Last Updated: 27 July 2006

Hall A "LEDEX" RunPlan
1st Low-Energy Beam Period (E_o = 362 MeV): July 24 – Aug. 20, 2006
E05-103

- **PROCEDURES FOR EACH HYDROGEN ELASTIC SEQUENCE**

1.0 Ensure Spectrometer Set Properly

- Change HRS-L **momentum & angle** settings to those specified for the HIGHEST MOMENTUM setting (puts peak for central angle @ δ = -2%) in the Kin-Table (follow Counting House "Whiteboard" instructions from J. Lerose for cycling quads when setting momentum).

p_h (GeV/c)	θ_h (deg)	Target
Highest Momentum ("δ = -2%") for this H Elastic Sequence		LH_2

1.1 Spectrometer Pointing Measurements

- Small collimator on HRS-L (will be already bolted in place).
- Check beam position on BPMs (few-tenths of mm on each); set Raster ON: ASK MCC for "6 x 4.5" (± ≈ 3 mm in X and Y)
- Set prescales T3=low; other prescales set high (65535) for low deadtime.
- Beam current of a few microamps (up to max DAQ rate of 2-3 kHz)
- Set target to following settings, and take 5 minutes of pointing data at each setting (separate run for each target). (Target C "optics" is not the slanted one)

p_h (GeV/c)	θ_h (deg)	Target	Time (min)
As set in first step above (1.0)		C "optics"	5
		4 cm Dummy	5
		15 cm Dummy	5

1.2 Hydrogen Elastic Measurement w/ FPP: central elastic peak @ δ = -2%

- Set prescales T3=low; other prescales set high (65535) for low deadtime.
- Ask MCC for Beam current of about 1.5 microamps ; adjust current to give max DAQ rates (2-3 kHz, with "acceptable" deadtime).
- **FPP Carbon Doors**: place **either** the **3" doors** (if momentum above ~660 MeV/c), **1.5" doors** (if central momentum between ~560-660 MeV/c) **or NO doors** (less than ~560 MeV/c) → check FPP Figure of Merit Simulation / runplan document.

p_h (GeV/c)	θ_h (deg)	Target	Time (hr)
As set in first step above (1.0)		LH_2	4

1.3 Hydrogen Elastic Measurement: central elastic peak @ δ = 0%

1.3.1 w/ FPP:

Same as previous measurement (**1.2**), except now **LOWER HRS-L momentum setting** to that specified for the MIDDLE (CENTERED) MOMENTUM setting (puts peak for central angle @ δ = 0%) in the Kin-Table (follow Counting House "Whiteboard" instructions from J. Lerose for cycling quads when setting momentum).

p_h (GeV/c)	θ_h (deg)	Target	Time (hr)
Middle (centered) Momentum ("δ = 0%") for this H Elastic Sequence		LH_2	4

1.3.2 *Cross Section Measurement: (no FPP)*

- **Insert S0 scintillator layer.**
- Download new trigger for T4 (that is 2 out of the 3 S0, S1, S2), and ensure running with PS4=1 (see "How to" page on Ledex webpage) – you'll see the prompt to say "y" to S0

p_h (GeV/c)	θ_h (deg)	Target	Rate/Current	Time (min)
As set above in step 1.3.1		LH_2	High as possible, keeping Deadtime less than 10%	20 (2 M events)

- **Remove S0 scintillator layer.**
- Re-Download standard trigger again for T4 (T4 becomes S1 or S2, since S0 no longer in place) – you'll see the prompt to say "n" to S0

1.4 Elastic Measurement w/ FPP: central elastic peak @ δ = +2%

- Same as above FPP measurements (**1.2** and **1.3.1**), except now **LOWER HRS-L momentum** setting to that specified for the LOWEST MOMENTUM setting (puts peak for central angle @ δ = +2%) in the Kin-Table (follow Counting House "Whiteboard" instructions from J. Lerose for cycling quads when setting momentum).

p_h (GeV/c)	θ_h (deg)	Target	Time (hr)
Lowest Momentum ("δ = +2%") for this H Elastic Sequence		LH_2	4