

## Naval War College Review

---

Volume 54  
Number 1 *Winter*

Article 9

---

2001

# Set and Drift: Naval Force in the New Century

Joseph A. Gattuso Jr.

Lori Tanner

Follow this and additional works at: <https://digital-commons.usnwc.edu/nwc-review>

---

### Recommended Citation

Gattuso, Joseph A. Jr. and Tanner, Lori (2001) "Set and Drift: Naval Force in the New Century," *Naval War College Review*: Vol. 54 : No. 1 , Article 9.  
Available at: <https://digital-commons.usnwc.edu/nwc-review/vol54/iss1/9>

This Additional Writing is brought to you for free and open access by the Journals at U.S. Naval War College Digital Commons. It has been accepted for inclusion in Naval War College Review by an authorized editor of U.S. Naval War College Digital Commons. For more information, please contact [repository.inquiries@usnwc.edu](mailto:repository.inquiries@usnwc.edu).

*Commander Joseph A. Gattuso retired from the U.S. Navy in 1998. He holds a master's degree in aerospace engineering and is a distinguished graduate of the U.S. Naval War College. He has served at the Naval Strike and Air Warfare Center, in A-7 and F/A-18 aircraft, at the F/A-18 Weapons Systems Support Activity, and at the U.S. Naval Academy. Commander Gattuso has been published in numerous professional journals. He is currently an independent naval strategist and futurist for Brandes Associates.*

*Ms. Lori Tanner served fourteen years as a naval aviator before leaving the service in 1997 as a lieutenant commander. After receiving her wings in 1985, Ms. Tanner served as an instructor pilot, aggressor pilot, and test pilot for the A-7 and T-45, and flew the F/A-18 at Weapons Test Squadron, China Lake, where she was also executive officer. She received her master's degree in aerospace engineering from the U.S. Navy Postgraduate School, Monterey, and holds undergraduate degrees from Michigan State University in mechanical engineering and theoretical and applied mechanics. She is currently employed as an independent strategist and futurist by Brandes Associates. Ms. Tanner has been published in numerous professional journals and has been a featured speaker on many panels concerning ethics and integrity in the military.*

*Naval War College Review, Winter 2001, Vol. LIV, No. 1*

## SET AND DRIFT

---

### NAVAL FORCE IN THE NEW CENTURY

*Joseph A. Gattuso, Jr., and Lori J. Tanner*

It is 1890.<sup>1</sup> The United States is flexing its broad, young shoulders, strengthened by an infusion of new immigrants, new technologies, and by American political leadership that represents the growing nation's outward-looking perspective. The United States desires to play on the world stage along with the great imperial nations. However, naval leadership has a different viewpoint. It is content with its small, coastal, commerce-raiding, Jeffersonian fleet. Then along comes a reticent, unlikable naval captain of middling reputation who captures the nation's imagination with his plan for a navy that will do battle at sea upon the great world stage. Alfred Thayer Mahan's concept of sea power perfectly matches the nation's vision of itself. What about the naval hierarchy? They exile Mahan to sea, noting in his fitness report that naval officers should not concern themselves with writing books. As it turns out, the Navy's leadership will be dragged kicking and screaming into the twentieth century, down the path Mahan predicted.

It is 1922. The United States has fought the war to end all wars. The political leadership, again representing the nation's view of the world, evinces a desire to retrench, to pull back from international involvement. The Navy, however, imagines a forward-leaning, internationally involved nation, with fleets of battleships leading the way. Its views are so mismatched with those of the government that the political leadership effectively excludes the Navy from meaningful participation in the Washington Naval Treaty—an event that would have significant implications for the Navy's force structure in the next world war.

It is 1947. U.S. political leadership has one picture of how it wants to project power, and once again the Navy has another. The admirals revolt—with predictable consequences. The Navy loses a significant portion of its leadership as the world enters the Cold War, and it suffers a loss of political clout and a degraded reputation among the American public.

It is 1970. The nation is in the throes of sweeping change. The Navy struggles to match its missions to the international environment, but for the first time it encounters the “gasoline fuel in the diesel engine” dilemma. Its organizational structure is ill matched to social input and ill prepared for the rapid shift in the political foundations of the country. It sputters and becomes a hollow force.

What do all these periods have in common? Just this—that the Navy’s picture of the world, or what Edward Rhodes calls its “cultural-cognitive framework,” did not match that of the political leadership. This mismatch, whenever it occurs, has disastrous consequences for the Navy and the public it serves. The United States is now approaching a similar period in history. This time, however, the problem is shaping up to be not only a strategic mismatch but one of technology and organizational structure as well. In light of these three critical fault lines, the Navy’s perch at the dawn of the new century is a precarious one.

#### THE STRATEGIC MISMATCH

The Navy operated in a Cold War international system from 1947 until the fall of the Berlin Wall in 1989. Most strategic observers agree that globalization (to varying degrees) is now the emerging international system. We have seen globalization before, but never with the pervasiveness or intensity of today. To form a clear picture of the ramifications of globalization for military organizations, compare the Cold War international system of well defined geographic boundaries to globalization’s rabid need to eliminate borders. The fundamental operating paradigm (at least for the West) of the Cold War—constrained capitalism was embodied in two words—“Stop communism”—while the fundamental operating premise of globalism is to spread democratic, free market capitalism. The Cold War put a premium on separatism, maintaining the status quo, stability, and tradition; the key character traits of a globalistic international system are speed, innovation, chaos, and “churn.” The Cold War had its own ideologies, demographics, technologies, and politics that formed particular domestic policies, foreign relations, economic policies, and military structures. Militaries of the Cold War period were noted for their weight, mass, technology, and firepower; their fundamental *raison d’être* was pure and simple—destruction. Globalization has its own ideologies, demographics, technologies, and politics, which form different domestic and foreign relations frameworks, technologies, and economic policies.

But wait—we still have a Cold War military structure, with the same *raison d’être*.

There is a lethal tension within globalism that will determine the roles and missions of future forces. Those who consider economic prosperity the best hope for global stability will bring immense pressure to bear to ensure

unimpeded access to economic markets on a global scale. But others consider family, tribe, race, religion, or the environment to be inviolate values. The global economy, indigenous cultures, the environment, and international crime are “globally sovereign issues” that threaten the entire planet if not properly addressed.<sup>2</sup> Watch for the phrase “The New Security Agenda,” which embodies this new philosophy.

In the past, the successful nations were those who best tailored force structures to meet political objectives. There has always been a duality in conflict: due to the very nature of divergent political objectives and the unlikelihood of frightening global consequences should one ideology meet its demise, someone would win, and usually someone would lose. However, this period of globalization is different. The future global community will have to tailor its forces to meet new, worldwide political objectives. The planet is just about filled up, and globalism puts a dangerous twist on the old zero-sum political game. For perhaps the first

---

*What about the naval hierarchy? They exile Mahan to sea, noting in his fitness report that naval officers should not concern themselves with writing books.*

---

time in history, mankind will discover that if any one ideology wins, everyone might lose. If the global economist succeeds in overpowering the environment, no one will have a place to live. If the environmentalist

succeeds in imposing excessive controls, the poor in many nations may remain poor, and without jobs they will destroy the environment so they can eat.<sup>3</sup> If the monoculturalistic steamroller of globalism sweeps away even one culture, somewhere on the globe, it may take only one disgruntled idealist to cause massive human destruction or ruin environmental resources. If issues of national sovereignty impede the fight against international crime, that crime may soon erode all nations. If issues of national sovereignty become licenses to commit crimes against humanity, rampant global conflict may result as neighbors get nervous and intervene militarily, igniting a worldwide domino effect—in the global village, everyone is your neighbor.

Typically it has always been one side against another, but in a global village, there *is* only one side. What, then, should forces that are designed to look after security and defense be about? More to the point, what defines “security and defense”?

Within the United States there is one common thread to that definition, one thing the American public will not suffer—a threat to its personal prosperity. In America and much of the world, that is what the public will fight for, and it is certainly what it votes for. Thus the question of roles and missions for future forces must occur within a framework that has little to do with any issue of national sovereignty (observe the presidential candidacy polls in 2000 for Mr. Pat

Buchanan). America has a global economy that is currently generating the greatest economic boom in its history. Purely national interests no longer define the American public's emerging desires; securing what it wants will mean securing the global economy. There's the rub.

The global economy might best be described as "biological imperialism." There is no central point of control. One and a half trillion dollars move around the world *every twenty-four hours*, driven by the interests of a wide range of global investors. These investors vote every minute, not every four years. Governments are finding their internal freedoms and political latitude restricted as they are compelled to establish certain economic or political policies to stay plugged into the massive flow of investment capital. If they do stay plugged in, they get rich; if they do not, they get poor—very quickly. This biologically imperial globalistic economy grows on the opportunities it chaotically creates by and for itself.

Empires have three basic needs: expansion, trade, and security. In today's interconnected world, the global economy will demand the same. Why? Wherever in history an economic system has sprung up and flourished, shortly thereafter a military force has appeared to secure that system. Therefore, in a global economy, one expects that a military force (perhaps not a global force, but most likely one with globalistic priorities rather than national ones) will appear to protect it.

The missions of a future global force can be found in three straightforward goals. First, a naval force for the future will be required to further the expansion of the global economy, most probably by creating or fostering, wherever it goes and in whatever it does, an environment conducive to globalization. Second, sea power (on the sea or not) will be needed to ensure the openness of trade everywhere around the globe; it is a global economy primarily because goods can be shipped anywhere in the world by water, at insignificant cost. Third, ensuring free trade will mean ensuring communications. Force may be needed to disrupt or deny systems or infrastructures—not blow them up, since someone will have to pay to replace what gets blown up, and in our connected global economy that means anyone who has any investments whatsoever in any country. Sea power may also be required to "stand up" an on-scene, ad hoc financial system to maintain a crisis region's economy, or to ensure the fair and humanitarian application of embargoes and sanctions.

Security for such an economy will require a vastly different approach than our current one envisions or permits. Force in the new century must secure globally sovereign issues, which will mean much more than what we now think of as things military. It means a force connected to global expertise in economics, politics, the environment, culture, civic infrastructure, science and technology, and, not to forget, defense.

The strategic environment of nations determines the nature and demands of their national security requirements—nations being essentially the “customers” for any forces charged with their security. The old international system (the old customer, collectively) demanded a certain type of military force. Well, the customers are changing, and they want different things. Somalia, Kosovo, and East Timor are pregnant with significance for those responsible for force structure. The convocation of nations in a global society no longer wants forces that will blow up things and wreak economic, environmental, and political havoc with neighbors.<sup>4</sup> Just like any other customer, nations will get what they need where they can. America has no monopoly in this market; in fact, its current defense product does not appear to be shaping up to meet this emerging need.<sup>5</sup>

#### THE TECHNOLOGY MISMATCH

The weapon systems in today’s military were conceived, designed, and developed during the industrial age. They no longer match the networked world. In network environments, mass of any kind tends to become a target. The economics of leveraging dumb power will drive those who depend upon high-cost, cumbersome complex technology right into the fiscal dirt.<sup>6</sup> Aircraft carriers are today’s battleships—national treasures that may become too valuable to risk when some Osama Bin Laden figures out (soon) how to do them in, with any one of a number of asymmetric strategies. More probably, the carrier will become obsolete because of its aircraft. Weapon systems today that shoot down manned aircraft are dependent upon technologies that are advancing much faster than the aircraft themselves. Precision guided weapons—which are what surface-to-air missile (SAM) systems are—depend upon computer, sensor, network, miniaturization, and communications technologies. Aircraft depend upon material and propulsion technologies, and their greatest limitation is the need for a human-friendly environment.

Which group of technologies is progressing faster? One day soon, in a cultural battle, someone will no longer wish to put up with arrogant Western overflights. Some nation or group will buy a few “sons of SA-10” that can be fired by connectivity between cell phones, laptops, and a department-store telescope. The United States will launch a few F/A-18E aircraft (remarkably procured on time, on budget, and under weight), with their (equally remarkable) joint stand-off weapon or joint direct-attack munitions, to blow up a bridge, probably, and not one of them will come back. U.S. air forces of every service have already conceded air superiority to certain SAM systems. Who do we think will get better faster?<sup>7</sup> The United States is making a few well-armored knights, and they will face a forest full of peasants with longbows.

Cruise missiles will replace manned aircraft and sink the ships that carry them. This is both good and bad news for the DD 21 crowd. Yes, the advocates of that advanced new destroyer program will probably see the strike role migrate to their platform, because foreign adversaries will have SAM systems that manned aircraft cannot approach (after some “Pearl Harbor” event for manned aircraft). Unfortunately, those adversaries will probably also invest in surface-to-surface missiles as capable as the air variety; those big floating pieces of metal, no matter how high-tech, snazzy, or expensive, will be in dangerous waters.

It is interesting to note that unmanned aircraft, smaller than current surface-to-air missiles, will take over the role of manned aircraft in the same way that aircraft usurped that of the battleship.<sup>8</sup> The future for big metal ships is less clear, but it may be along the same lines.

The U.S. Navy recognized in the 1920s that it needed to develop new aviation technology. It assigned Admiral William Moffett the task of developing not only

---

*For perhaps the first time in history, mankind will discover that if any one ideology wins, everyone might lose.*

---

the technology but the organizational structure, doctrine, and culture that would enable the new technology to come to fruition. So far, naval aviation has not shown the

foresight that once enabled its own heritage. Unmanned airborne vehicles (UAVs) and unmanned combat airborne vehicles (UCAVs) are now accurately described as “redheaded stepchildren” in the bottom-line pecking order of funding. The danger here is that carriers and their aircraft constitute a senile weapon system, rapidly approaching obsolescence. Over fifty years ago, U.S. naval aviation was ready with a powerful, and young but eager force, when the “Gun Club”—the battleship admirals—woke up to find their champions in the mud at Pearl Harbor. It is not so with the UCAV world. The gap between the senility of U.S. naval aviation’s force structure and the vitality of unmanned forces is dangerously large. Given the U.S. industrial-age acquisition system, the Navy’s shortsightedness may very well degrade national security.

Missions designed to secure sovereign interests will demand much that manned aircraft are unable to do. Aircraft will need to stay airborne for days on end, going where perhaps manned aircraft cannot, to places where we do not wish to risk human lives. Today naval aviation’s power is largely limited to the single venue of the aircraft carrier, and even that niche is rapidly dwindling as cruise missiles take a bigger chunk of the market. UAVs and UCAVs would enable a new force to gather information from, and act through, many more platforms. Since a force designed to secure global interests must act globally, and since no nation will have the resources to build the number of carriers the new century will require, the answer must be to use something else. Money spent furthering



manned aircraft technologies and programs—the CVNX (proposed *Nimitz*-class carrier replacement) being one of them—is like polishing cannonballs so they will fly a little farther.

Current U.S. efforts in the direction of network-centric warfare (NCW) are worth mention. I am reminded of two technicians standing in a room full of completely integrated nuts, bolts, screws, and parts. “Well,” says one, “we’ve finally made everything connect to everything else.” “That’s right,” says the other, “but what do we build now?” The Navy’s current approach to NCW is properly described as platform-centric; there is a focus on the platform, not the quality of the network. The Navy’s expertise resident in its networks is based entirely on Cold War mentality—a hope to do the same things faster and more precisely by tying the players together with computers.<sup>9</sup> The Navy must recognize that the expertise residing within a network is more important than the design of the network’s nodes, and that the appropriate type of expertise is dependent upon the customer’s needs. The Navy would be well advised to meet those needs before the customer goes elsewhere, and it should not look in its wake to do so.

#### THE ORGANIZATIONAL STRUCTURE MISMATCH

Networks are the new world. Today’s U.S. industrial-age military places priorities on things that information-age constituents just “don’t get” or even want to. The current exodus of personnel from the military has nothing (and everything) to do with pay, time away from home, operational tempo, or any other reason we read about. The fundamental cause for the mass exit is that the military’s industrial-age structure is now recruiting people who were raised in the digital age and possess a completely different structure of values. In the networked world, information—and therefore loyalty and dedication—diffuses. The results now being seen in personnel retention, budgetary pressures, maintenance and parts levels, and operational performance should not be a surprise. The Navy is using gasoline to run its diesel engine. The solution is simple but hard—get a new engine that will match the available fuel.

Networked environments put a premium on innovation. Contrary to the opinion voiced at the top levels, the majority of the Navy perceives that innovation is discouraged within the organization, not encouraged. This might be explained by the fact that what passes for innovation in today’s Navy would have been laudable in yesterday’s Cold War structure (the current naval leadership’s “cultural-cognitive framework”) but to the digital worker-bees in the trenches, the efforts are so meager compared to what the new environment demands as to be laughable. Think about it. Who makes up and then runs current innovation efforts, lieutenants or admirals? Who is in charge of formulating and then reporting the lessons? Any organization rooted in maintaining tradition and the status quo

will have a short life in the new world. If its leadership cannot keep up, then the organization, however skilled, dedicated, innovative, or self-sacrificing, will die.

Networked environments demand speed—speed of responsiveness, speed of innovation, speed of organizational reactions. The Navy’s organizational speed—the speed with which it creates new organizational structures; conceives, designs, develops, and acquires new weapon systems; or reacts to the external cultural-cognitive framework of national or global leaders—is dangerously out of synch with that of other institutions. Even more dangerous is the tendency to use current organizational structures and solutions to bring

---

*Just like any other customer, nations will get what they need where they can—America has no monopoly in this market.*

---

about radical, revolutionary change. It is dangerous for two reasons. One, it gives the organization’s leaders the impression that they are “doing something,” which causes

complacency; two, assets expended on “doing something” are assets that could have been used along more productive, more innovative vectors. To survive the vast disruption caused by the shifting foundations of our new world, organizations must deconstruct and then remake themselves into something new that may not resemble the originals at all. Fatal to most organizations in such a situation is the fact that those who are most adept at maintaining the status quo are *the last ones* to spearhead creative deconstruction and reconstruction efforts. “Fair-haired,” fast-track players need not apply; get the trouble-making mavericks. If the Navy hesitates, if it draws back or just “commissions a study” to consider what to do, the pace of events will overwhelm it, like so many other organizations stuck in the past. It will be too late.

#### FORCE IN THE NEW CENTURY

The requirement to secure sovereign issues globally, and in combination with the particular dynamics of the networked world, will extrude a new type of force. Such a force will focus not on destruction but on proficiency in gathering, analyzing, and acting on information within appropriate time frames. This is the type of force the Navy needs to integrate. Rather than operations based on geographic or finite temporal objectives (relics of an industrial-age, militaristic mind-set), such a force will be required continuously to generate information and provide options for exercising global political leadership in every social dimension. Rather than consuming information for the purpose of destruction, a force that secures globally sovereign issues must *produce* information centered around its defining role of securing the global economy, and it must do so without violating other people’s basic cultural, religious, ethnic, or traditional values. Human nature will always require arbitration of violence—the need to

kill people and break things will not go away. Still, force in the new century will require a different primary role. It must focus on the nonviolent management of conflict.

The new force must have unparalleled connectivity with every dimension in society. Global security will demand forces to keep in close touch with the finest expertise on the planet. Economics, politics, the environment, culture, civic infrastructure, science and technology, and defense are social dimensions that define the scope and breadth of this new force—*this* is what network-centric warfare should really be about. Naval forces should focus on building networks into every social dimension. We may be tempted to say that the “Navy after Next” will meet these needs. Unfortunately, however, the world is moving at a speed that makes such an approach negligent at best, fatal at worst; the United States must create the “Navy after Next” now. If it does not, someone else will. Someone else may create a navy that, whether or not it can compete with the United States, will be able to assume the role of securing emerging globally sovereign issues—and that will have disastrous consequences for the United States, and for its navy.

Lastly, there is the issue of time. Behold the dichotomy of the age: a world that lives and moves at the speed of light finds its survival dependent upon solutions that span decades. Technology shrinks moral horizons (Einstein was a pretty sharp guy). Powerful technology shrinks them faster. Security for the global citizen will require that those horizons be restored, enlarged, and invigorated. Only a force that is proficient in every dimension of society can bear upon the world’s moral horizons. It is in this way that *today’s* Navy (not the Navy after Next) should approach its roles and missions. Networked to *all* the dimensions of human society, the Navy should conceive, design, and institute processes, maintain a presence, and act with a responsibility and a conception of time that extend across generations.

---

#### NOTES

1. This historical sequence, as well as a full discussion of the concept of a “cultural-cognitive framework,” may be found in Edward Rhodes, “Constructing Power: Cultural Transformation and Strategic Adjustment in the 1890s,” in *The Politics of Strategic Adjustment: Ideas, Institutions, and Interests*, eds. Peter Trubowitz, Emily Goldman, and Edward Rhodes (New York: Columbia Univ. Press, 1999), pp. 29ff.
2. Note the difference between “globally sovereign issues” and issues of “global sovereignty.” The former identifies a variety of issues with separate but equal authority or importance to the survival of the global citizenry. The latter describes a single entity—a single, overriding source of authority that embraces all other issues.

3. Most of the drastic environmental damage in the world today occurs in poverty-ridden areas.
4. Macedonia, a pro-Western nation in the Balkans, now finds its economy in shambles because the economy of its major trading partner, Serbia, has been severely impaired. There is concern over the destruction of facilities that causes environmental damage in the region that spreads to allies nearby. Also there is, and will always be, concern about causing mass casualties among neighbors who will have to live next to the victimized area after the destructive force returns home.
5. The European Union plans to establish its own defense force. See, for example, *The Economist*, 4 December 1999, p. 18, and *The World in 2000*, a special offprint from the offices of *The Economist*, 1999, p. 54.
6. “Dumb power” is best illustrated by a true story. There was an Australian cattle rancher with fifty thousand square acres. He could put up a very expensive UAV that monitors everything—it has a sensor for every conceivable spectrum—but he could afford only one of them. Another option was to place in the horn of every animal a five-cent chip that would report the animal’s position. He could also put a chip in every water tank to report if it was empty or full. He could put a chip at every gate to report if it was open or closed. In this way, he could get a very clear picture of his operation. This is leveraging dumb power. Find this story and other explanations like it in Kevin Kelly’s *Out of Control: The New Biology of Machines, Social Systems, and the Economic World* (Reading, Mass.: Addison-Wesley, 1994).
7. This is a scenario in a context most traditionalists will understand. A more likely option, however, will be for the opponents simply to hire someone to shoot the aircrews’ spouses and children in their homes.
8. It is interesting to note the parallel. Once upon a time, the Gun Club was willing to let aircraft scout. The airplane could not do much else. Today, naval aviation is kind enough to let UAVs scout for it—reconnaissance missions and such. It cannot do much else—or can it?
9. A cursory reading of the history of information technology in the commercial sector for the last thirty years would quickly deflate this false hope. Automating old processes never works.