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Progress Report on Part C of EHS

During a two weeks period of tests at the end of July spatial resolution has been measured for the full 2 m length of the VD fingers. We found $\sigma = \pm 4$ mm independently of the distance from the photomultiplier.

Attenuation was measured to be low ($\lambda = 2.0$ m) as expected, and not significantly varying from finger to finger.

Most of the effort was devoted to investigate the most suitable attachment of the optical fibers to the glass blocks, particularly for IGD for which the problem is more important. Tests were carried out on a sample of 8 IGD and 10 FGD counters and continued all through September.

Our results indicate that IGD counters can be precalibrated to $\pm 5\%$ without a beam. If confirmed on a larger sample, this result would mean a great simplification in the calibration procedure. For FGD results are even more exciting.

A significant improvement was obtained by inserting a sharp-cut filter between the lead glass blocks and the PM's, to make uniform for all blocks the region of transition from transparency to opaqueness. The extra cost for the filters, if adopted, is quite reasonable.

A prototype computer controlled HV unit for the photomultipliers (120 channels), developed by S. Centro and colleagues has been brought to CERN for final tests during August. Results were fully satisfactory and the unit will be used during the mini IGD test this coming October. Further improvements of the model are meanwhile in progress, with the insertion of a microprocessor in the control module.

A final choice on cables and connectors has been possible based on this unit. Only for FGD single coaxial connectors will be retained, since no compromise is wished on the quality of the signals, while for the rest multiple connectors will be used, allowing for considerable savings and compactness.

A working group has been organized and meets regularly on the on-line software. A first real-life test of the NORD-10 on-line programs is likely to take place at a preliminary run at SPS energy of the mini IGD next March.

Constructions are in progress according to schedule.