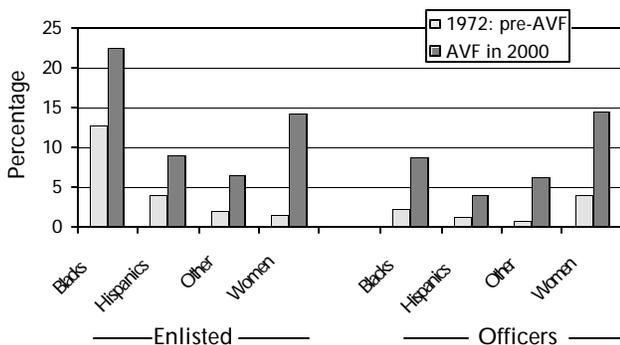


America's military: A coat of many colors

When we began the volunteer military almost 30 years ago (1973), the military was, for the most part, a white man's system. Since the inception of the all-volunteer force (AVF), minorities have made sizable gains in the enlisted force. The number of blacks has nearly doubled; Hispanics have more than doubled; other minorities—including Asians and Native Americans—have more than tripled their representation; and the percentage of women in the enlisted force has risen steadily (figure 1). In the officer corps, minority representation has more than tripled. Why?

Figure 1. Minorities and Women: 1972 and 2000

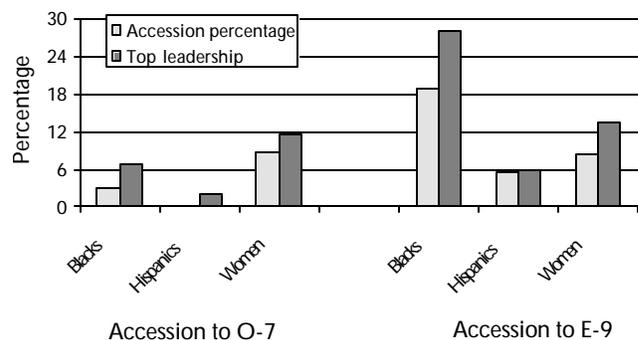


At first glance, the new system didn't seem friendly to newcomers. In an internal labor market, like that of the military, everyone starts at the bottom and goes through the same vetting process. If women and minorities were going to make it to the top, it would take a long time. The promotion process in the Services is both well defined and widely believed to be one that advances the most qualified to the higher ranks. Thus, women and minorities would gain credibility as they went through the process. Perhaps even more important, the promotion process looks at "everyone." No one enters the military in a job track without advancement opportunities.

So, although newcomers have to start at the bottom and wait more than 20 years to reach the top ranks, if they reach the top, they will be competitive with their white, male peers. They had been screened, vetted, and promoted by the same process.

Average length of service for O-7 (Rear Admiral in the Navy and Brigadier General in the other Services) is 28 years. Thus, to determine how well the military has integrated women and minorities into its top leadership positions, we need to look back to accessions some 28 years ago. Figure 2 shows both the accession representation and the representation for generals and admirals today—a huge success story. For the enlisted force, the proportion of accessions who make it to the top rank, E-9, is constrained by law to be no more than 1 percent of the force. Thus, achieving that rank is an extremely competitive process. As seen in figure 2, women and minorities are more dominant in leadership positions today than they were as new entrants.

Figure 2. Making it to the Top Leadership: Today's Military



During the drawdown of military forces between 1987 and 1997, there was considerable concern that minorities would be disproportionately affected by the "last-hired, first-fired" phenomenon. That didn't happen—in either the enlisted ranks or the officer corps.

In summary, in the years since the advent of the volunteer force, our military has increasingly become more racially and ethnically diverse and appears to have successfully integrated women. Moreover, even though the process from entry-level to top-leadership positions has taken a long time, the current leadership of both the enlisted and officer ranks has richer minority and female representation than the accession cohorts from which they were drawn. (Dr. Aline O. Quester, (703) 824-2728)

Targeting process dilemma

Target approval by the National Command Authorities (NCA) has been a constant in post-Cold War operations, but the nature of that approval has varied from one operation to another. In some operations, the NCA reviewed and approved all targets; in others, the NCA approved broad categories of targets. In some operations, the NCA required explicit approval of individual targets before they could be struck; in others, the NCA reviewed the target list as a whole before the operation so that it might veto individual targets. Very rarely in the post-Cold War period has the NCA directed that specific targets be struck.

When combined with the target development process, NCA target approval poses a dilemma for strike planners. NCA approval takes place during target development—much earlier in the process than the weaponeering and targeteering decisions that are made during execution planning. The dilemma? NCA approval depends on the kind of information normally not generated until the target is being planned for strike, but the target cannot be planned for strike until it has received NCA approval. In a study for CINCPACFLT, we examined how targets are developed and approved for strike and offered recommendations for resolving the dilemma posed by that process. (Mr. Richard Brody, (703) 824-2888)

Public Affairs 2000/PAO-21

With cellular phones, satellite communications, and the Internet, people can find out what is happening virtually anywhere at any time. The news media have capitalized on these advancements and now routinely report on events in real time from around the world. As a result, public perception—shaped by the information the public receives—increasingly affects the course of military operations. The military must communicate and interact with the public and the media; it must help them understand the military, what it does, and why. Public affairs provides the military with the link to inform and educate the general public and the media. Because of the importance of keeping the public informed and telling the Navy's story, CINCPACFLT asked CNA to examine the Pacific region public-affairs (PA) community and help plan future PA capabilities. We learned that public affairs achieves success and that focus is key to that success. Of the public affairs events we examined, the most successful were focused on a message and tailored to their audience.

After identifying the most important issues affecting PACFLT public affairs, we recommended that PACFLT: (1) Communicate the above lessons to the line commanders, who provide the guidance that determines the course of PA. (2) Focus on purpose, which will allow the command to identify its intended audience and tailor the event to achieve that purpose for that audience. (3) Shed the unnecessary and inefficient. PACFLT public affairs should identify those activities that provide limited return and either restructure them or recommend they be eliminated. (4) Integrate public affairs into the command, which will allow for better planning and more proactive public affairs. (5) Revisit cost and benefit. Determining the effectiveness of a public affairs event will allow PACFLT to examine the cost and benefit of its activities and the optimal use of its limited public-affairs resources. (Dr. John S. Ivancovich, (703) 824-2275)

Defending domestic Navy bases from CBR attack

Attacks against naval bases with chemical, biological, and radiological (CBR) weapons have some unique aspects. They almost guarantee some of the ships at the piers will be affected. Commanders are then faced with decisions regarding sortie, decontamination, treatment, and evacuation. Ships already affected by the attack may have departed the base, further complicating the operational problem that has to be dealt with through a complicated, two-track chain of command, with the fleet commander responsible for some aspects of the problem and the base or regional commander responsible for others.

In a study for CINCLANTFLT, we conducted a simulation game in which emergency responders, local authorities, medical-care providers, and federal agency representatives worked with Navy commands to mitigate a hypothetical biological agent release at Naval Station Norfolk. The game also addressed who should act as a JTF commander for consequence management on base. Our analysis helped identify the challenges the Navy would face in a domestic CBR incident: agent identification, medical treatment, base access management, command and control of ships at the pier, and multi-source information fusion (medical community, first responders, civilian authorities, and Navy command chain). Overall, this work illustrated the complex, interdependent nature of a response operation on a domestic naval base, and developed some important insights into options for commanding the response operations. (Dr. Barry Howell, (703) 824-2041)

Information technology support to the warfighter

The Navy is growing increasingly dependent on modern information technology (IT) systems to support tactical command and control. Although guidance exists for some aspects of IT, much of it remains vague, immature, untested, and not

endorsed by Navy commands. For the most part, battle groups develop their own IT policies and procedures. Without authoritative guidance and common standards, the Navy risks not making effective use of the technology or, worse, operating battle groups under different IT policies and with incompatible software, thus prohibiting interoperability with other battle groups. CNA, with OPNAV and the fleet, is looking at where and how IT systems are being used today to identify ways to improve the integration of IT systems into battle group operations. As part of this work, we are shaping the policies that should guide the Navy's use of IT and helping battle groups select appropriate systems.

Key to the success of the Navy's plans to employ its warfighting forces in a network-centric environment will be the ability to harness the combat power of networked sensors, weapons, and platforms and to use a full range of interoperable C4ISR systems to build a comprehensive and accurate picture of the battlefield, facilitate collaborative planning, and make timely and accurate decisions that enable the Navy to position platforms in the right place at the right time, and, whenever necessary, to put weapons on target. The IT standards, metrics, policies, and best practices resulting from this project will help make this possible. (Mr. Dennis P. Shea, (703) 824-2352)

Electric power requirements for advanced weapon systems

The Navy has been exploring ways to generate, store, distribute, and convert large amounts of electric power for ship services and propulsion. The Navy has also investigated various concepts for the use of lasers and electro-magnetic guns. The Secretary of the Navy's decision to acquire an all-electric-powered combatant raised several issues—one of which was whether that ship would be suitable for integrating the new weapon concepts in the future. Thus, we examined the operational performance of rail guns and lasers in typical tactical situations, the associated electrical

power requirements, and the major weapon components that affect the integration of ships and weapon systems. We concluded that these weapon concepts are feasible and potentially effective for the missions investigated but will require substantial development investment with considerable risk before they become operational. (Mr. Barry G. Pifer, (703) 824-2475/Dr. Frederick Bomse, (703) 824-2296)

Advanced land-attack missile

At the Navy's request, we investigated its operational need for an advanced land-attack missile (ALAM) that meets 21st-century long-range, fire-support requirements. We then identified potential options and analyzed the performance, effectiveness, and cost of each, including an evaluation of a variety of warheads for those options. We concluded that the Navy first needs to select a missile concept. The choices were a subsonic cruise missile; a Naval version of the Army's Tactical Missile System (NTACMS); a "generic" boost/glide missile designed to meet the operator-specified ALAM requirements; and a generic supersonic cruise missile.

If the Navy wants the most cost-effective alternative, we believe a generic boost/glide version of ALAM is the answer. But, if overall program cost is the driver and the Navy has only a certain amount of money to spend, development costs make the generic boost/glide option less attractive because it drives up the unit costs of missiles. In such circumstances, we believe the Navy has three less-capable choices: the subsonic cruise missile if long range is more important than responsiveness; NTACMS if responsiveness is more important than range; a boost/glide with no anti-armor submunition that would provide

partial capability responsively at long range. The Navy is using our results to prepare for a Defense Acquisition Board review of the ALAM program. (Mr. Dwight Lyons, (703) 824-2595)

Future training options

Naval forces have conducted training, including live fire, for decades at the Atlantic Fleet Weapons Training Facility at Vieques in Puerto Rico. The Navy has been under increasing pressure from Puerto Rico to stop training on Vieques. As a result, the Secretary of the Navy has announced that all training activities at the Vieques range will end by May 2003 and that future training methods and training ranges, absent the Vieques range, must still support the effective training of mission-ready naval forces.

The Secretary has asked CNA to identify options, including alternative sites and training methods, to ensure that deploying Atlantic Fleet naval forces are trained and ready to meet their operational requirements. A team of military experts and a team of operational training analysts will address a wide range of operational training issues. These teams will comprise senior retired flag and general officers from all four Services with recognized expertise in aviation, battle group operations, fire support, amphibious and ground operations, and associated training requirements. These experts and analysts will identify and assess potential alternative training methods, technologies, and sites and will report to the Secretary early in 2002. (Dr. Alan C. Brown, (703) 824-2358)