# SC Magnet Task Force

**Claus H. Rode**
**Project Manager**

**January 15, 2013**

# Comments from DOE Lehman Review Nov. 2012

- **"At present, with outstanding technical issues and with lack of detailed risk analysis, it is not possible to predict when magnet projects will be completed or the associated impact on the project budget."**
- **"All SC magnet procurement plans are success oriented."**
- **"A detailed risk analysis should be performed for each individual magnet project . . ."**
- **"Unplanned setbacks to be considered include unachieved milestones, time required to respond to review recommendations or to take remedial actions in response to failed component tests."**
- **A sustainable management structure is needed to achieve timely completion of all of the multiple magnet projects. The progress of the magnet development under each contract, as well as the Hall D solenoid, would benefit from the assignment of a dedicated lead individual for each magnet who is responsible for that magnet's completion.**

# Lehman Comments (Cont'd)

- **"The project continues to suffer from inadequate technical staff with expertise related to various aspects of superconducting magnet development and procurement. "**

- **"Efficient deployment of existing experts and training of existing staff could alleviate the current shortage of expertise. "**

- **The Committee was concerned that in-house technical experts are stovepiped in specific projects, while their knowledge could help address multiple challenges faced by the project as a whole. A high degree of unnecessary project compartmentalization seems to exist, while projects are addressing common problems.**

# Lehman Recommendations

1. Develop a common risk mitigation strategy that is subsequently implemented as appropriate for each magnet project before the next review.

2. Implement a sustainable magnet management structure before the next review.

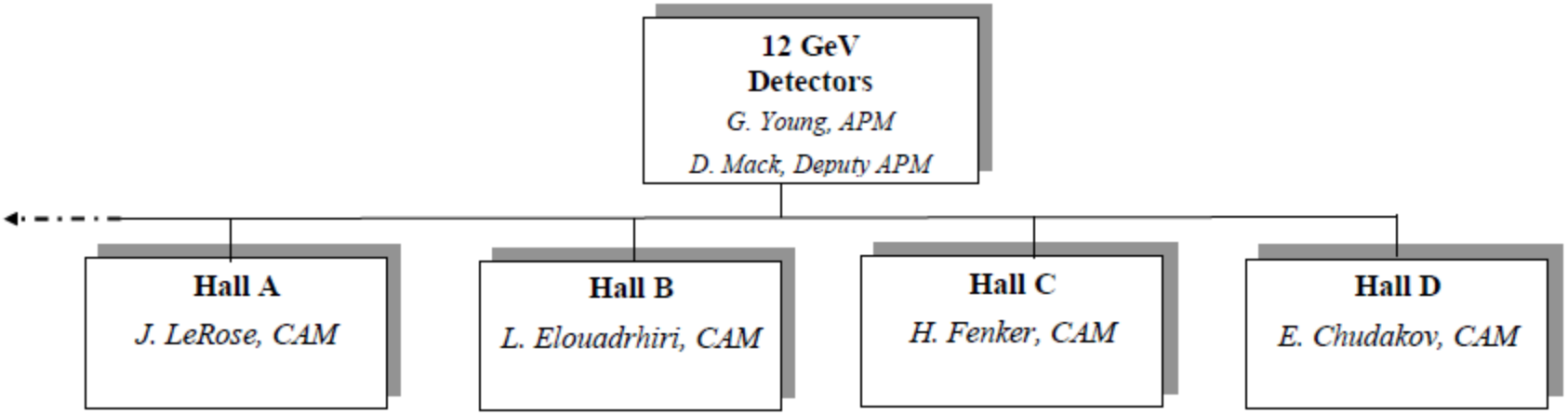
# Current Status

- Hall C has
  - Two performing magnet vendor contracts (HB, Q1)
  - One vendor contract (Dipole) that is stalled
    - on conductor and pre-stress considerations
  - Another contract at same vendor (Q2/Q3) dependent on the above
    - Uses same conductor, in less demanding conditions
- Hall B has
  - Two terminated vendor contracts
  - One new vendor contract (Solenoid)
  - One local construction effort (Torus)
    - Supported by contract with FNAL to produce cold mass

# Current Path Forward

- Claus needs to focus on Rebaseline
  - Budget, schedule, contingency, manpower
  - ~~Not going bankrupt during~~ Developing a good estimate for installation and commissioning
  - ETC and BOE for all

- Glenn will run a task force on SC magnets
  - Goal is to pool expertise, give DOE a definite individual lead on each magnet
  - Deputy APM for “non-magnets” part of Physics scope
  - Sustainable format




**High Priority Areas:**

Hall B – HTCC, ETC/BOE

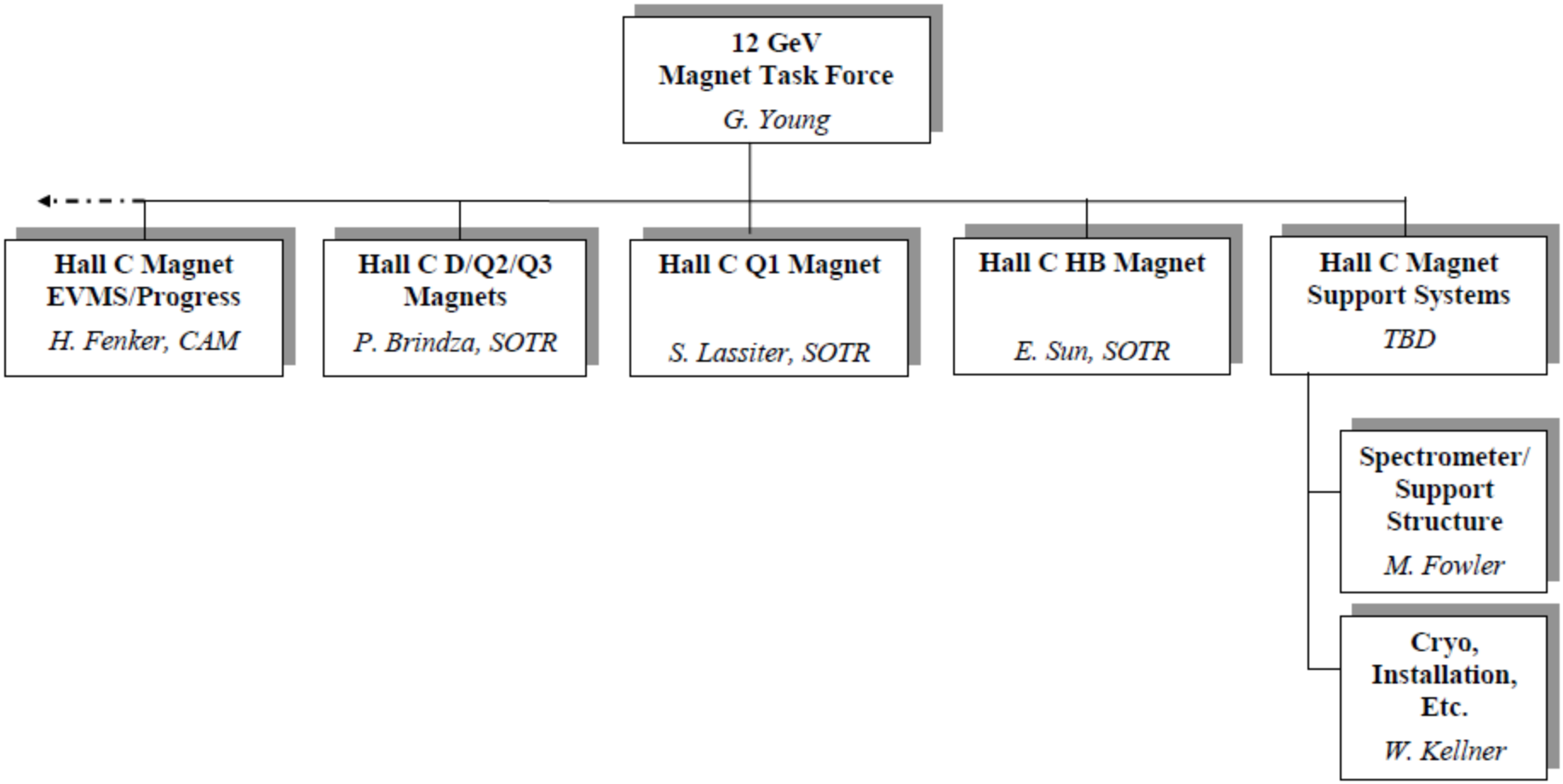
Hall C – Cerenkov (UVa), Carriage/Hut/Shielding contracts, ETC/BOE

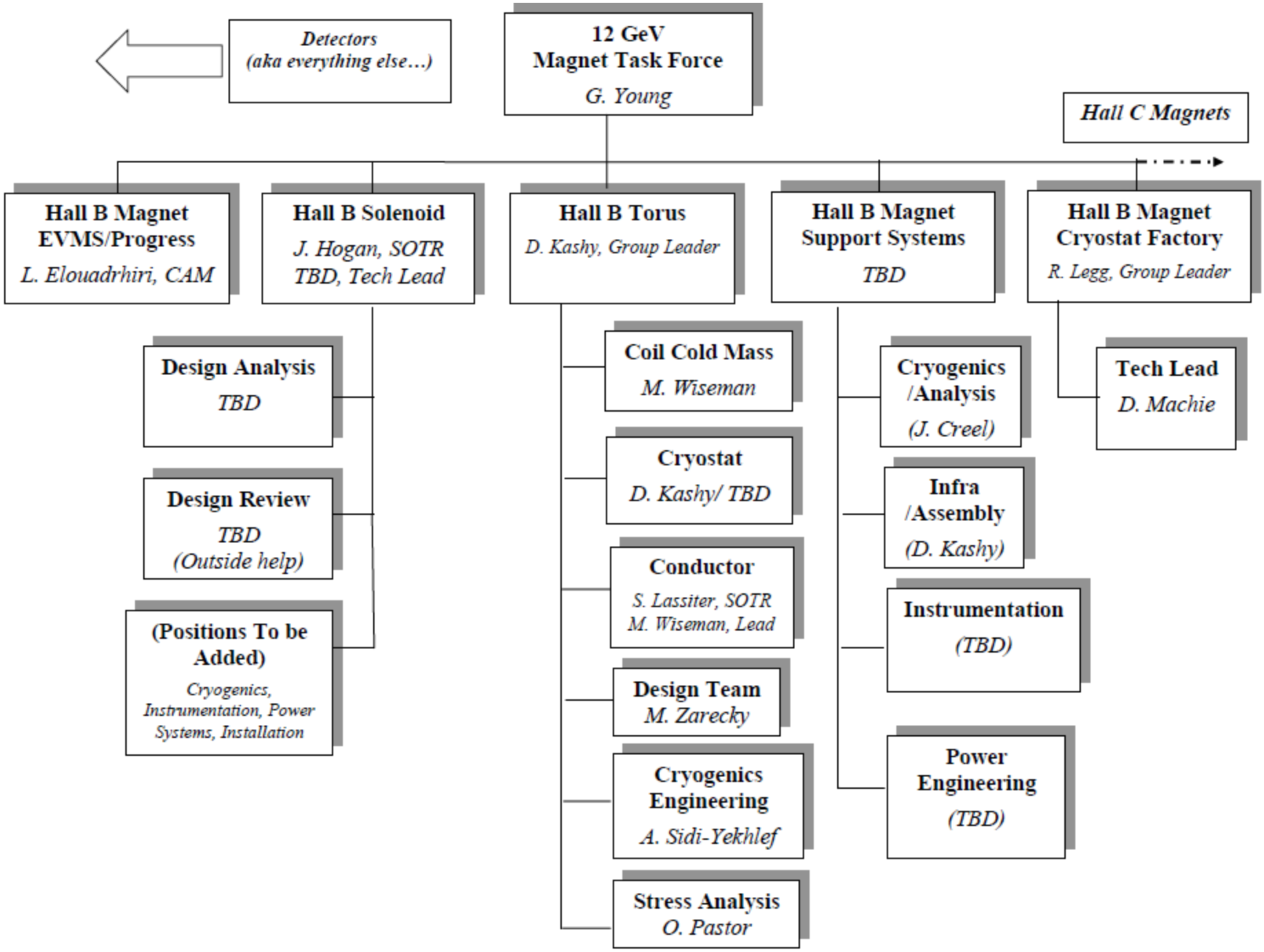
Hall D – FDC, DAQ/Online, ETC/BOE

Safety Reviews – P. Collins, ESH&Q, Phy Div support

Installation Planning

ALL – Detector Connection to Electronics & DAQ/Online, Initial Tests


12 GeV
Magnet Task Force
G. Young
Hall C Magnet
EVMS/Progress
H. Fenker, CAM
Hall C D/Q2/Q3
Magnets
P. Brindza, SOTR
Hall C Q1 Magnet
S. Lassiter, SOTR
Hall C HB Magnet
E. Sun, SOTR
Hall C Magnet
Support Systems
TBD
Spectrometer/
Support
Structure
M. Fowler
Cryo,
Installation,
Etc.
W. Kellner


Detectors
(aka everything else…)
12 GeV
Magnet Task Force
G. Young
Hall C Magnets
Hall B Magnet
EVMS/Progress
L. Elouadrhiri, CAM
Hall B Solenoid
J. Hogan, SOTR
TBD, Tech Lead
Hall B Torus
D. Kashy, Group Leader
Hall B Magnet
Support Systems
TBD
Hall B Magnet
Cryostat Factory
R. Legg, Group Leader
Design Analysis
TBD
Design Review
TBD
(Outside help)
(Positions To be
Added)
Cryogenics,
Instrumentation, Power
Systems, Installation
Coil Cold Mass
M. Wiseman
Cryostat
D. Kashy/ TBD
Conductor
S. Lassiter, SOTR
M. Wiseman, Lead
Design Team
M. Zarecky
Cryogenics
Engineering
A. Sidi-Yekhlef
Stress Analysis
O. Pastor
Cryogenics
/Analysis
(J. Creel)
Infra
/Assembly
(D. Kashy)
Instrumentation
(TBD)
Power
Engineering
(TBD)
Tech Lead
D. Machie

# Near Term

- Two magnet engineers hired, report Late Jan/early Feb, assign to Hall B efforts for start
- Cost estimation for Torus and for non-vendor part of Solenoid
- Solder line production startup for Hall B (?week of Jan 28)
- Description of JLab modeling of Dipole behavior, transmittal to Sigma Phi, then visit (Brindza, Sun, et al.)
- Torus Coil Case and Cryostat design work
- FNAL visits for Torus – prototype winding timeline = ?
- Torus Cryostat factory decisions, design, setup
- RISK analysis – ALL magnets