HallD Detectors

Currently two detectors that need high purity gas supplies:

Central Drift Chambers (CDC)

Volume	$1.672 * 10^6 cm^3$
Chambers	1
Gas	Ar/CO_2
Mix	50%/50%
2Vol/day	2.3 l/min

Forward Drift Chambers (FDC)

Volume	$1.062 * 10^5 cm^3$
Chambers	4
Gas	Ar/CO_2
Mix	50%/50%
2Vol/day	0.6 l/min

Ar Cylinder	8.83 m^3	1.5 l/min	4 days
CO_2 Cylinder	9.56m^3	1.5 l/min	4.4 days

This is very optimistic more like 2days for one bottle.

The other Halls?

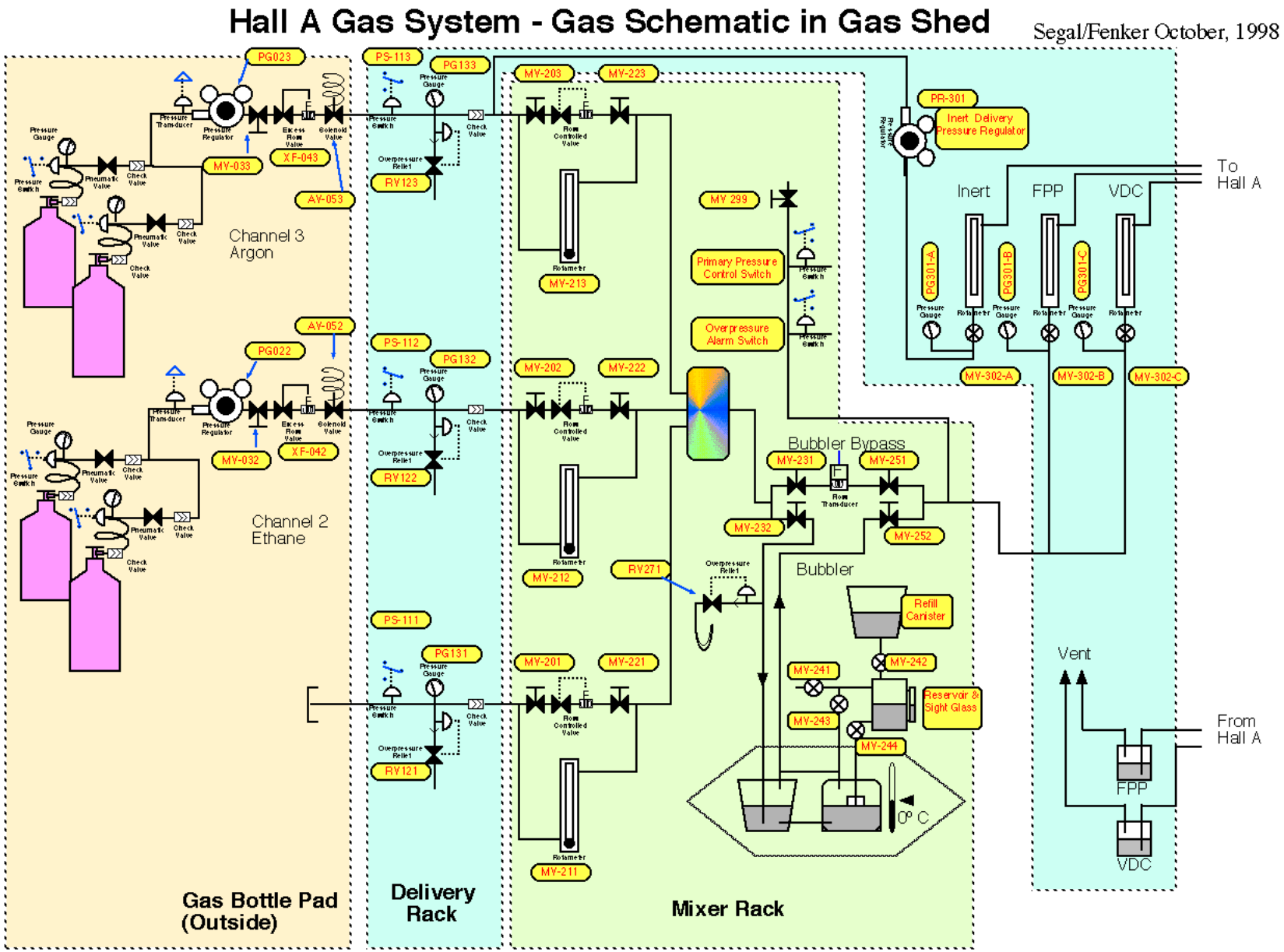
Hall-A
- $\sim$ 1 l/min
- Cylinders
- No pumps

Hall-B
- $\sim$ 30 l/min
- Dewars
- Pumps

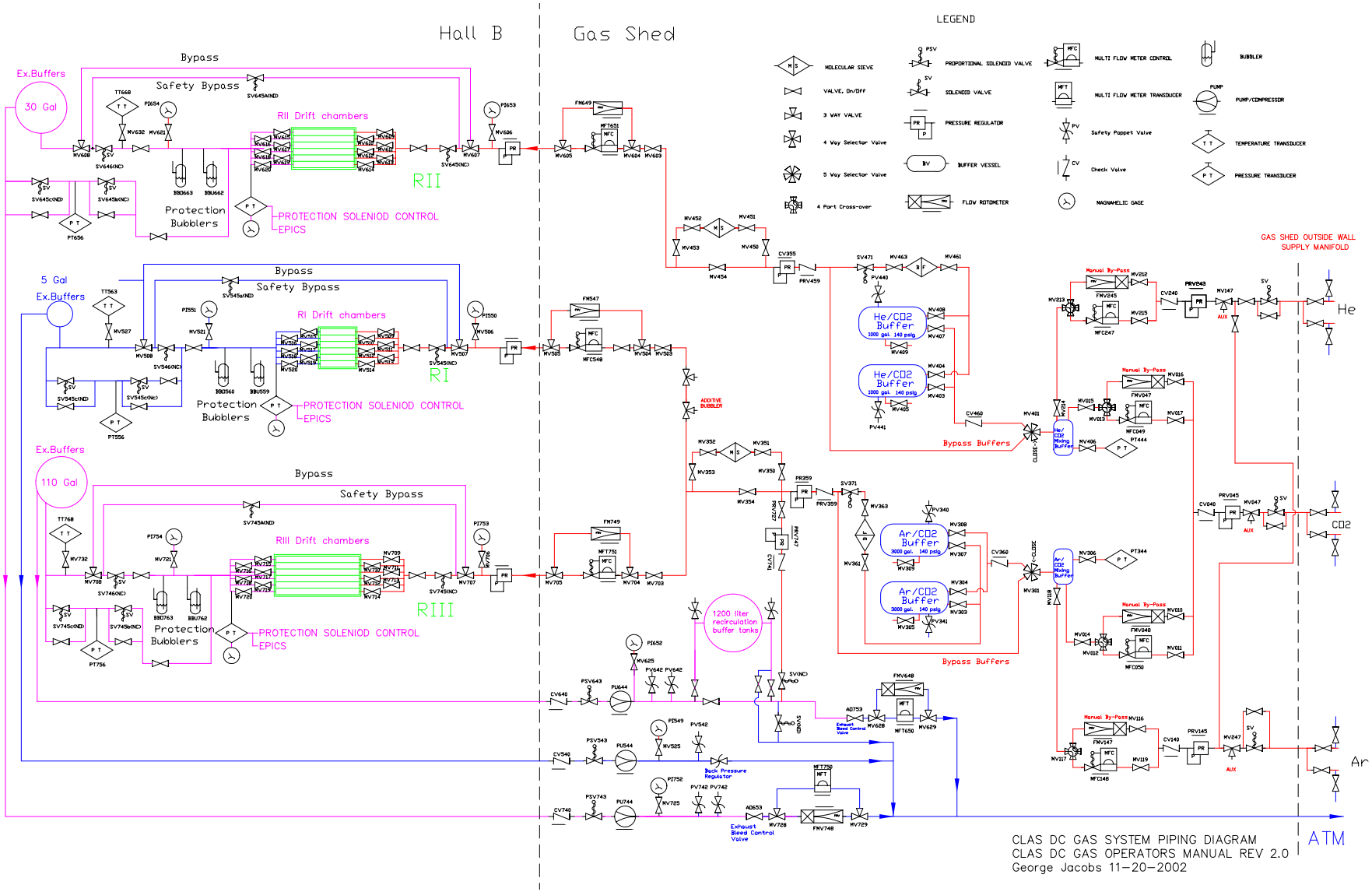
Hall-C
- $\sim$ 0.4 l/min
- Cylinders
- No pumps

We need about 10 times more gas than Hall-C but 10 times less than Hall-B!

HallA Gas System



HallB Gas System



What do we need/want

- Independend gas mixing systems for FDC and CDC
- Individual gas supply for 4 FDC chambers and 1 CDC chamber
- Gas buffer volumes are highly recommended (Steve, Jack)
- Avoid usage of pumps.
- Avoid usage of dewar supply.
- ...your input!

Option 1

- 5 mixing stations
- 10 mass flow controllers
- 5 supply lines
- 5 return lines
- 4 oxigen sensor stations
- Valves, PDs

Option 2

- 2 mixing stations
- 9 mass flow controllers
- 2 supply lines
- 5 return lines
- 4 oxigen sensor stations
- Valves, PDs