Measuring U.S. Military Readiness

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Are U.S. armed forces ready? That is, can they accomplish the likely near-term missions that they are designed to handle? These questions were central in the 2000 presidential campaign, not to mention in congressional hearings throughout the last half-decade. Phrasing the issue in this way leaves aside the broader strategic question of what America’s military should be ready for—a question that is admittedly at least as important, but different. Measuring and understanding traditional military readiness, narrowly defined, is difficult and contentious enough that it warrants separate treatment. We attempt to provide such an assessment here. On the whole, today’s U.S. military is in good shape—comparable in general to typical levels during the 1980s. It is not as ready as the military of the early 1990s, however, and several trend lines have continued downward in recent years. Existing problems require prompt attention before readiness deteriorates to the point where it significantly affects U.S. military capabilities and security interests.

CURRENT AND FUTURE U.S. MILITARY READINESS

To assess military readiness, the proper approach is to inquire if the U.S. armed forces have enough of the right types of skilled and adequately trained personnel, and if they own adequate stocks of equipment in good
working order. Although a plethora of readiness statistics and stories exist, all ultimately bear on these two broad issues.

Analyzing readiness in this way is intentionally somewhat narrow. It focuses on the nuts and bolts of well-understood military operations. It does not address the broader question of strategic readiness—whether the United States as a country has prepared for the right types of threats, and developed the right types of policy instruments to address them. This article simply focuses on the internal consistency of Pentagon plans. Given how the Department of Defense and the U.S. Government as a whole have assessed and described threats to the country’s interests, have they also maintained military forces capable of handling those likely threats?

Even when the question of military readiness is put in these rather limited, technical terms, it is a difficult and contentious matter. In fact, it was this rather narrow question that played heavily in the recent presidential campaign. Then-Texas Governor George W. Bush alleged that the military was suffering from “long neglect,” having been underfunded and over-used during the Clinton-Gore administration, with two Army divisions simply unready for combat and many other units strained and weakened. Vice President Gore and his running mate, Senator Joseph Lieberman, claimed in rebuttal that the U.S. military was in outstanding condition. With a few exceptions, these debates were generally not about broader matters of strategy and grand strategy. They were about the day-to-day condition of military personnel, equipment, and individual combat units. But even if the issue was somewhat overrated in the presidential race, it is nonetheless important.

It was to the credit of then-Governor Bush and his running mate, former Defense Secretary Richard Cheney, that they raised the issue of readiness, and largely to the Republican-led Congress’s credit that measures have been taken in recent years to improve readiness. That said, available data and other information suggest that the Democrats’ claims during the 2000 campaign were mostly right. Today’s military, while strained and in some cases overworked, remains strong and competent to handle the kinds of missions contemplated by current Pentagon plans. As General Henry H. Shelton, the chairman of the Joint Chiefs of Staff, pointed out, Bush was plainly wrong when he said in his speech to the Republi-
can National Convention that two Army divisions were unready for duty. The data Bush used was old, and no longer valid. Moreover, in a broader sense, the reason those divisions had been declared “unready” was that they were partially involved in on-going operations in the Balkans. The fact that the Pentagon considered them unready because they were deterring Slobodan Milosevic and helping keep the peace in an area of key U.S. national interest in Europe, rather than training to fight in Iraq or North Korea, is an artifact of a strange and somewhat myopic readiness measurement system making little strategic sense.1

Indeed, some readiness indicators should simply not be taken too seriously. As another example, the purported cruise missile shortage that Dick Cheney criticized during the 2000 presidential race still left the United States with an inventory of almost ten times as many cruise missiles as it used in Desert Storm.2 The shortage of a new weapon, the joint direct attack munition (JDAM), in Operation Allied Force in 1999 was not due to negligence in military planning or inattention to readiness, but to the fact that JDAM was new at the time, and only a modest number had been produced by the time NATO went to war against Serbia.3

In a broader sense, however, there are enough signs of strain in the force that more remedial measures are called for. By most readiness indicators—such as the quality of people, mission-capable rates of equipment, and rigor of training—the U.S. military’s condition was as good in 2000 as it had been through most of the 1980s. However, readiness in 2000 was not as good as in 1990 or 1992; readiness levels did head downward during most of the Clinton-Gore era. That trend was beginning to be arrested by the time of the 2000 presidential campaign. But it remained—and remains—worrisome nonetheless. The men and women of the U.S. armed forces, while still showing reasonably good morale and performing very well in missions abroad, are more discouraged about life and conditions within the military than they have been in two decades.

Moreover, given how much today’s military is being used, and how much smaller it has become, it may not be adequate for readiness levels to be comparable to their 1980s values. Such a statement is counterintuitive, given how many resources Ronald Reagan devoted to the military. But the armed forces of the 1980s were focused at least
as much on deterring a major war that never happened and was not, by then, particularly likely to happen, as on conducting various operations around the world. Today’s armed forces have more immediate and frequent missions, and are deterring conflicts in the Persian Gulf and Korea that are probably more likely than was a third world war between NATO and the Warsaw Pact by Reagan’s time. By such reasoning, today’s military should be more ready than President Reagan’s had to be.

The following assessment of readiness examines the issue from five perspectives. The first focuses on spending for readiness. The next two pertain to the near-term preparedness of the military—readiness in its most literal sense. One focuses on the condition of equipment, and the other on the quality, preparedness, and availability of personnel. The Clinton-Gore administration deserves a fairly high grade in these first three categories. However, for the next two categories—ensuring equipment readiness and personnel readiness for the decade to come—it deserves only a mediocre grade. Because U.S. military equipment is aging rapidly, and because many personnel feel over-worked and over-deployed, a continuation of recent trends in hardware and in personnel could erode readiness over the years ahead. Fortunately, there are some indications that the recent negative trends are being reversed, but the country is hardly out of the woods yet.

Spending for Readiness
There is no clear single account for readiness, but the operations and maintenance (O&M) budget is the best proxy. It funds everything from training to repairs to purchases of spare parts to deployments. (Funding for personnel is considered as part of a broader analysis in the following section.)

Per active-duty person, resources for operation and maintenance increased greatly in recent years—from levels around $52,000 in 1985, to $56,000 in 1990, to $74,000 by 2000 (as measured in each case in constant 2001 dollars). That is a very large increase. However, it overstates actual funding for readiness, since there are increasingly large parts of the O&M budget that do not fund readiness-related activities.

To make budget comparisons meaningful, one should subtract out spending for types of O&M activities that have become much greater in recent years. They include environmental cleanup, frequent
Figure 1. Age and Experience of U.S. Troops, 1973-2000

contingencies abroad, spare parts purchases formerly made out of the procurement budget—as well as more expensive health care and too large of a base infrastructure. Accounting for such effects, adjusted resources for O&MI remain about $65,000 per person in constant dollar terms.\(^5\) That would seem to suggest more than ample funding.

But again, it is not quite so simple. Historical trends since 1970 show a typical real increase in O&M spending per uniformed member of the armed forces at roughly 2% per year. So over a decade, one might expect costs that were $56,000 in 1990 to grow to at least $65,000 in 2000. As a result, even if substantial additional resources are being poured into readiness accounts, it is not obvious that the increases have been adequate.

There are two points here. First, net O&M costs will probably keep going up, even if privatizations, base closures, and other economies are successfully achieved. Thus, the historical record suggests that real O&M costs per capita will continue to grow. In fact, even allowing for possible savings from privatizations and other reforms, it would be excessively optimistic to assume annual per-capita cost growth of less than 1% in real terms. Second, to gain real insight into the state of U.S. military readiness, one must look deeper, and at more specific measures. The broad spending data, not surprisingly, are insufficient.

Readiness of Personnel Today
Consider therefore the men and women of the military. By some metrics, they have never been better.\(^6\) As measured by time in uniform, personnel are more experienced than in the Reagan and Bush years (see Figure 1). Their scores on aptitude tests are higher than in most of the Reagan years, though lower than the Bush and early Clinton years (see Figure 2). By these metrics, conditions generally peaked in the mid-1990s, but remain very strong today, and near peak levels.

Training remains rigorous as well. Whether it is miles driven per tank crew per year, flight hours per fighter pilot per month, steaming days per ship per quarter, or some other metric of the intensity of training and exercises, today’s levels compare favorably with those of the 1980s and early 1990s. In some cases they are 10% less, but more commonly they are within 5% of the numerical goals used under Presidents Reagan and Bush—and the benefits of improved simulators should not be ignored either.\(^7\)
Figure 2. Aptitude Scores of Enlisted Recruits 1973-2000*


* Many individuals taking the test ultimately do not join the military, but their scores constitute a database against which one can evaluate those who are enlisted.

**ASVAB misonomerign, 1977-1981. ASVAB = Armed Services Vocational Aptitude Battery. AFQT is one component of ASVAB.

*** 2000 data current as of March.

* Overall average percentage increase in basic pay, basic allowance for quarters, and basic allowance for subsistence.
Anyone who doubts the abilities of U.S. troops need only review their outstanding performance in the Kosovo war, ongoing peacekeeping missions in the Balkans, and the no-fly zone operations over Iraq. They have suffered extremely low casualties, accomplished their missions effectively, and handled themselves with great professionalism and effectiveness in almost all circumstances. Even in the ill-fated Somalia mission of 1993, troops performed ably. It was the Clinton administration and top military officials who mishandled the mission, escalating the operation to a manhunt for one warlord without accepting—or preparing the country for—the associated risk of casualties.

Personnel are being compensated reasonably well. Cumulative pay raises during the Clinton administration exceeded aggregate inflation over that same period substantially—something that did not happen in the Bush administration (see Figure 3). In addition, retirement pay was restored to levels that prevailed until the second half of the Reagan era. Most of the real pay increases, as well as the restitution of earlier retirement benefits, occurred under pressure from a Republican Congress; pay raises in the first Clinton term were slightly below the inflation rate. But however one chooses to allocate the political credit for these policies, the overall record of the eight-year period is nonetheless good. Reports of a purported 13% military-civilian pay gap have been inaccurate. In reality, military pay compares favorably with civilian pay for most types of specialties and most age and education categories in American society today. The regrettable reality that about 5,000 troops and their families remain on food stamps should be compared with the fact that 20,000 personnel were on food stamps in 1992.

Reenlistment and recruitment statistics tell a more complex story. Reenlistment rates remain similar to their Reagan-era levels, but are below those of the early 1990s (see Figure 4). First-term attrition rates—in other words, those quitting or being forced out of the military before completing their first tour of duty—are unfortunately at an all-time high of about 37%. That is about seven percentage points higher than the 30% rate of a decade ago.

Recruiting new troops was difficult in the late 1990s, with shortfalls in both 1998 and 1999. After increasing advertising budgets and recruiting staffs, and benefitting from a large pay raise, all the ser-
vices met active-duty recruiting goals in 2000. Some residual problems from previous years were ameliorated as well; for example, the Navy reduced a shortfall in sailors, or “empty sea billets,” from 18,000 in 1998 to 6,000 in 2000.\textsuperscript{12} Recruiting was still difficult in some parts of the reserve component, however.\textsuperscript{13} Recent progress in improving recruiting is encouraging, but the sustained shortfalls witnessed during much of the late 1990s warrant caution before proclaiming the recruiting problem to be truly solved.

As a consequence of recent challenges with retention and recruiting, personnel shortfalls remain in certain areas. They do not leave the force hollow, but they do leave a number of gaps. Consider for example what the Army, Air Force, and Navy define as “critical billets”—personnel requiring particular specialization and skills. There are about 60 categories of such personnel. At present, these three services maintain 90\% or more of desired personnel in two-thirds of those categories, but fall below 90\% in the remaining one-third. That may be a glass two-thirds full, but it is also a glass one-third empty. Notable shortages exist in Air Force pilots (1,200 below nominal need—though at least the shortfalls have stabilized in size of late), Army captains, several types of mechanics and electronics repair personnel, and a number of other specialties and grades. Not all shortfalls are of
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great concern; some could be addressed successfully simply by manning the highest-priority positions first. Others are more serious, and affect combat capability.\textsuperscript{14} They may require targeted pay raises or other inducements to attract and keep adequate numbers of individuals with the requisite abilities.

Morale is fair. In 1999, 65\% of all officers and 46\% of enlisted personnel said that they were satisfied with their lives (those dissatisfied totaled 18\% and 31\%, respectively). But those numbers are not outstanding, and are down from earlier levels.\textsuperscript{15} All in all, 51\% of personnel said it was likely that they would stay in the military for an extended period, while 35\% said they were likely to leave—reasonable numbers but not excellent ones. The overwhelming majority of servicemen, 75\%, believe that they would have more free time if they worked in the private sector (see Figure 5). Most work more than 40 hours a week, and nearly half had worked more than 50 hours the week before being surveyed in a recent study. These numbers do not describe a force in crisis, but they do reflect a military feeling overworked and strained.\textsuperscript{16}

**Readiness of Equipment Today**

As for available weaponry, most U.S. military equipment is not in

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**Figure 5. Troop Perceptions About Civilian and Military Life, 1999**

![Graph showing troop perceptions about civilian and military life](http://www.gao.gov/cgi-bin/getrpt?GAO/T-NSIAD-00-110 [May 19, 2000]).

quite as good shape as it was a decade ago. It is still comparable to the condition of weaponry during the early and middle years of the Reagan era.

The armed forces generally measure equipment readiness in terms of “mission capable rates”—the percentage of weapons that are immediately usable for major combat tasks, and not awaiting repair or otherwise out of commission. Although rates vary greatly from one weapon to another, “mission capable” rates were typically about 75% in the mid-1980s and 80% or so in the early 1990s. They are generally back around 75% today. Historically, that is good, but not excellent, and ultimately not quite good enough given how much is being asked of today’s military from Korea to the Taiwan Strait to the Persian Gulf to the Balkans.

If one looks more closely at the details, they vary greatly. Notably, Air Force mission capable rates are down more than ten percentage points over the last decade (see Figure 6).17 Navy ships continue to deploy dependably, and at rates similar to those of the past—but ships that are not on deployment are on average less ready, should they be needed in a crisis, than a decade ago. On the other hand, Army equipment remains every bit as ready as a decade ago (see Figure

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**Figure 6. U.S. Air Force Mission Capable Rates**

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7). Marine Corps aircraft, despite a spate of temporary groundings for safety-related reasons in 2000, also remain just as mission-capable as they were in the early 1990s (see Figure 8). Navy aviation readiness rates have dropped off a bit since the early 1990s, but not by nearly as much as those of the Air Force (see Table 1). Marine Corps ground equipment appears to have declined in overall readiness since the early 1990s—though by no more than 1% or 2%, with recent trends positive.18

The military’s overall readiness may not be captured, however, by the average readiness of all of its equipment. Some systems may be more important than others. Also, if a critical single system or type of system—such as a transport ship or plane, or electronic warfare aircraft—is not functional, an entire war plan can fall apart. As such, downturns in the readiness of specific systems must be watched carefully, and addressed quickly in certain cases regardless of the average caliber of equipment readiness. Moreover, given how frequently today’s U.S. military is being used, and its smaller size relative to earlier eras, readiness levels equal to those of the Reagan era

Figure 7. Readiness of U.S. Army Equipment


Vehicles include: M1A1, M1A2, M2, M3, M109A6, M8, HEMTT, HMMWV, FMTV, MLRS, PATRIOT, AVENGER. Aviation includes: AH-64, OH-58D, UH-60, CH-47.
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may not be good enough. The levels attained during the early 1990s should be viewed as the proper goals for today, even if they were unusually excellent in historical terms.

But the broad message of these gauges, while not perfect and not a cause for complacency, is reassuring nonetheless. The average fighter, ship, tank, or other major military system is as likely to be as

Figure 8. Overall U.S. Marine Corps Aircraft Mission Capable Rates


Note: Includes both Active and Reserve components.

Table 1. Navy Aircraft Mission Capable Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>Rate</th>
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<tr>
<td>1990</td>
<td>70%</td>
</tr>
<tr>
<td>1995</td>
<td>72%</td>
</tr>
<tr>
<td>1999</td>
<td>69%</td>
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Note: Categories of aircraft covered by data may have changed slightly. Data indicate overall approximate readiness levels for all years.
Figure 9. Worldwide U.S. Active-Duty Military Deaths by Cause, 1980-1998


* Does not include deaths from hostile action, of which there were 563 over the period, including 256 in Lebanon, 18 in Grenada, 23 in Panama, 148 in Operation Desert Storm, 29 in Somalia, and 19 in Saudi Arabia.
fit for combat today as it was halfway through Ronald Reagan’s military buildup.

Altogether, the quality of people, equipment and training has given the United States a military in very fine shape. In addition, it has produced a very good safety record. Despite occasional problems in certain parts of the force, overall accident rates per person during training and deployments are as low or lower than they have ever been, according to Pentagon data (see Figure 9).

SUSTAINING READINESS IN THE NEXT DECADE

Personnel
Although things look generally good today, there are cracks in the readiness of U.S. armed forces that, if allowed to worsen, could change the basic readiness picture within a few years. Most notably, frequent and extended deployments have kept people away from home and families, and caused many personnel to work excessively long hours whether on deployment or at home base. Selectively scaling back U.S. military deployments in places where they are less than essential would help readiness and morale considerably. But many other measures would be useful to adopt as well.

Recent pay raises and efforts to make overseas deployments more predictable have improved some of the downward trends in recruiting and retention of late. But the situation remains worrisome, and requires further steps to reduce the strain on personnel and improve their well-being. Additional steps should include increasing the numbers of specialized units that are frequently deployed, or moving some frequently deployed units from the reserve component to the active-duty force structure.

For example, Army data shows that 12,000 more personnel would be needed to relieve excessive burdens on existing “high demand/low density” units, such as those manning PATRIOT defense batteries, making up military police units, and providing expertise in the areas of nuclear, biological, and chemical weapons. Generalizing this type of policy on high demand/low density units to the other services might make for a total increase of 20,000 to 30,000 active-duty personnel in certain types of specialties. (Since the Navy and Marine Corps are accustomed to deployments, it is especially the Army and Air Force where needs are likely greatest, though the Navy does not have enough electronic jamming aircraft.) Corresponding annual costs...
might be $1 billion to $1.5 billion for salaries, making for a total price tag of $2 billion or more once equipment is included.20 Alternatively, by prudently changing the current two-major theater war framework to a somewhat less manpower-intensive two-war requirement, the Pentagon could add these positions without increasing overall active-duty end strength.

The military services also should continue to find innovative ways to distribute deployment demands around more of the force structure. Doing so is admittedly difficult, for it can involve slightly reducing vigilance for regional warfighting. For example, the Army has been hesitant at times about allowing the 25th infantry division, based in Hawaii and intended for rapid deployment to Korea in the event of a war there, to conduct other missions—though ultimately part of the 25th did deploy to Haiti.

The Army should also carry out its planned policy to fully man whatever number of divisions it retains—even if that means cutting another division, or shrinking the size of all of them—so that deploying one unit does not require “borrowing” personnel from another. At present, this borrow-to-deploy policy causes a harmful ripple effect throughout much of the force.

Other military services should make changes as well. Consider that of the U.S. Air Force’s 40 airborne warning and control system (AWACS) crews, only 27 are fully trained, and of those 27, commanders in the Pacific region do not approve of the deployment of the six they control out of the region. That leaves the remaining 21 to do a job in the rest of the world that requires close to twice that number.21 Such policies are not wise. To the extent that they have the effect of driving capable people out of the military, they can hurt medium-term readiness more than they protect immediate combat readiness. Solutions should involve increasing the numbers of such types of units, and fully using existing capabilities to handle ongoing operations.

As for improvements in compensation, targeted pay increases for certain specialties, or better benefits such as an expansion of the off-base housing reimbursement, now make more sense than another general pay increase across the force. Personnel shortfalls are far more significant in some parts of the force and some areas of expertise than others.

If there is to be another step to improve the well-being of all troops, a pay raise well above the rate of inflation probably makes less
sense than a step such as fully reimbursing individuals for their housing costs. That measure would cost $1.5 billion a year, and increase housing reimbursement rates from 85% to 100%. It would also have the benefit of alleviating demand for on-base housing, which the Department of Defense is having a hard time renovating (and which it should probably not spend a great deal of time focused on, given that this function is not within its core expertise). An additional step, similar in spirit, would be to make sure that subsidized day care is available to all those military families that desire it, at a cost of roughly $1 billion a year. These steps would make compensation more fair as well—at present, some individuals get housing and day-care benefits while others do not.22

Equipment
Remedies are also needed on the hardware front. Much of the equipment bought during the Reagan era is starting to wear out. Combat jets, for example, will soon average 15 years in age—and it is generally thought prudent to retire them after about 20 years of service (meaning that average age should usually be around 10 years). Combat helicopters face similar problems; their current average age is around 22 years, but their expected lifetimes are somewhat less than 30.23

At least fighter jets are scheduled to be replaced. The situation is not so fortunate for other types of systems. There are no plans to replace Army transport helicopters, maritime patrol aircraft, and a number of support planes that carry out missions such as refueling and electronic warfare.24

So while near-term equipment readiness is still good, the Bush administration will need to devise a sound procurement plan that buys substantial numbers of new platforms reasonably quickly in order to make sure that equipment remains ready into the future. The procurement issue should be viewed as a simple matter of ensuring readiness, and military safety, in the years ahead, in addition to an aspect of the revolution in military affairs. Revolution or not, the U.S. military needs mission-worthy systems that have not drastically exceeded their service lifetimes. The civilian and uniformed leadership owe it to the men and women of the armed forces to provide them equipment that is safe and reliable.

At present, there is no assurance they will do so. The military services, in keeping their ambitious and probably unaffordable agendas for
modernizing equipment, are putting sophisticated weaponry ahead of readiness and the well-being of their own personnel. They are not doing so intentionally. But that is the effect of holding onto an unrealistically expensive modernization program.

The effect of this policy is predictable, and lamentable. Dollars will not suffice to buy new weapons—which are sure to grow in cost—in the numbers intended. As a result, weapons production schedules will be stretched out, leading to purchases of fewer new planes and ships and trucks per year than now envisioned. Existing equipment will therefore have to be retained far beyond prudent retirement dates. Mission capable rates for key weapons will decline further. Accident and fatality rates for troops, which have improved continuously for many years including the last eight, will at some point probably start growing again. Allowing that to happen, in an effort to purchase expensive weapons in large numbers, is unacceptable. Instead, the Pentagon must devise sound and practical weapons procurement plans, focusing on less expensive weaponry than it now prefers, and it must sustain those plans with little slippage in the years ahead.

**CONCLUSION**

Today’s U.S. military readiness remains quite good. In fact, looking across a host of indicators—the quality of troops, rigor of training, mission-capable rates of various aircraft and ground vehicles and ships, and even recruiting and retention statistics—overall conditions are generally comparable to those of the Reagan years on a person-for-person basis.

That is not to say that everything is excellent, or to argue for complacency. Today’s generally high readiness does not change the fact that a number of specific problems exist in particular parts of the force. Moreover, overall readiness is somewhat fragile. Military morale is not as good as in the 1980s, meaning that the possibility exists that serious shortfalls of high-quality people could develop if circumstances take a further turn for the worse. In addition, aging equipment requires systematic replacement—not necessarily with the F-22s, V-22s, joint strike fighters, and DD-21s that the services now prefer, but with dependable and reliable platforms of some type.

Some solutions to problems with morale are best addressed by reducing overseas military deployments where possible. Radical cutbacks
are not needed. But it should be possible to reduce the numbers of Marines on Okinawa, of carrier battle groups and other ships in the Mediterranean, of Air Force aircraft over the skies of Iraq, and of Army troops in Bosnia (though not Kosovo).25

Whatever happens on the deployment and modernization fronts, however, o&m costs for ensuring readiness are likely to keep going up. Personnel costs may not grow greatly, but per capita operating and maintenance costs are likely to increase roughly 1% a year in real terms. By 2010, ensuring readiness is likely to require another $10 billion in annual spending on operations and support than it does today—even if President Bush and the Congress do what they should, and close more military bases while also seeking other economies. U.S. military readiness today may be good, but it is not to be taken for granted, and it does not come cheap.

ENDNOTES

11. Statement for the Record of


15. For evidence of a decline over time, see Edwin Dorn and others, American Military Culture in the Twenty-First Century (Washington, DC: Center for Strategic and International Studies, 2000), 75.


17. Air Force officials sometimes describe a drop of more than 20%, but that reflects a different, less transparent, and less useful way of measuring readiness—it refers to the “C” ratings of units, a complicated and subjective and fickle indicator, rather than the more objective indicator of mission capable rate. For recent information on such “C” ratings, see “Ryan Addresses Readiness Concerns before Congress,” U.S. Air Force Perspectives (Washington, DC: Air Force Office of Public Affairs, October 2000), 1.

18. Jareb and Robinson, Readiness Support for Marines, 8.

19. A notable example of a problem in 2000 was the highest rate of Navy ship groundings and collisions since 1992. Thankfully, associated fatalities were few in number. See James W. Crawley, “Navy Calls for Safety Review by Whole Fleet,” San Diego Union-Tribune, 16 September 2000.


23. See Statement of Lane Pierrot, Congressional Budget Office, on
Aging Military Equipment before the Subcommittee on Military Procurement, House Committee on Armed Services, 24 February 1999, 4.
