOR SALE - Last chance - \$1 buys a raffle ticket - trip for two to Las Vegas or \$300 credit on trip of your choice. Benefit, Business & Professional Women's Scholarship fund. Call Margaret Pearson, Ext. 3351.