PS/AA/ME/Note 64
CDJ/afm

20 May 1983

NOTES ON MACHINE EXPERIMENT MEETING - 10th MAY 1983

1. H.F. Cooling

Colin Taylor reported that the peak of the stack momentum spectrum has been observed to vary with stack Δp attenuator settings, probably due to the line delay increasing with attenuation. A solution would be to couple the attenuators to the phase shifter.

The excess of common mode signal from the transverse H.F. pick-ups is still unexplained. The cause does not appear to be due to misalignment or to imbalance, but these will be checked again. Meanwhile. it has been shown that the high common mode signal at the transverse kicker does not, as one might have feared, influence the longitudinal cooling and so the main problem is that of overloading the power amplifiers.

Heribert Koziol reported on a measurement of the emittance of a pilot pulse on the ejection orbit. After 20 min of stack core cooling following the end of accumulation, the vertical emittance of the pilot pulse corresponded closely to that measured for the entire stack. Details will appear in an ME Note. He is also looking at the possibility of obtaining horizontal emittance measurements derived after deconvolution of the momentum broadening at the scraper 2105.

2. ME Programme for September 1983

This ME period comprises 9 days, a 1.5 day stop for PS MD and then a further 3.5 days. Setting up for accumulation should begin on the 27th September.

After some discussion it was generally agreed that the first 4 days will be needed for checking the machine optics, the new precooling ferrites and the HF cooling systems. The following five days will be divided between tests of the Fermilab lithium lens, which could be installed before the start of the ME, and an operational version of the conducting target tested in March. There was strong feeling that we should pursue both of these source improvements, each now expected to give 20% to 40%

extra $\bar{p}$ yield, with the intention of using the better one subsequently for production. The other to be in reserve. We are not yet able to contemplate using lithium lens and conducting target together in order to gain both factors. This will be for next year.

Reported by C.D. Johnson