EXECUTIVE SUMMARY

19 August 2015

(U) DETERMINE FUTURE DEMAND FOR TOTAL ARMY AVIATION. (U) Four existing methods of determining future Army Aviation demand for Aviation Restructure Initiative (ARI) were used: Total Army Analysis (TAA); TRADOC Analysis Center (TRAC) Study; Headquarters, Department of the Army (HQDA) theater-based demand; and The Institute for Defense Analysis (IDA) Stochastic Active-Reserve Assessment (SARA) Model. The first three apply single projected-future scenarios to force structure war-gaming. The fourth, IDA's SARA model, looks at a range of worst-case scenarios and assigns them probabilities, and can generate a statistically-defendable "Most Likely" scenario among a range of "Most Dangerous" futures (e.g. 10,000 examples of 20-year "futures"). When force structure alternatives and force-supply policies are applied, risks and costs can be generated, leading to an optimized force with component distribution. IDA's SARA is recommended as more inclusive and statistically-supportable.

Considerations:

- Why was the ARI force developed *outside* the TAA process and then "top-loaded" into TAA?

- TRAC Study compared ARI and Chief of National Guard Bureau (CNGB) alternative against Integrated Security Construct-Bravo (ISC-B). 10 Combat Aviation Brigades (CABs) in the ARI force to 12 CABs in the CNGB alternative (CNGB 8 AC CABs, 2 Multi-Compo, 2 RC CABs). Can ARI perform better in more than one single future?

- HQDA theater based demand study tied together current Combatant Commander demands and possible contingency surge requirements to generate a single worst-case future (EUCOM goes unfilled to cover CENTCOM in this contingency). This scenario may not reflect current world developments where CNGB plan provides more capability.

INFORMATION PAPER

19 August 2015

SUBJECT: Determine Future Demand for Total Army Aviation

1. Purpose: To study the future demand for Total Army Aviation.

2. Summary: Four existing methods of determining future Army Aviation demand are presented: Total Army Analysis (TAA); TRADOC Analysis Center (TRAC) Study; Headquarters, Department of the Army (HQDA) theater-based demand; and The Institute for Defense Analysis (IDA) Stochastic Active-Reserve Assessment (SARA) Model. The first three apply single projected-future scenarios to force structure war-gaming. The fourth, IDA's SARA model, looks at a range of worst-case scenarios and assigns them probabilities, to generate a "Most Likely" among "Most Dangerous" futures. When force structure alternatives and force-supply policies are applied, risks and costs can be assessed. IDA's SARA is recommended as more inclusive and statistically-supportable.

3. Definitions:

a. Raw demand: The actual demand on the ground, to be answered by committed forces.

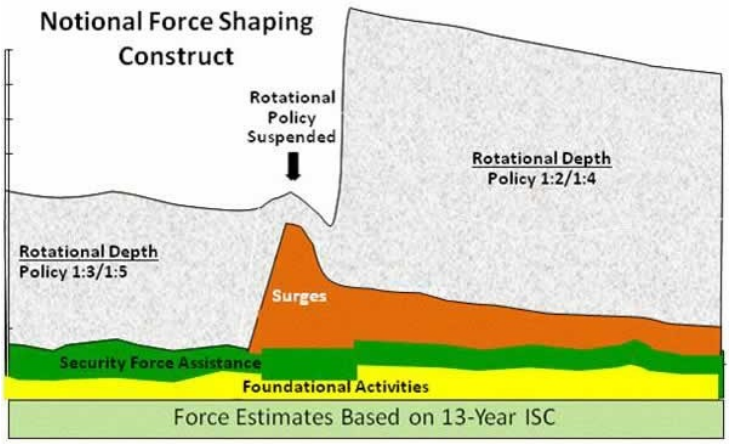
b. Supply-conditioned demand: The raw demand, plus those forces not committed, but required to satisfy existing force-supply policies (e.g. rotation).

4. Background:

a. TAA:

(1) The official process that determines the Army's future force structure. TAA uses the most current Office of the Secretary of Defense (OSD) Force Shaping Construct as its demand framework. This Integrated Security Construct (ISC) includes foundational activities, Regional Security Force Assistance, Major Combat Operations, and Homeland Defense over a thirteen year period. The deliverable is a detailed list at Standard Requirements Code (SRC) and Component level of detail for the required force.[1]

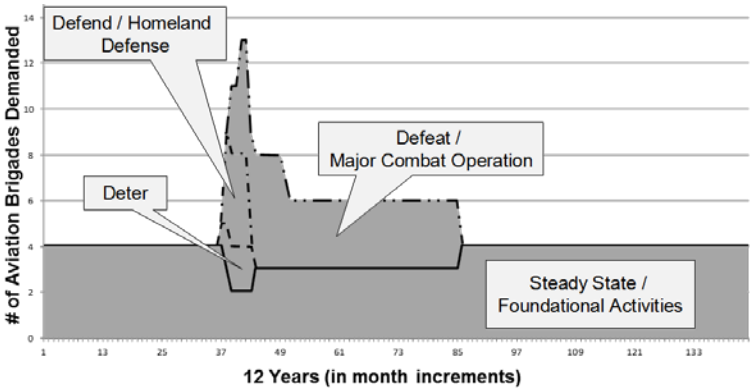
[1] "Total Army Analysis", MAJ Brian P. Wilkins, Requirement Integration Directorate, ARCIC; May 2, 2014; http://www.arcic.army.mil/Articles/cdd-Total-Army-Analysis.aspx




(2) TAA includes significant leadership refinements, during which results move from "true demand" toward "affordable supply." The results of TAA 18-22 (Fiscal Year 2018 to 2022) are: 10 Combat Aviation Brigades (10 x AC); 10 Expeditionary Combat Aviation Brigades (8 x ARNG, 2 x USAR); and 2 Theater Aviation Brigades (2 x ARNG). This is the ARI force – which was developed ***outside*** the TAA process and then "top-loaded" into TAA by Army leadership.

b. TRAC Study:

(1) In January, 2015, TRAC released an "Aviation Force Structure Sufficiency Risk Analysis" White Paper.[2] This paper described TRAC's HQDA-sponsored work, comparing the performance of two force structure alternatives (ARI, and the Chief, National Guard Bureau [CNGB] Alternative) against Integrated Security Construct – Bravo (ISC-B) as its baseline demand scenario. It too is a combination of Regional Security Force Assistance, Major Combat Operations, and Homeland Defense missions.




[2] "Aviation Force Structure Sufficiency Risk Analysis" White Paper; January, 2015.

(2) Against this demand, TRAC concluded that the ARI force (10 AC CABs) performed slightly better, and at less cost, than the CNGB Alternative (8 AC CABs, 2 Multi-Component (MC) CABs, 2 RC CABs).

c. HQDA and OSD – Cost Assessment and Program Evaluation (OSD-CAPE):

(3) During OSD-CAPE deliberations in the summer of 2014, HQDA presented a theater-based demand scenario for Attack Reconnaissance Battalions (ARBs), and by extention CABs. This scenario tied together current Combatant Commander (CCMD) demands and possible contingency surge requirements to generate a single worst-case future. Against this were applied current supply policies to generate a supply-conditioned demand. Finally, the ARI Force and CNGB Alternative Force were war-gamed against this single future scenario. CAPE concluded that the ARI Force accepted less risk.

d. IDA:

(1) IDA has developed a very capable computer model to assess future demand from a probabilistic viewpoint. The SARA Model:

(a) Defines *possible* future scenarios across the spectrum of operations (theater engagement through theater land campaign).

(b) Assigns troop list requirements, frequencies, durations, and probabilities to those scenarios based on analyses of historical events.

(c) Generates many (e.g. 10,000) 20-year "futures."[3]

(2) Against each of these futures, it applies potential force structure "supplies" (by component) and force-supply rules to generate performance data (unmet demands). This allows senior leaders to assess risk and cost, when making actual force structure decisions.

(3) In 2014, IDA conducted a SARA run to evaluate the performance of ARI and the CNGB Alternative against 10,000 potential futures. Focusing on the ARB force and the 1000 highest-demand futures, they determined that the CNGB Alternative does in fact provide a slight additional capacity--leading to "some insurance against high demand"--at an 8% cost premium.[4]

5. Conclusion: As former Secretary of Defense Robert Gates suggested in a 2011 speech at the US Military Academy, we are confident that our next national conflict – or

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[3] "The Stochastic Active-Reserve Assessment (SARA) Model: Force Planning under Uncertainty; Colin Doyle, Nancy Huff, Laila Wahedi, Jerome Bracken, John Brinkerhoff, David Graham, Stanley Horowitz, Shaun McGee. April 2015, IDA Document NS D-5470

[4] "Results from SARA Model Runs"; Colin Doyle, Nancy Huff, Stan Horowitz, Alex Wahlman. 30 October 2014

combination of conflicts - will be one that we do not foresee. This leads us to recommend the work IDA has done, and can do. By looking at a range of worst-case scenarios and assigning them probabilities, SARA can generate a statistically-defendable “Most Likely” scenario among a range of “Most Dangerous” futures. When force structure alternatives and force-supply policies are applied, risks and costs can be generated, leading to an optimized force with component distribution.