

FACILITIES FOR SMALL EXPERIMENTS

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The main conclusion reached by our subgroup is that in 1972 people will require equipment that our subgroup is not smart enough to foresee. We apologize for this shortcoming in our subgroup that was not present in most other subgroups.

Nevertheless, we strongly recommend that a fair sum of money (~ \$5 million) should be made available in 1970-71 to purchase those small to intermediate items (less than \$1/4 million) whose need will become apparent at that time.

Our other recommendation is to immediately start work on development and design of superconducting and cryogenic bending magnets:

1. There will be a need for superconducting analyzing and transport magnets with 50-kG field and an approximate gap size of 2 in. \times 5 in. \times 100 in. At least 30 of these will be needed.
2. About 15 larger aperture magnets will also be needed for analysis in spark-chamber experiments.
3. Because of the high radiation background near targets septum magnets should probably be cryogenic rather than superconducting. At least 10 septums should be built, varying in length from 40 in. to 120 in.

and in aperture from 1 in. \times 2 in. \times 5 in. The field should be at least 35 kG.

The existence of these superconducting and cryogenic magnets will be vital to the counter-spark chamber program at NAL. Consequently, we urge that the development of such magnets be started immediately.

We also list the following facilities which users will need:

1. Monitoring of high flux beams (radiochemistry, pickup coils, ionization counters)
2. Small computers in trailers
3. Liquid hydrogen targets and polarized targets
4. A small electronics pool to complement the users' own electronics and repair equipment.