Army Study Topic

Center for Technology and National Security Policy

Defense Horizons Luncheon, May 19th — Some thoughts on the Army Laboratories

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40 years of outside studies

- ***Most have found labs to be relevant and effective with significant accomplishments but…are significant problems***
  - ***Personnel policies***
  - ***Centralized administration of local business e.g. procurement, facilities management***
  - ***Lack of empowerment of lab management***
- ***Recommendations—many, but most not implemented***

Role of Army Labs

Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories—1991

- ***Doing laboratory work—theory, modeling, experiment***
- ***Exploring new concepts; developing new knowledge***
- ***Ferreting out new science and technology outside the labs***
- ***Applying new knowledge to solving real Army problems***
- ***Developmental testing***
- ***Engineering research for scale-up***
- ***Facilitating technology transfer***
- ***Providing technical advice to Army senior leaders***

The Laboratory

Characteristics of a good lab

- *Clear and substantive mission*
- *Critical mass of assigned work*
- *Highly competent staff*
- *Inspired, empowered, highly qualified leadership*
- *State of the art facilities and equipment*
- *Effective, two-way relationship with the warfighters*
- *Strong foundation in research*
- *Management authority and flexibility*
- *Strong linkage to universities, industries, and other government labs*
- *Speed, Agility, Stability*

Evaluation and Review

- *Measuring effectiveness*
  - *Metrics—transitions to customers, publications, patents, numbers of post-doctoral, etc.*
  - *Peer review of quality*
  - *Customer review of relevance and timelines*
  - *Stakeholders reviews*
- *Metrics—most are indirect*
- *Peer reviews—independent, credible outside panels*
- *Customer reviews—the immediate recipients*
- *Stakeholders—policy, program strategy, represent the warfighters*

Recent Assessments

- ***BRAC 91* and the *Federal Advisory Commission on Consolidation and Conversion of Defense research and Development Laboratories***
  - ***Army lab plan approved—formation of ARL***
- ***NDU's report on future relevance of the DoD labs (Sec. 913 NDAA FY 2000)***
  - ***Lab's work is relevant to future needs***
  - ***Some work is too relevant; i.e. short term***
  - ***Customers are satisfied***
  - ***Personnel problems***
  - ***Labs losing authority and flexibility***
  - ***Need incentives to perform work on joint requirements***
- ***Underscored continuing need for strong in-house lab competence—"smart buyer role"***

Governance Options

- *GOGO—current mode*
- *GOCO*
- *FFRDC*
- *Government corporation*

- *Options within GOGO*
  - *Move staff to USC Title 10*
  - *Major increase in use of IPA authority (DSB)*
  - *Use external centers tightly connected to in-house labs*
- *Mixed Options—DSB*
  - *Move labs doing only S&T work under university management (the DOE Nat'l Labs model)*
  - *Move labs doing 6.4-6.6 work to acquisition organizations*

Governance Options (Continue)

- ***National Research Council (NRC)—Board on Army Science & Technology: 1993-1994***
- ***Four cases for the new Army Research Laboratory (ARL)***
  - ***Enhanced ARL—using available reforms***
  - ***The National Institute for Standards & Technology (NIST) model—improved personnel practices, more guest workers, more R&D partnership with private sector***
  - ***The ARL Multi-center model—70% contracted to the private sector in centers of excellence***
  - ***GOCO model***
- ***ARL reporting location within the Army***

Multi-Centers

Three categories of Army Research

- ***Army dominates the technology***
- ***Private sector has most expertise; Army has some***
- ***Private sector dominates***

External funding

- ***Grants—6.1 to academe; explore new concepts***
- ***Contracts—to industry for specific tasks***

Both turn control over to the Awardees

Multi-Centers (continued)

Multi-Centers use cooperative agreements contracts

- ***Result of full assessment of laboratory's strengths and weakness***
- ***Address priority Army needs***
- ***Use consortia of industry and academe***
- ***Substantial funding over prolonged period***
- ***Co-manage with internal lab programs***

Multi-Centers (continued)

Key Criteria

- *High priority*
- *Some in-house expertise*
- *Collaborators willing to share knowledge as developed*
- *Collaborators agree to staff movement*
- *Plan and execute under single Army manager*

Concept is to make the collaboration work as a single integrated program

Lessons Learned from Fed Labs

- ***Need systematic review of laboratories' strengths and weaknesses first***
- ***Should be funded as mostly Applied Research (6.2)***
- ***Staff rotation among participants has been limited in execution***
- ***Cooperative agreements should be longer than 5 years—need sufficient time for progress***

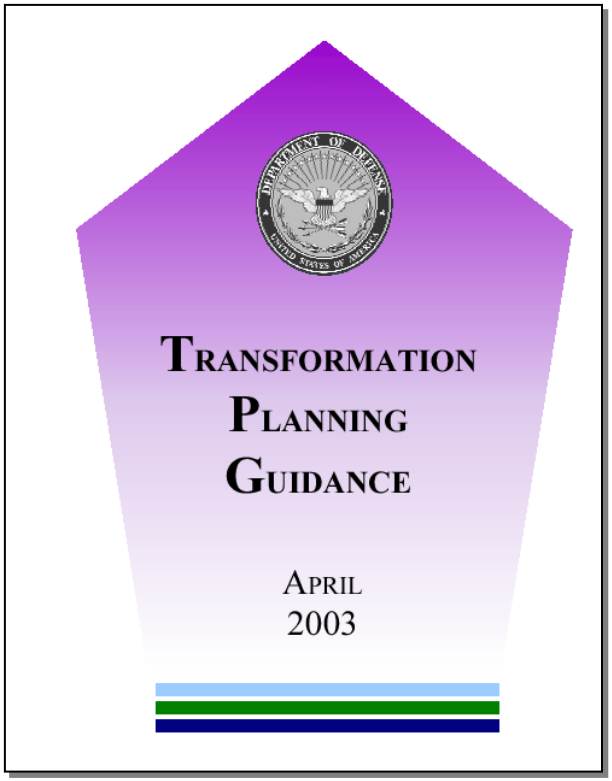
Conclusions

- ***The most important factor in achieving excellence is the excellence of the staff and leaders***
- ***The Army labs have been much studied; little real evidence to justify the criticisms***
- ***Many managerial problems: e.g., personnel rules, salary constraints, procurement red tape, centralization of most administrative services, and lack of management flexibility***
- ***There are well-tested criteria to determine laboratory excellence and for hiring and retention of top-quality staff and leaders***
- ***There are several ways to operate the labs; e.g., GOGO, GOCO, FFRDC, Government Corporations***
- ***Within the current (GOGO) model some options need more study***
- ***There are concerns about the LSI vis-à-vis the labs "smart buyer" role***

Recommendations

- ***Laboratory operating options:***
  - ***Explore the DSB suggestions for greater use of the Intergovernmental Personnel Act (IPA) for staffing***
  - ***Review and study the Government corporation mechanism***
  - ***Study the GOGO with external collaborative centers of excellence (Multi-Centers)—define model; consider further use***
- ***Create Army-wide stakeholders committee***
- ***Study the LSI and Lab "smart-buyer" relationship***
- ***Convert ILIR to regular 6.1 and delegate management to the labs or leave as ILIR but delegate management to the labs***
- ***Campaign to decentralize administrative services***

The Challenge for Future and Current Forces



"As transformation gathers pace the Department must continue to encourage innovation. Senior leaders also must…be equally ready to eliminate current practices that stifle innovation."