

## Traditions Die Hard: The Relevance of the Indian Wars to the US Army of the Year 2000\*

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This paper suggests that prediction of near-term future events, albeit difficult, may be made possible by observing individual and organizational behavior in past situations whose circumstances and environmental pressures were similar to present ones, especially where the two periods preceding those being compared have much in common themselves. Such a possibility appears to exist for the current era of radically reduced military threats and budgets and the era of conflicts with the Indians on the Western Plains immediately after the Civil War.

Behavioral similarities are developed to establish the comparability of past and present patterns of activity. Then, based on what happened in the earlier case, suggestions are made about the behavior that the US Army is likely to exhibit unless the hold of the past is broken. Newly-available battlefield simulation technology is proposed as a resource for breaking past behavior patterns so that the Army may focus more clearly on identifying expected future contingencies and on justifying requirements.

### TRADITIONS OF THE INDIAN WARS

The John Ford film trilogy of the Indian Wars in the American West has exposed post-Second World War America to the values of the old Army. In *Fort Apache*, *She Wore a Yellow Ribbon* and *Rio Grande*, John Wayne and his post-Civil War troopers in dirty-shirt blue portrayed an idealized model of proper collective behavior which lives on in the traditions of the US Army today. One need only go to Fort Riley, Fort Leavenworth or Fort Huachuca for a change of command or retirement ceremony to sense the soldiers' pride in themselves and in the traditions of their past. The crisp bugle calls, the flapping of the national standard with its streamers in the wind, the unit guidons snapping to attention, and the precision of close order drill may no longer be required in modern warfare; yet the traditions of past generations, adopted into Army practice of today, are living reminders of the constant enduring Army values of sacrifice, teamwork and commitment.

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Many civilians of the 1870s doubted the morality of the Indian conflicts, as indeed many civilians of latter days doubted the morality of the conflict in Vietnam. But few Americans, at least today, have anything but profound respect for the determination and commitment of the individual soldiers who fought on the Western Plains and in Vietnam, each of whom learned moral values from preceding generations.

On the whole, adherence to soldierly tradition has served the Army well over the span between these wars because loyalty, sacrifice and team effort have been and still are the *sine qua non* of effective battle performance. The characteristic constancy of Army focus, however, may not have the same value in the weapons acquisition system that supports the soldier of today. Threats, technological options and budget realities appear to be changing far faster than the abilities of the Army supporting institutions to cope with them.

In at least one other time, immediately after the Civil War, circumstances occurred which were very close to those of today. This article examines how the Army fared in those circumstances, what its own bureaucracy did to it then, and what may be in store for it in the near future.

#### THE PARALLEL WITH TODAY

The period of the Plains War was chronicled almost 20 years ago in Robert Utley's *Frontier Regulars: The United States Army and the Indian, 1866-1891*.<sup>1</sup> Utley could not have anticipated the remarkable change in geopolitical events which has transpired in the interim, nor could he have guessed the equally remarkable parallel between the events of the post-Civil War era and those of today. Yet in reading *Frontier Regulars* and appreciating its stories, one feels as if today were the past and the past were today. What is happening as the nation embarks on its present reducing of forces is almost exactly what happened then, and what happened to the Army of the day as that process unfolded may well signal the future toward which the Army of today must look, unless the leadership intervenes to prevent it.

#### *Post-Civil War environment*

Promptly at 9am on the morning of 23 May, 1865, the flag on the Capitol was raised to full standard, ending the official mourning of Lincoln's death. Cannon and bugles sounded, and then the Army of the Potomac marched onto Pennsylvania Avenue to begin the Grand Review of the victorious Union Armies of the Civil War. By the end of the second day, as representatives of Sherman's armies of the West moved by, more than 125,000 Union soldiers had paraded in front of their President and Commanding General, paying their respect to their leaders and in turn receiving from them the grateful thanks of their nation.

The citizenry of the victorious Union of that day worshipped its soldiers and revered its leaders in a profound exultation that lasted a generation. Its manifestations can still be seen in the myriad of spectacular monuments at Gettysburg and Shiloh, and in the somber simple grave markers of Arlington Cemetery. And rightly so. The Grand Army was one of the finest fighting forces of

its day. Many of the campaigns waged in the Civil War are still studied a century and a quarter later in the military colleges of the principal nations of the world. The Army's leadership during the Civil War, and particularly that part which stayed on during the immediately following Plains War years, was superb. Sherman, for example, who headed the Army during most of the next decade, is still studied as a master tactician for his campaign from Chattanooga to the capture of Atlanta.

Then, as today, US forces were technologically far advanced over most of their counterparts throughout the world, perhaps the Prussians excepted. Steam propulsion had been introduced to US fighting ships, and the submerged screw had replaced the vulnerable paddle-wheels of prewar times. The ironclad had been introduced to warfare by the US Navy in 1861. The Army also was engaged in innovations. The introduction of a rifled bore for cannon greatly extended their range, accuracy, and lethality; interchangeability of parts forever changed the manufacture and use of rifles; and railroad systems revolutionized military logistics.

The Battle of Waterloo and those of the end of the Civil War could not have been more different, though only 43 years apart, because of the evolution of weapons technology; the differences were as pronounced as those between recent ground warfare in the Gulf and ground warfare in the hedgerows of Normandy an equally long time before. Yet the magnificent Army of the Grand Review, although lauded by a truly grateful nation and led by leaders of no less capability than those who direct US military forces today, nonetheless was to crumble within a decade to a level of capability barely able to defeat the Indians in the Plains War to come.

The story of how that post-Civil War military demise came to pass is frightening, since the circumstances of those times have been almost exactly re-created today, and the initial actions of those making decisions today seem identical to the disastrous actions of that era.

#### *Then and now*

Six important similarities stand out:

1. The first and most obvious similarity is that the threats to the United States in both eras changed in almost identical ways, as superpowers went away. In one case, the South was vanquished; and in the other, the USSR came apart as a military threat. In both cases, no other major threat of comparable dimensions remained to demand the size of the Army then in uniform.
2. In each case, with the familiar threat apparently gone, the large standing Army was deemed by the Congress to be far too large to be affordable in the new circumstance.
3. Then, as now, the country was simultaneously experiencing substantial economic downturns (1866 and 1873) and was confronted with a dramatically larger national debt than it had been accustomed to; and the most evidently assailable parts of the national budget were those associated with the military.
4. National economic and political priorities were shifting in the 1870s to

the same large degree as they are today. In the post-Civil War era, Westward expansion was beginning and needed to be supported by railroads and ports. Today the issues are education, health care, the environment, and miscellaneous irreversible entitlements.

5. On top of all the foregoing was the long-standing American antipathy toward standing armies. Perhaps born out of the heritage of Washington's Farewell Address, but also reinforced by remembrance of what 20 years earlier had been popularly called "Mr. Polk's War" with Mexico, there was a fear of giving the President a large military force "lest he would use it". Many segments of American society still share this fear, and their actions, though masqueraded, are still aimed at denying a President that capability.

6. But the most pernicious similarity was the presence of very real Third World threats to US national interests. These threats did not then and do not now stimulate the interest of those who fund the military. For those who did not want big armies, these threats were small enough to be ignored, and for those who wanted to retain the big armies, they were not sufficiently numerous or influential to justify keeping the Army that the nation already had. For the Congress and military of the late 1860s, the Third World problem was the conflicting interests of the Indians of the Western frontier and an expansion-oriented national government. Today, the problem is Iraq and the Balkans; but tomorrow it could be any one of a dozen similar reasonably small contingencies where US national interests could be involved.

Those in charge of armies can easily fail to focus on contingency threats and the armaments required to deal with them. In the post-Civil War case, it was only after a series of expensive defeats at the hands of technologically well-equipped Indians that the US chose to focus on equipment suited to contingency warfare. It is my hope that the management of today's military force does not make that same mistake.

#### THE POST-CIVIL WAR DRAWDOWN

The leaders in charge of both military and legislative affairs at the end of the Civil War were seemingly as competent as the leaders of today. In their favor, they had been good enough to finish their war with their economically inferior opponent in just four years, while it took the US and the Western alliance 40 years to finish off their own economically-inferior Soviet foe, trading off bloodshed for economic indebtedness. If the US can ever find a way to repay that indebtedness, the deal may not be such a bad one. On the other hand, if it is unable to repay that ponderous debt, the next generation may well wish that its soldiers had died valiantly, as did their forebears in the Civil War, so that they might live in the style that US citizens are now enjoying. At any rate, the leaders of a century ago, faced with similar circumstances, appear to have started out doing the very things that are being done today. When gathered together, their arguments have quite a surprising ring of currency.

Army (and also Navy) force structure was then the subject of continual animosity at all of the annual hearings of the Congress, pitting members of Congress, the Executive, and the military against one another. The then Commanding General (Grant) declared a need for a base force of 80,000 men for the post-Civil War Army. The Secretary of Defense equivalent (Stanton), recognizing the political wind, reduced the request to 58,000, and the Act of 1866 authorized nearly that force. But Congress, in the Act of 3 March 1869, reduced the force from 45 to 25 regiments and capped its size at 37,313. In 1870 the force was further reduced to 30,000 enlisted men, and by 1874 to 25,000 enlisted.

Thus, in five years, Congress had cut the drawdown objective of the Army leadership in half. The Army and its people endured severe hardship in sizing down to that level; and in actual practice, recruiting achieved only 90 percent of the number authorized.

Contemporary force structure discussions have a similar sound. However, today's Congressionally set objectives, two years after the Gulf War, are more like those of 1869 (down about 25 percent) than those of 1874, nine years after the Civil War. Present erosion of authorized levels may continue just as it did for the post-Civil War Army, even though force structure sizing was leveled out by a pre-election environment in which officials wish to prevent release into an already weak economy of yet more people who lack competitively marketable skills. The level of animosity and confrontation could be much greater after the 1992 US elections.

In this respect, however, there may be a difference between Civil War times and now. The Civil War problem may have been much easier to deal with than today's. In 1865-66, most soldiers had farming backgrounds, and they may have been easier to reabsorb than those of today's industrialized economy. Even there, however, some similarity exists because the economic downturns after the Civil War were attributed in part to a lack of the debt-financed government spending that the nation had enjoyed during the war.

Bureaucracies seem to have a common reaction to the dribbling but continual reduction of their funding, the worst part of which is never knowing when it will end or how to hold out best until that end comes to pass. They hold on to what they have as long as they can, since there can be no telling where they will end up if they lose it. That was the reaction in the late 1860s and it appears to be the reaction again today.

#### BUREAUCRATIC RESPONSES TO MILITARY DRAWDOWN

In the late 1860s, hoping that things would get better, the Army kept more force structure (regiments) than it could effectively man, knowing that once a regiment was discontinued, authorization for its reconstitution would be virtually impossible to obtain. The realization that it is extremely difficult to expand force structure once it has been reduced continued to affect decision-making into the 1980s and continues even today.

#### *Holding out for force structure*

A decade ago, General Meyer, then Chief of Staff of the Army, focused

attention on the condition of what he called the hollow Army. After the Civil War, the Army was hollow, too. As General Custer left for his Battle of the Little Big Horn, for example, he rode off without 30 percent of his officers, who had been assigned to temporary duty elsewhere. The billet authorizations of the day far exceeded the Army's ability to fill them and, in comparative peacetime, preference has always gone to keeping the organization going administratively. Then, as today, in wartime one could not get the people back fast enough from temporary duty to go to the first battle.

Again, Colonel John Gibbon, a very good Civil War commander, fought and lost the Battle of Big Hole (1877) with six companies of the Seventh Infantry Regiment which had been reduced to a total strength present of 15 officers and 146 men from the over 500 authorized.

Finally, let me cite the experiences of my great-grandfather, First Lieutenant Charles E. Coloney, Third Regiment US Volunteers, who in 1866 was company commander of a unit stationed at Fort Riley, Kansas. During almost the whole of this assignment, he was detailed to the Inspector General's office and from there toured Army posts at Fort Leavenworth, Fort Laramie, Fort Sedgwick and Denver. He spent virtually no time with his company even though it was soon to be deployed to Julesburg, Colorado, to protect the settlers against recurrences of recent successful Indian attacks.

General Meyer was right in his crusade for proper staffing. It is not efficient to organize optimally for fighting and then not staff the organization to authorized levels. The Army of General Meyer's day did reduce its force structure, but it was able to do so in part because it knew that if it reduced itself, it would not be cut further from the outside.

Assurances of a floor to force structure were not forthcoming during the post-Civil War era and so far have not been given during the current drawdown. After the Civil War, the Army held on to all it could in the way of authorized number of units, regardless of whether they could fill them—and then bellyached at the inefficiency of its staffing from the standpoint of war fighting. In Congressional testimony, General Schofield observed that "the Army was very expensive in proportion to its effective strength", and Colonel de Trobriand opined that "finally (if continued) an excessive reduction of the Army would be more expensive than its maintenance at current strength". Almost identical words are used today in opposing reductions in numbers of authorized units as budgets are cut. No one within the system of that day favored sizing down force structure to match the number of people programmed to be available, for fear that downsizing would just lead to further cuts in people programmed to be available.

History teaches that a reliable and believable floor to future cuts needs to be decided upon (and not thereupon immediately changed) if the bureaucracy is to stop fighting the cuts and organize itself for efficient operation. But commitment to a stable force was not achieved in the first decade after the Civil War, and so the scarce resources actually available were not especially wisely used. It would be a pity if that situation were to recur in the US Army, Navy and Air Force of the 1990s.

*Recalibrating the industrial base*

There appear to be other characteristics of bureaucratic organizations in free fall that endure from generation to generation and from postwar period to postwar period. Some of these are of obvious current interest: how the so-called defense industrial base is to be managed, what it should produce, and whether it can be maintained.

Industrial base decisions will be affected by force structure. Allowing the focus to shift to the technical requirements of defeating a lesser foe may lead to having one's force geared for that current lesser threat, ignoring some future threat that may reappear and require the more capable larger force. But in parrying attempts to shift the focus to the current threat of lesser size and capability, one loses the ability to define a weapons development program which would address the unique and difficult characteristics of that lesser but new threat. Decision-makers faced this situation in 1866 when presented with a geopolitical problem similar to today's.

The Army Ordnance Department of 1865–90, based in Washington, appears steadfastly to have viewed the rising again of the South, rather than contingency encounters and subsequent campaign warfare against the Indians of the West, as the major threat against the forces of the United States.

The post-Civil War threat model might have been plausible in 1866 when it was uncertain how demilitarization of the South would go and when the Indians were only starting to scalp people on the Oregon Trail. It continued to be used until 1892, however, long after it was evident that the South was not going to rise again and that the Indians were capable of causing a "hell of a problem".

Even though the commander in the field (Major General Mackenzie after the Little Big Horn in 1876) pleaded to have magazine-loading repeating rifles like the Winchester, (which was available to civilians on the open market and to the Indians on the black market), issued to his men, the Ordnance Department refused on the basis of the Winchester's failure to meet operational specifications. The Winchester was deemed to lack adequate penetrating power and accuracy at 1,000 yards, and so the breechloading, single-shot version of the Civil War Springfield was maintained in various forms in the infantry until 1892, when the United States introduced the Krag-Jorgensen; it was the very last major power of the day to adopt a standard infantry magazine-loading rifle, despite the obvious pressing need of its soldiers in the West for a rapid-firing weapon. This eventual introduction of a magazine-fed rifle took place 16 years after Custer and his men were wiped out at far less than 1,000 yards range by superior numbers of unarmored Indians, who had many more Winchesters than did his Union troopers.

Part of the problem, then as today, was that force structure was eating up the procurement accounts, and modified rifles were cheaper than new designs. In a declining budget environment, holding on to force structure can only be paid for by robbing the procurement account.

The parallels of today with yesteryear are indeed remarkable. Today's story is just beginning to be written, and no one knows how it will play out. Yet the issues of today are still much like theirs—Who is the enemy? What force is needed to fight that enemy? What are the special tools needed to fight him with?

The first requirement is to agree on the threat for which to size the Army and against which to develop new tools of war. Without that focus, if history is indeed prologue, the nation will continue to let its support of the Army erode in favor of other priorities. If the threat is a reinvigorated major power (read the South), then military research and development need to provide a special set of new tools focused toward worldwide conflict. But if that enemy is a Third World contingency force to be fought in the geopolitical "boonies" (read the West of 1866) with unconventional warfare (read unconventional Indian tactics), then a quite different set of tools will be required. And so the issue is both what to do next and how to stop doing what is inappropriate.

The US today is caught in the midst of a set of procurements aimed at a Cold War threat which now is non-existent, but which many feel may sometime reappear. These current procurements (B2, Commanche, ATF, SSN-21, next generation tank) are already being reduced in size on grounds of affordability. If continued, they can provide verification of proven, producible designs which can be available for timely mobilization-rate production in the event of tension with a re-emergent superpower. The Commanche may be a special case of a weapon required in the context of both contingency warfare and in a far-out major power conflict, because of its projected low-detectability and self-transport features.

It is important to decide what comes next on the Department of Defense's acquisition agenda after today's platter is cleaned. One would hope that the platter of tomorrow can nourish the Army's ability to fight those contingency conflicts that patently lie ahead.

#### REQUIREMENTS FOR CONTINGENCY WARFARE

Without overemphasizing the importance of post-Civil War history, one can perhaps gain insight into future US needs by understanding how things went in the last serious contingency wars against underdeveloped nations opposing US national policy.

Besides the already discussed need for high-fire-rate rifles, other kinds of high-fire-power weapon systems were needed for this changed mode of warfare. Adequate responses to those new needs were not brought forward after the Civil War nearly as rapidly as one might have expected, however, considering the intensity of the Indian engagements. The Gatling gun, predecessor of the machine guns of today, was surprisingly slow in reaching the US Army inventory, especially considering that, by the time of the First World War, advanced developments of the Gatling gun would render unarmored cavalry obsolete. And there may be a similar situation to be watched out for today. It may be very difficult to encourage developments within an Army which threaten to diminish the role of a currently influential part of that force.

A contemporary example of institutional reluctance may be the slowness with which the Army of today has embraced use of rotary-wing aircraft for anti-helicopter and cruise missile defense. Use of rotary-wing aircraft for this purpose could challenge traditional Army ground-based air defense forces, especially since their other role, defense of ground forces against fixed-wing aircraft, already has

been diminished by assumptions of Air Force and Navy air superiority in contingency situations.

Enemy cruise missiles and attack helicopters, like those in the US inventory, derive their low vulnerability from their ability to fly close to the terrain and to organize their attack routes to avoid coming within the line-of-sight of ground defenses. It may be a first principle that the US can deny these weapons to its enemies only by itself using rapidly re-positionable platforms not subject to line-of-sight denial, such as anti-air helicopters. Yet here, as in the case of the Gatling guns not used by Custer in his last fight, the apparent solution to a crucial future problem may not have been pursued with extraordinary urgency because of the cultural and organizational conflict involved.

Another useful generalization is that ever since the Army could afford to have horses it has tended to emphasize mobility over firepower. Profound logistical implications flow from the preference for mobility, which may have surfaced right after the Civil War because of the success of Confederate Generals Bedford Forrest and Jeb Stewart and the influence of Union Generals Sheridan and Custer. This preference surely dominated the Plains War fighting and probably influenced the highly mobile but badly underpowered Sherman tank of World War II. And most recently it might have recurred in the case of the M1 tank, save that outside pressures required it to carry a 120 mm gun into the Gulf War instead of the 105 mm gun originally intended.

Firepower tradeoffs, however, are probably not the most important issues to be considered. In all earlier US wars, the success of mobile forces has been closely tied to the Army's ability to support them logistically, but logistics has traditionally received disproportionately small high-tech acquisition attention. Several stories of the Plains War seem pertinent.

Colonel W. B. Hazen, commanding officer of the Sixth Infantry, observed: "After the fourth day of march of a mixed command, the horse does not march faster than the foot-soldier, and after the seventh day the foot-soldier begins to out-march the horse and from that time forward the foot-soldier has to end his march earlier each day in order to allow the cavalry to reach camp the same day at all." The enduring issue elaborated here is that, in the deserts of the American West or Saddam's East, forage is unavailable to horses and tanks, and getting fuel to the mobility force continues to be crucial for desert contingencies. US planners must not be bemused into believing that the Saudi road structure and fuel transporters that they found in the Gulf War will be typical of the hilly, undeveloped places the US Army may have to visit next.

Major General R. A. Mackenzie, in charge of chasing Apaches in Arizona, complained to Washington authorities that the highly-developed wagon trains of the last war (in his case the Civil War) were ineffective for support of ground columns chasing Indians. He therefore requested procurement authority for mules. The government reaction was that they had tried using mules once before and that it had not worked: the mules wore out, and their packing did not stay together. On that basis his request was denied. Notwithstanding, by some means or other, the General got enough mules, hired some civilian mule trainers who knew how to

pack and treat mules, and used them extensively during his next campaign. One of Geronimo's leading chiefs was paraphrased as saying after his capture: "It was only after your soldiers started using mule trains that we lighter, less-equipped Indians could not easily move away whenever you mounted an offensive."

The issue of that day was one of getting appropriate research, development and acquisition priority on the problems of the non-glamorous, non-shooting Transportation Corps. As a test of how things are today, one might examine where, in the scale of defense priorities, additional medium and heavy rotary-wing airlift appropriate for cargo transport fit into the Department of Defense scheme of things. The answer is that, as yet, they don't. Yet in the rugged, mountainous, roadless terrains of the American Southwest or of the Middle East, neither horse-drawn wagons nor modern diesel fuel resupply vehicles can feed the voracious appetite of Army mobility propulsion.

The enduring challenge is to assess properly what is really important to success in the situations in which one expects to fight and to be sure that these get first research and development priority. That proved hard to do after the Civil War, and US military decision-makers have yet to focus fully on these urgencies in the post-Cold War period.

From all the preceding discussions of this paper, the imperative acquisitions which will be both acceptable to the Congress and the nation and will also give the Army the improved capabilities it will need are those that:

- Find the enemy in his new lair and deduce his intentions.
- Transport US forces rapidly and efficiently to the battlefield (the mules of the Southwest).
- Give US first-in forces augmented fire power to protect them from being overpowered initially, as Custer was, by a larger resident force.
- Efficiently sustain US troops in those remote areas of the world lacking modern transportation infrastructure.
- Contain US force casualty rates to an acceptably low level, paralleling those of the Gulf War.
- Teach and train US forces to fight effectively in the new contingency world of tomorrow (would Custer have gone if he had simulated the Little Big Horn beforehand?).

#### **CONTINGENCY WARFARE AND THE DEFENSE INDUSTRIAL BASE**

These requirements, so reminiscent of those during the Plains War, suggest a few important lessons for management of the industrial base. It is clear, for example, that Third World contingency forces need not be poorly armed as long as they have money, can barter (oil wells or buffalo skins), or have rich political friends. The Plains Indians had no defense industrial base of their own, yet managed to arm themselves adequately with other people's guns to make their wars long and costly. The ability of low-tech enemies to buy contemporary arms is important since it may dominate US willingness to engage in future contingency wars.

Far from yesterday's competition with the industrial base of the Soviet Union, today's US defense industrial base may well be competing with itself, just as it did during the post-Civil War Plains campaigns when the Indians had the Winchesters. US forces can again expect to be fighting American technology exported either by the US itself or by its allies. In fact, for quite some time, the probability of seeing

major adversary capability improvements in areas other than those that the US itself initiates seems slight.

In that sense, current perceptions of on-the-shelf storage of technology for the long term may be all wrong. Probably the need will be short-turn-around protection against US-designed hardware capabilities (cruise missiles, night vision, 120 mm guns) of the kind that the US brought to the Gulf. If so, it is a quite different industrial base which the US must try to maintain. It would need to backfit key new technology-based subsystems rapidly into current inventory. To do this, it would need to give priority to keeping first-tier subsystem suppliers as well as many of their vendors in the next lower tier. Of course, one would like to keep both the subsystem and the prime supplier base; however, that probably is not in the cards, given the budget limitations expected in the future.

Contingency war has been bad business for arms-makers, especially when it has come after a successful big war. There has never been enough stability in contingency warfare to make it reasonable for private industry to invest much in new equipment to support it. It is just too chancy, since by the nature of contingency warfare, one never knows when (or indeed if) it will happen.

Furthermore, equipment stocks left over from a previous war inevitably are used up before reprourement. An 1870s example is extensive use of blue flannel shirts and woolen long-johns in the blisteringly hot summer deserts of the Southwest. No special summer uniforms were widely issued to the deployed troopers until the mid-1880s.

It was not that people were unconcerned in those days, but only that procurement funds were short and one had to make do. The same preferential use of current stock will without doubt be the case over the next few years. The same pressures that existed in 1865–75 will exist in 1993–2003.

When one gets right down to it, it is hard to prove, given the character of the threats, that the nation will need more airplanes or better ones, more tanks or better ones, or more submarines or better ones, for quite a while. And because of this uncertainty, the investment community will be exceedingly leery of investment opportunities based upon assumed production. The present diversely competing prime contractor base may have to go away because the nation will be unable to afford it along with the other things it needs.

The idea is not all that far-fetched. The European allies have abandoned their once diversified competing military prime contractor capabilities. Several decades ago, in what were comparatively good times, they designated single national contractors for specific capabilities to avoid the cost of carrying a broad-based competing set of system contractors. Then, most reluctantly, and with great parliamentary debate, they moved to multinational consortia composed of designated international suppliers. From their standpoints, such multinational consolidation was an economic imperative.

If we believe that the US also might be in jeopardy of losing a substantial part of the prime contractor base, we probably should look for alternatives to banding together with the Europeans. The trick will be to effect retention of a sufficient critical mass of systems design and management capabilities, despite not having an

appreciable number of programs to exercise the militarily peculiar industrial base that the nation currently has.

The solution of the past (after the Civil War and World War I) has been to revert to government arsenals as the only affordable method to provide continuity of knowledge, focused technology exploration, and intermittent implementation of program development. These arsenals have been much maligned over the last 40 years when there has been enough business to sustain an industrial supplier base. It is probably fair to say, however, that the principal maligners of the arsenals are the same industrial system contractors who have had to try extraordinarily hard to wrest business from the arsenals and, having done so, understandably have not wished to give it up. Peculiarly, Defense Science Boards and industry associations who decry the abilities of government institutions to produce much of value almost never have in their study groups a balanced representation from the institutions that they attack.

The arsenal system in the past has done some extraordinarily good work (China Lake with Sidewinder, the Naval Research Lab with VT fuzes, the RadLabs with radar, and the National Labs with their fission and fusion developments). In fact, were one to look, it is the government labs like China Lake that have had the flexibility and the motivation to design and direct production of many affordable and usable weapons in the inventory today (AIM-9, 2.75 rockets, HARM, Walleye).

Reversion to an arsenal system owned and operated by government, however, should not occur by default. Other systems capable of managing low volume and critical mass need to be considered because, today, US capacity to design and integrate large and intricate technological systems exists only in industry. The nation needs a way to salvage as much as it can afford of what is now an industry over-capacity.

Two variants of the traditional government arsenal appear to promise what is needed. These (in ascending order of difficulty of implementation and probably of efficacy as well) are the GOCO and the COCO plants. In GOCO (Government-Owned, Contractor-Operated) plants, competition and presumed industrial efficiency are used by the government to operate government facilities toward which the Department of Defense might non-competitively direct contracts in order to maintain continuity of system-level design and procurement experience, and which could contract with industry for hardware in periods of new system implementation. A reasonable number of parallels exist, which have worked pretty well. Sandia and Oak Ridge are two of the best known of these operating today.

In COCO (Contractor-Owned, Contractor-Operated) plants, the government designates a private industrial contractor as its agent in a given area and facilitates its industrial choice and funds it as if it were a government-owned facility. The European allies have considerable experience in this kind of operation. BAC in Britain and Dessault in France are representative. The US also has approached this kind of operation in the TRW Ballistic Missile Role.

It is important for the Department of Defense to study these alternatives along

with its organic arsenals in order to anticipate a response to the possible unravelling of a big part of its current prime contractor structure.

One aspect of Department of Defense organization and staffing that is of great importance is the need for integrated planning for the totality of the industrial base of the future. The US can no longer afford three or more separate, uncoordinated manipulations of that base by the timing and content of new programs introduced into it. As in technology, so also in production, the concept of a continuing critical mass of loading of that base is needed. And as the business base decreases, it becomes more important that whatever business remains be metered to the remaining industry in a manner most helpful to its long-term survival.

Whether coordination of the future defense industrial base requires reorganization, consolidation, purple suiting, or civilianization depends on the attitudes of those who have to make it come about. That subject is moot because there are few parallels to follow.

#### THE LAST WAR, THE NEXT WAR, AND SIMULATION

History appears also to teach that the US frequently finds it difficult to change warfighting habits and therefore to change acquisition habits. The oft-used cliché is that "Generals always fight the last war". I was recently corrected in this belief by a general officer who had just retired from a high military command. He explained that Generals do not fight the last war fought by other Generals but the war they understood and participated in as Majors. In the stress of combat, he explained, all people, including Generals, automatically revert to behavior honed from prior intense experiences. And so, he contended, not being able to get practice very frequently because of the paucity of new wars, Generals refight the old ones in which they have gained much practice.

But there now seems to be some hope of changing this dependence on the past through simulation. It was first successfully tried out just before the Gulf War, and its use gave the leadership enough confidence in the warfare value of new technology to permit a whole campaign to be built about it.

The elegant technology of interactive, distributed, man-in-the-loop war simulation allows Generals to fight the next war in realistic exercises whenever they wish. Through interactive simulation, the Army leadership of the future will be able to gain a confidence never before possible in the use of new equipments and tactics in the new environments of a contingency-filled future. Through modern simulation technology, military leadership can effectively experiment with new strategies and tactics and can decide, with confidence, what new equipments are needed and also how best to use them. The Generals of the old cliché can fight their next wars as if they were the ones they just got done simulating, rather than the ones they fought as Majors. Perhaps this new interactive simulation capability is the technique by which policy-makers can intervene with history and prevent many of the seemingly inexorable repetitions of the past from recurring.

Much expanded use of analysis is proposed by the Office of the Secretary of Defense for selection of future technologies, demonstration programs, and production commitments, and for examination of new tactics and strategies. Yet,

so far, there has been little discussion of the criteria of success by which these analyses will differentiate among alternatives. Surely many of the criteria used for the last 40 years will no longer be appropriate. For example, Movement of the Forward Edge of Battle Area (FEBA) will be nowhere near as important as before. Neither will be the number of days before the Russians get to the Channel or the number of days before NATO ammunition runs out, simple concepts previously used as criteria. Nor is the eventual outcome of the war a reasonable criterion by which to judge options, since there will be next to no circumstance in which the US will enter a contingency war if the outcome is at all in doubt.

What are the criteria by which to judge success in future contingency warfare? Not surprisingly, they may not be too far different from those which were important in the contingencies of the 1870s. In the years after the Civil War, FEBA movement did not count much anymore (as indeed it had in the Civil War), nor did anyone expect the Indians to capture Washington or to exhaust the cannon ball supply. What did count then (though they didn't always realize it) and will count in the immediate future (though the US may not yet admit it) is:

- Friendly casualties (fewer being better and an imposed threshold commitment probable).
- Political decisiveness—a result of certitude of conflict containment.
- Non-combatant casualties (fewer being better than more).
- Shortness of campaign duration.
- Costs that are “worth the candle”.

I do not have any idea whether the success criteria have yet been set for Louisiana Maneuvers—the major projected Department of Defense theater-level simulation. It would be interesting to see, when they are set, how well the above criteria match those which are established. My guess is that there would be greater anti-correlation than correlation with my list. If that be so, those who will fight and then evaluate these Louisiana Maneuvers would do well to refamiliarize themselves with the Indian Wars and what figures of merit were important then.

The leaders of today tend to believe that the Job-like afflictions of Congressional oversight and media attention are unique to these times. They tend to feel that it is only in the modern era that military initiative is severely contravened by an endless pot-pourri of well-meaning and not so well-meaning kibitzers. Such is not at all the case. Furthermore, the issues debated in the 1870s in the press, by Congress, and by the special commissions are all on the same subjects that are likely to be examined today. There are examples from those days of the applicability of the criteria just cited:

- The improvident excesses of non-combatant casualties during Colonel Chivington's Battle of Sand Creek polarized for several decades both the Cheyenne Nation and a large segment of Congress and its constituency. It caused the opening gun of several decades of micromanagement of military affairs by the legislature. Custer's surprise charge in November 1868 on an Indian village on the Washita, done without adequate reconnaissance, resulted in an excessive civilian (albeit Indian) slaughter which not only outraged much of the nation but also significantly hampered the legitimate requests of the Army for needed support for its next campaigns.
- The investigations of the friendly US losses in the Fetterman and Custer commands tied up Army management and jeopardized Army support, even though these losses were, in absolute terms, infinitesimally small compared to the campaigns of a then recent Civil War.

- Similarly, the long and seemingly endless guerrilla warfare of the Indian nations almost sapped the political vitality of the US constituency of those times. Vietnam, of course, is another manifestation of Shakespeare's Macbethian insight that "if it were done when 'tis done, then 'twere well/It were done quickly".
- After the firing on Fort Sumter there was an instant rallying around the flag and a deep public commitment to support of the war. But even there, with the passage of time, unity of support began to fail. With the Indian Wars which shortly followed, there was, from the onset, a questioning of the correctness of purpose which escalated with non-conclusion of the police actions.

Wars that the US initiates are inherently different from those in which it is attacked first. The rationale for an optional going to war is much more complex, and the criteria for success are undoubtedly different from those for defensive wars of the kind postulated for the Fulda Gap. Therefore it seems truly important to consider deeply and then agree upon the criteria of success for these new kinds of wars in advance and, having assessed the criteria of success, to use them in analyses of potential combat.

### CONCLUSIONS

Based on historical parallels, the projections described above could become reality. To prevent this outcome, and thus to avoid risking another Little Big Horn brought on by inept response to excessive budget cutting, the leadership must somehow keep history from repeating itself. Simulation can help, but other things must follow as well. The required intervention must be affordable, focused and, especially, understandable to those who must fund it, since in the end what the military wishes must be authorized by civilians.

My suggestions for such an intervention are:

- Focus research and development toward timely contravening of potential contingency force enemies with access to modern weaponry.
- Focus on transportation techniques for delivering adequate numbers of US forces rapidly enough to threaten decisive intervention.
- Design force structure to the manpower to be available and then staff to that level.
- Through use of distributed, interactive simulation technology, establish the priorities for equipment to be bought, tactics to be invented, training to be completed, and combat power sustainment techniques to be developed.
- Figure out how to assess the Army's needs in the way of a defense industrial base in this new budget and threat environment, and proactively size to that kind of base while the capability to select from existing industrial capacity still exists.
- Determine, before committing to the war option, what the real objectives are, what the success criteria are, and what the analysis using those criteria reveals.

### NOTES

1. R. M. Utley, *Frontier Regulars: The United States Army and the Indian, 1866-1891*. Macmillan, New York (1973).

