# DEPARTMENT OF THE ARMY

**US ARMY COMMAND AND GENERAL STAFF COLLEGE**

**100 STIMSON AVENUE**

**FORT LEAVENWORTH, KANSAS 66027-2301**



 **REPLY TO**

**ATTENTION OF:**

 24 February 2017

From: John T. Kuehn, Ph.D.

To: Admiral John M. Richardson, USN, Chief of Naval Operations

Via: Captain Robert Rubel, USN (ret.)

Subject: CNO Fleet Design Advisory Panel (FDAP), Report of Member

Reference: CNO 03 September 2016, CNO FDAP Charter

1. Background/BLUF. Admiral, my report will probably read a bit differently than the others because I wanted to give you my bottom line up front (BLUF) as we say here at the College. Based on my reading of the reports along with the additional briefings and talks as part of the FDAP I find that the CSBA study promises newer ways of doing business, including warfighting.

A. I must emphasize that Captain Rubel asked me to participate primarily because of my historical investigations of naval innovation in the past. Accordingly, what I think I owe you is a qualitative assessment that is historically informed about the level of innovation as to fleet architecture reflected by the three reports. Thus, my criteria was primarily the “innovative-ness” of these architectures (which I also call *approaches*) as compared to each other, what exists today, and to precursors from the past. My secondary criteria encompassed what the US Army calls the “FAS test,” –feasibility, acceptability, and suitability—with feasibility being the most important of these three.

B. My definition of innovation, especially comprehensive systemic and institutional innovation at the macro level, is broad and simple. Innovation consists of distinctly new ways of doing business—tactical, operational, strategic, technological, organizational, and doctrinal.[[1]](#endnote-1) Innovation also has an iterative component that allows those innovating to “spread their bets: temporally and learn as they innovate.

 C. Contexts. Admiral, there are three contexts that bear on the analysis and that influenced my thinking about all three architectures, and fleet architecture in general. Changes in all three of these contexts might have significant impact on the efficacy of a particular plan and thus I favored the plan that seemed most “change-amenable.”

 -Strategic. The current maritime strategy (CS-21R, 2015) aligns loosely with the national security (NSS) and national military strategies (NMS). However this larger strategic context within which maritime strategy resides may in fact change substantially from a values-based system supported by CS-21R to a more interest based one that reflects something along the lines of what Barry Posen advocates in *Restraint*.[[2]](#endnote-2) It is no accident that the book’s dust cover pictures three US Navy warships.

 - Historical. We might also label this the geo-political “crap happens” context. I responded several years ago to someone who had claimed the United States, and the globalized word in general, had entered a post-naval era. My response, in a 2009 lecture to the CNO Strategic Studies Group and then in publication (2011), argued that the US was actually in a period analogous to an interwar period, something I called an “inter-naval” era. That era is over, but the fleet architectures and acquisition approach from that era (which might have begun in 1990), continue to linger. Threats to maritime security vis-à-vis US strategy are no longer opaque.[[3]](#endnote-3)

 - Budgetary. Senator John McCain’s white paper emphasizes the challenges posed by an uncertain budget environment, especially the Budget Control Act (BCA), on any long range planning for a distinctly different fleet architecture tied to a more ambitious construction program[[4]](#endnote-4).

2. Qualitative Innovation comparison. I will follow this qualitative discussion with what I characterize as “caveats” and then summarize, briefly, a possible way ahead.

A. Based on my reading of the reports along with the additional briefings and talks with other members of the FDAP I find that the CSBA study promises newer ways of doing business (i.e. more innovative), including warfighting, at a number of levels. The dual structure of the fleet architecture they propose—the maneuver (or surge) force and the forward deployed deterrent force—has great promise while at the same time being able to link today’s existing legacy fleet to the future construct. There is precedent for this sort of fleet in both the British Fleet prior to World War I (the dreadnoughts versus the flotilla-light forces with torpedoes) as well as the US Navy’s battle fleet versus scouting fleet of the interwar period (1922-1940).[[5]](#endnote-5) It does suggest, however, changes to the existing maritime strategy, especially what will suffice for warship presence forward. The two fleet construct seems to allow a graceful transition to 2030. This approach also seems to effectively leverage the *viable* technologies that will be available in 2030 (with the possible exception of rail gun). An area of concern is that we might be developing a fleet with no staying power—that is, a fleet that cannot fight a protracted naval war like those of most of the past 400 years. However, the idea of a surge or maneuver fleet force implies a fleet that can build up combat power if forward forces are rapidly attrited, overwhelmed, or pushed out of their initial operating areas soon after a conflict begins. Something along these lines happened in the Pacific in World War II when the Asiatic Fleet was effectively annihilated.

B. In the realm of feasibility, the dual-fleet structure seems to best support the operational warfighting concepts for fleet design from your paper—electronic maneuver warfare (EMW) and distributed maritime operations (DMO), to include the complementary concepts for the distributed lethality that underwrites DMO.[[6]](#endnote-6) This implies, across the board, different ways of organizing, training, and fighting. Too, the two-tiered approach allows for a smaller fleet should budgets remain static or decrease, although this would imply a change of strategy in order to maintain readiness.

C. The other innovative components of the CSBA construct are at the micro level and leave much room for experiment, evolution, and development of existing technologies. It is at this level that the three approaches have much in common, especially in support of your operational concepts discussed above, as well as the technological trends involving, for example, unmanned systems and their place in DMO. The CSBA proposal, in particular, has balance across a wide range of capabilities and seems to offer flexibility for fine-tuning if technological or other “black swans” occur. However, the other two architectures could be conceivably “reprogrammed” –or maybe reorganized is a better characterization—into the structure advocated by the CSBA study.

 D. Conversely, this approach does suggest considerable risks, even with its allowance for a graceful transition to the fleet of 2030. It implies that the current geopolitical environment can be managed to such a degree that building and testing and fielding the new components as well as modifying the existing elements in the legacy fleet will not overly stress program decision-makers. All three architectures will labor under the two significant contexts mentioned already—the tyranny of the budget and a national security strategy that might be in flux. Nonetheless, the CSBA approach, despite its risks, seems to offer a robust enough approach until more clarity on budget and strategy emerge, but it need not be derailed by the lack of clarity, although certainly the size of the fleet might be a much smaller version.

E. MITRE and N-81. These two architectures are also innovative, but based on my reading they are not *as* innovative as CSBA’s. More recently the numbers of platforms in both of these reports seem to have expanded a bit since I first read them. They seem to support a slower more traditional path of evolution, especially as regards the overall structure of the fleet. MITRE, for example, suggests a forward deployed posture that uses a phased approach that seems somewhat mired in the operational approaches of recent history seen in air campaigns (over Iraq and Kosovo)—something called a roll back approach where ground is ceded or given early on. Conversely, the MITRE approach could accommodate a strategic sea change by becoming a primarily CONUS/Hawaii-based fleet that surges for only the most important crises or conflicts. Ironically it, and to a lesser degree the N-81 approach, seem less suited to the “what if” of a protracted naval campaign occurring, especially if the positioning of major elements ready for war—in some terminologies Force Deterrent Options (FDOs)—is primarily forward. That said, I do believe both of these approaches can be underwritten by the operating concepts of EMW and DMO mentioned above. My sense for them is that they are better suited to current budget realities, but I worry that brings with them a way of thinking about maritime problems that is not fundamentally different from the past 20 years or so.

4. Gaps. All three architectures have significant gaps.

A. Logistics. One of the most telling comments I heard during our meetings was, “Whatever fleet we build it must have readiness built into it as part of the plan.” All three reports are weak in addressing long term logistics and supportability issues, although CSBA’s does make some effort in its discussion of how to use the fleet logistics shipping (e.g. AOs). This is a great concern [see caveats below] because the existing budget paradigm has led the Navy to point where it risks becoming a “hollow fleet” due to fragile readiness as was the case after Vietnam in the 1970s. If the geopolitical risks are assessed to be low, then this is not such a big problem, but when the Embassy in Teheran was seized the poor readiness of all the US military services’ forces came into sharp focus. This is my way of saying I will take a smaller more ready fleet than a bigger unready one. We had a fleet like that in 1914 with plenty of battleships, cruisers, and destroyers but not nearly the trained people to crew them.

B. Partners. When one reads the reports one gets the impression that the US Navy will be the “Lone Ranger” in any future fight with a major competitor in a primarily maritime environment. For example, it is hard to imagine that we might get involved in a fight to protect the maritime commons or sea lines of communication of an ally (e.g. South Korea) while at the same time not factoring in their support. Additionally, after the somewhat promising initiative of AirSea Battle that brought the Navy and the Air Force together to address the anti-access/sea denial challenge, the US Air Force is absent as well.[[7]](#endnote-7) Then there is the US Army (to say nothing of the Marines) that might contribute in an archipelagic geographical setting with forces ashore projecting power via means like anti-ship cruise missile batteries, THAAD, and ISR ashore. Finally, I had to ask myself, whatever happened to the “One Thousand Ship Navy?”[[8]](#endnote-8) Are these sorts of considerations simply regarded as “icing on the cake” or might fleet design and fleet architecture benefit a bit more from our experience of always fighting as a joint team and usually inside an international coalition?

5. Caveats. This section provides caveats or considerations that should inform any architectural decisions vis-à-vis the fleet we have today, to a way forward, and areas that I consider non-negotiable. They are in no particular order of priority.

 A. A *sine qua non* for any fleet of the future must be no erosion whatsoever in USW capability, for example the ability to conduct anti-ship sea denial in areas like excessive (or outright illegal) claims in the global commons. This means any report or plan that cuts back on submarine-undersea capability as it exists today, manned or unmanned, is unacceptable.

B. Next fight a missile – torpedo fight. The naval battle of the future has already been seen in history, especially at the Falklands in 1982. It will involve primarily missiles and undersea weapons with a healthy dose of electronic warfare and cyber. The cyber aspect is not yet well understood.

C. The network as a capital ship. Pursuant to caveat B above, and the plans for EMW and DMO, the network that supports these architectures, its graceful degradation, development of artificial intelligence options (or reserve modes), and command philosophy (i.e. Mission Command) constitute either the greatest strength, or greatest weakness, for any future fleet. Some have even compared what the network brings to the table to a capital ship, that is the battleship, aircraft carrier, or SSBN of the future. It is vital, but the people who design it, control it, maintain it, and use it across the spectrum of war are more important—human capital is the more important half of the “capital ship of the future.”

D. Technology. The Navy must use proven technology, do not bank on emergent technology that exists on paper and in formulas but is not something that can be operationalized into the constructs above by 2030. Avoid the Arthur C. Clarke “syndrome” of trying to skip a generation or two of technology that will be temporal anyway and balanced out if a protracted war is offered.[[9]](#endnote-9)

6. Implementation and Way Ahead. Implementing any of these architectures will require a very high level of commitment, experimentation and the development of enlightened and collaborative leaders as highlighted in CNO Strategic Study Group report (SSG 34/2016). In other words, committed leadership and Navy “buy in” by its best and brightest, both now and yet to come, is essential to make this architecture as efficacious as possible. Pursuant to this I have found that continuity of senior leadership is especially important in successful innovation—as you know Admirals Rickover and Burke both served in their terminal jobs longer than anyone else and the results for the nuclear Navy and larger Navy speak for themselves. The most successful innovators have tended to be long serving leaders at the top of their institutions. The next best approach is to ensure you have groomed a successor with the same vision (that gets the job!)—for example Rear Admiral Moffett had groomed Rear Admiral Ernest King as his replacement at BuAer prior to World War II as well as King’s eventual successor John Towers. His enlightened and progressive policies continued even after his tragic death in 1933.

Thus if it becomes possible for you or a successor to serve consecutive terms, for whatever approach is adopted, I think that would have great merit and go a long way toward fostering and sustaining innovation.

Finally, whatever the outcome of this process, it has got to translate into an observable break with the past, Cold War era, way of operating. It need not be radical per se, but it must be significant and not just a public relations campaign without substance. It must also be seen by the Maritime Services at large and the larger sea power community as such. NWDC is publishing a great deal of new doctrine on this score and, as with the Maritime Strategy of the 1980s and things like the Second Fleet Fighting Instructions that operationalized it, they must become “boiler plate” knowledge throughout the Navy and its diaspora of schools and training facilities ashore. There must be some light to go along with the heat of the discussion. I apologize for all the metaphors and thank you for your time.

Very Respectfully,

 John T. Kuehn, Ph.D.

 Professor of Military History

 Commander USN (retired)

 U.S. Army Command and General Staff College 913-684-3972 (w)

 913-620-5032 (c)

1. For a complete discussion of this definition see my book *Agents of Innovation* (Naval Institute Press, 2008), pages 1-6. [↑](#endnote-ref-1)
2. Barry R. Posen, *Restraint: A New Foundation for U.S. Grand Strategy* (Ithaca, NY: Cornell University Press, 2015), passim. [↑](#endnote-ref-2)
3. John T. Kuehn, “Is Mahan Dead?” in *Historically Speaking* (January 2011):30-32. [↑](#endnote-ref-3)
4. Senator John McCain, “Restoring American Power: Recommendations for the FY 2018-FY 2022 Defense Budget” (2017), 2-3. [↑](#endnote-ref-4)
5. For the Fisher construct prior to World War I see Nicholas A. Lambert, “Admiral Sir John Fisher and the Concept of Flotilla Defence,” in *Journal of Military History* 59 (1995): 639-60; and Thomas C. and Trent Hone, *Battle Line: The United States Navy,* 1919-1939 (Annaplis, MD: Naval Institute Press, 2006). [↑](#endnote-ref-5)
6. Admiral John M. Richardson, “A Design For Maintaining Maritime Superiority,” U.S. Navy (January 2016). [↑](#endnote-ref-6)
7. See John T. Kuehn, “Air-Sea Battle and its Discontents,” in USNI *Proceedings* (October 2013): 42-47. [↑](#endnote-ref-7)
8. See Current Strategy Forum, Naval War College, 14 June 2006. [↑](#endnote-ref-8)
9. Arthur C. Clarke, “Superiority,” at <http://www.mayofamily.com/RLM/txt_Clarke_Superiority.html> (accessed 2/10/2017). This cogent short story highlights how the “inferior science of our enemies” defeated an advanced technological society. It was written as a corrective during the early Cold War in 1951. [↑](#endnote-ref-9)