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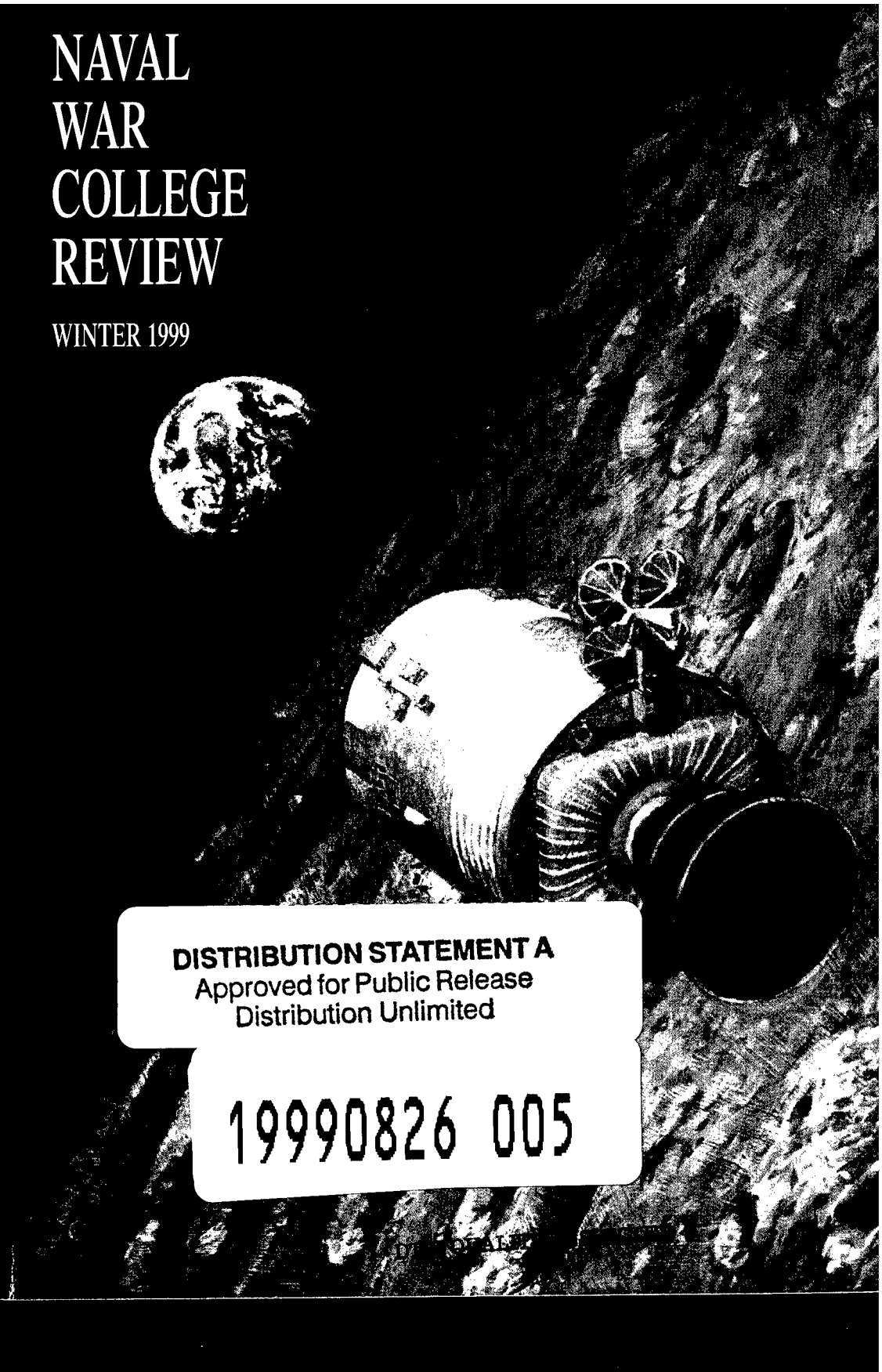

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Our Cover: Two remarkable paintings by Captain Alan Bean, U.S. Navy (Retired), an astronaut from 1963 until 1981 and now probably the world's pre-eminent space artist. On the front of the issue appears Captain Bean's "Homeward Bound": Apollo 8 with astronauts Frank Borman, Jim Lovell, and Bill Anders on board orbits the moon for the last time on 25 December 1968. On the back cover, in "Kissing the Earth," Alan Bean and Pete Conrad in the Apollo 12 lunar module *Intrepid* approach a landing on the Ocean of Storms. See page 23 for more information on Captain Bean and his art.

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Ψ

On 18 August 1998, at the annual Naval War College Convocation ceremony—which assembled the new student body, their families, and the faculty and staff of the College on Colbert Plaza—Vice Admiral Arthur K. Cebrowski, USN, President of the Naval War College, opened the 1998–1999 academic year with remarks adapted here for publication.

President's Notes

THE START OF A NEW ACADEMIC YEAR is certainly a significant event—this one more than most. But before beginning my formal

Vice Admiral Cebrowski has commanded Fighter Squadron 41 and Carrier Air Wing Eight, both embarked in USS *Nimitz* (CVN 68). He later commanded the assault ship USS *Guam* (LPH 9) and, during Operation DESERT STORM, the aircraft carrier USS *Midway* (CV 41). Following promotion to flag rank he became Commander, Carrier Group Six, and Commander, USS *America* Battle Group. In addition to combat deployments to Vietnam and the Persian Gulf, he has deployed in support of United Nations operations in Iraq, Somalia, and Bosnia and has served with the U.S. Air Force, the staff of Commander in Chief, Atlantic Fleet, the staff of the Chief of Naval Operations on four occasions, with the Joint Staff (as J6), and as Director, Navy Space, Information Warfare, and Command and Control (N6). Vice Admiral Cebrowski became the forty-seventh President of the Naval War College in July 1998.

address, I wish to recognize some of the very important people here with us. First among them are our new students and their families. All of us on the faculty and staff are extremely pleased to have you with us as we start our intellectual journey together. Many of you have traveled great distances, and some have literally come from the far corners of the world to participate in what is often referred to as the "Newport Experience." Welcome! In particular, I extend greetings to the sixty-seven international students of the Naval Command College and the Naval Staff College, who have joined us from friendly nations around the globe. We are truly honored to see your national colors flying alongside our Stars and Stripes.

Also new to the College is Rear Admiral Bernard J. Smith and the growing staff of the newly formed Navy Warfare Development Command, the NWDC. Many more officers and civilians will arrive over the next few months, bringing this new organization up to "fighting strength." Admiral Smith's team will be an integral part of our effort.

Next, I welcome back our returning "phased input" students and our talented and dedicated staff. I hope each of you found a little time to recharge your batteries and prepare to face the rigors of yet another academic year—and it will be rigorous. And finally, I welcome back our outstanding faculty, who are so critical to the success of our educational programs. They have built the reputation of this college, recognized by consensus as having the finest research and gaming programs and curriculum of any service college in the world. Joining our resident faculty this afternoon are our equally talented College of Continuing Education adjunct faculty, who spearhead our impressive Nonresident Seminar Program. In several weeks they will begin teaching over a thousand nonresident students at nineteen different sites around the world, thus extending our reach far beyond the confines of our Newport campus.

The faculty and staff are ready and eager to guide another group of enthusiastic students on a challenging journey of discovery and growth. However, I would like you to keep in mind a question raised by the prophecy of Ezekiel, chapter 28, of which the fourth verse says: "By your wisdom and your understanding you have gotten wealth for yourself, and have gathered gold and silver into your treasuries." How do we use our wisdom? Toward what end? We know much, but what are the consequences?

So, we begin.

As you entered the Spruance-Connolly complex this afternoon, you may have noticed the bronze lettering over the doorway that reads simply, "Naval War College." Let us take a few moments to consider what this title means.

First, we are indeed *naval.* We investigate critical issues and concepts from a maritime perspective. We have a strong tradition of "joint" education, and appropriately so—but while we are very "joint," we are unabashedly *naval.* I see no contradiction there. I expect all students will find that intersection both

comfortable and useful. Indeed, other services, and conflict on land, are coming to take on characteristics which some had thought uniquely naval. I care first for the operating forces, and I am committed to maintaining a fleet orientation. Here you will find the descendants of John Paul Jones. I have saltwater in my veins.

Our name clearly identifies us as a *war* college—and we must never lose sight of the fact that our mission is to prepare our students for the awesome responsibilities of leadership in crisis and in combat. No President of this historic college has sought war, but none can shy away from thinking and planning for war! I will be no different. While we study the development of national policy, we are not politicians. While we research and analyze problems, we are not scientists. We are warfighters! We are under arms, those whom the nation will call in times of crisis. Your work at the Naval War College will ensure that you are ready when the call is sounded.

One hundred and fourteen years ago, our founder, Rear Admiral Stephen B. Luce, said that the Naval War College would provide "a place where our officers will not only be *encouraged* but *required* to study their proper profession: war." Pope Paul VI has said, "If you want peace, work for justice." Our nation and, indeed, the whole world should bend to that effort. But our job here is to deal with the sad consequences, both current and historical, of failure in that effort. As we have since the founding of the Republic, we seek to prevent war by being ready to fight. Luce also said, "It is only by a close study of the science and art of war that we can be prepared for war, and thus go very far toward securing the peace."

And finally, we are a *college,* in the finest traditions of higher education. This is a place of study and reflection, away from the distractions of operational commitments and personnel management. We enjoy an environment of academic freedom, where student and staff alike are people of considerable accomplishment, where your ideas have value and are respected, and free and open discussion is expected and encouraged. We will exercise our academic freedom to consider all relevant topics—but we will constrain ourselves to applying our limited resources to subjects with clear applicability to real-world problems. We will move well beyond the bounds of conventional wisdom, while not wasting our energy on the fringes of utility.

Among our faculty are graduates and professors from some of the world's greatest universities, and these highly respected educators help ensure that the time-honored traditions of scholarship are nurtured. The combination of scholastic excellence and the ethos of discipline and sacrifice of our student body virtually guarantees the continuation of the intellectual rigor for which this college has long been recognized.

We have a proud tradition, a legacy of accomplishments going back over a century, and I acknowledge the superb foundation built by the intellectual

labors of our predecessors. But I refuse to be captured by the lure and pleasures of historical reflection. We will not steer by the wake. Instead, I direct your attention toward the remarkable future that we will create together. I have no interest in the folly of predicting the future; I intend, with you, to create it.

Four weeks ago, from this podium, Admiral Jay Johnson, the Chief of Naval Operations said:

> The challenges we expect to face in the 21st century have caused the Navy leadership to stand back and think about where we could centralize the kind of strategic inquiry, visionary innovation, and doctrinal analysis necessary to keep our Navy several steps ahead of the threats. And the answer was clear—our Naval War College at Newport. . . . [This] is the start of a new golden age of the Naval War College . . . a *new* Naval War College for a *new* era. We find ourselves in an era where the comfort of perfecting the tried and true must give way to the risks of confronting the unknown. . . . The challenges are new, and new tools must be brought to bear: the tools of innovation, experimentation, rigorous examination of concepts, . . . the tools of a high-speed, networked, Information Age.

The CNO went on to envision an institution dedicated to crafting our future as a service; an institution inclined toward the fleet; one focused on both rigorous strategic thought *and* execution; an institution destined to remain the Navy's intellectual center of gravity. By working together, by whatever means, modest or great, we can fulfill that vision.

So, we are here to create a new Naval War College—one that will prepare the Navy for the next century. We are here to incline that new organization to the fleet, and to focus that new organization on the future. Lessons can be learned from the *past;* there are staffs to deal with the *present;* it falls on us to create our *future.* We are here to link the long history of conceptual development at the Naval War College with information-age technology, modern concepts, and rigorous operational experiments—all to secure our nation's interest, in a new era, from the sea. Short of combat, institutional change is the most difficult and perilous challenge a leader can undertake. Yet, failure to do so would be irresponsible.

I have spoken about the need for change, but let me make clear from the outset that my intention is not to make a radical departure from our well established and rigorously tested curriculum and instructional methodology. It is superb! What we now do is on target. The "output" of our educational process will continue to be a student capable of critical thinking, who takes a rigorous approach to problem solving, who values and uses the tools of analysis, and who can synthesize across disciplines. The basics will remain the same: to help our students develop strategic thought and prepare for high command.

But beyond this—and in response to the CNO's vision—our size, mission, and goals have been expanded. The most visible sign of this change is the

creation of the Navy Warfare Development Command, under the direction of Rear Admiral Smith; while a subordinate command, it is inseparable from the College. The great strength of the Naval War College has always been its ability to adapt its program and its structure to the needs of the naval service and to nurture innovation. In the 1920s, the Naval War College faculty, staff, and students together developed innovative fleet tactics, and the simulations and games required to test the feasibility of those tactics. In the 1930s the College's faculty and students together developed the concept of the effective fleet staff—a concept applied in the 1940s with devastating effect. Now, I want to foster that same sort of cooperation among the staff of the Navy Warfare Development Command, the officers who attend courses and war games, the faculty, the chair holders and the staff of the College, and the personnel who participate in the Fleet Battle Experiments.

The NWDC's mission has three main parts: to focus and champion warfare innovation and concept development and identify the capabilities which must flow from those concepts; to design, plan, and coordinate the Navy's Fleet Battle Experiment program; and to approve, synchronize, and disseminate Navy doctrine.

The dynamics of the Information Age, or more accurately, the Knowledge Age, bring us to this point. This is an age dominated by the value and power of access—to global markets, resources, people, information, and ideas. With increasing access come human interaction, the resulting adaptations, and the inevitability of nonlinear change. That is the phenomenon that characterizes the current age and befuddles the custodians of the status quo. Ours is the age when information-based processes are the value-adding process, the age when quality flows from, and is dominated by, access and speed. Ours is the age when time spent on perfecting and optimizing what is known is more profitably spent seizing the unknown, even if imperfectly. Most of all, ours is the age when the utility of an activity is measured by that activity's ability to create *new* knowledge.

In our age, the creation of new knowledge will increasingly be seen as the true measure of the value of this institution. The consumers of this new knowledge will be the decision makers and the operating forces who will participate in the development of, and increasingly value, this commodity. The judgment of the Naval War College's worth will be made by our customers, the operating forces.

To rethink that with which we are comfortable is an essential and difficult enterprise, but we must do this and more. We truly learn only when we have experienced. The successful methodology rigorously developed at the Naval War College enables us to gain experience vicariously, through dissertations, seminars, and war games. Now, with the advent of the Navy Warfare Development Command, that experience will be carried forward to the operating forces. The extent to which we move the operating forces to address needs not

yet articulated, and embrace changes still lacking consensus, will be a measure of our success.

New knowledge is not created in a vacuum. The creation of heat is inevitable as the new ideas chafe against old notions and static minds. But the proper object of friction is traction. New ideas must gain traction with the customer to create a market, because without a market there is no product. While NWDC is a new command, my focus is not on building organizational structure but on creating an effective product. Accordingly, I have asked Rear Admiral Smith to take the rudder in hand and move out smartly—and he has already done that.

The requirement for new knowledge is not novel for the Navy, but the times and the needs *have* changed. The Naval War College was the Navy's pioneer in developing the idea that the intelligent execution of the commander's intent should flow from the mutual understanding between junior and senior officers of operating concepts and procedures for a given circumstance. When the first steps were taken to develop that idea for the Navy here in Newport in 1910, it did not have a name. Today, we have come to call it doctrine.

Critics have said that navies have come late to the concept of doctrine. They should study Nelson at the battle of the Nile. In his book *Fleet Tactics*, Wayne Hughes says, "Doctrine is the companion and instrument of good leadership . . . but doctrine is not dogma." For navies, doctrine must be a dynamic process, developed collegially, and tending toward real time. To the extent that doctrine tends toward dogma or becomes static, it has no value to the Navy. The exercise of old doctrine adds no new knowledge.

We must move naval forces to the habitual practice of experimentation. We *exercise* to hone skills, but we *experiment* to create new knowledge and develop the inclination for innovation in battle. That is how battles are won. History will not reward an officer for slavish adherence to doctrine. In the Knowledge Age, doctrine that lacks a real-time, dynamic, innovative character will be seen as the refuge of the uninformed. We must do better for our fighting forces in every service.

To say that we will work at the intersection of unarticulated needs and non-consensual change begs for specificity. Intellectualization is a necessary first step but is in itself insufficient. We must do that hard work, of course, but we must also have a cultural inclination toward execution and resources. So the work we do on the items and issues I will mention is not complete until it is in the fleet. In every case, the issue and resulting work should ultimately take a future-going perspective. Whether looking at ancient battles or modern technology, the question should always be asked: What are the implications for the military and its activities in the next century?

Network-centric warfare is increasingly seen as the military expression of the Information Age. The Center for Naval Warfare Studies and the War Gaming Department will continue the good work done in our Global Game 1998.

Network-centric warfare should become the compelling theme in the Joint Military Operations, or JMO, curriculum. NWDC will identify and refine the implied concepts, develop them for experimentation, and see that they are reflected in emerging doctrine.

More specifically, network-centric warfare enables promising alternative concepts of command, command relations, and command-and-control processes. Furthermore, there is the fundamental question of what it is that the commander commands—forces, information services, or key processes? Accordingly, I have asked Captain George Jackson, chairman of the JMO Department, to take the lead in studying these issues.

There are several emerging sciences, such as complexity, genetics, and many others, that will have implications for the military in the Knowledge Age. Accordingly, I am asking the Dean of Academics, Dr. William E. Calhoun, to examine how we may leverage the considerable work already in progress so that we think across academic disciplines to determine impacts and opportunities for concept development.

Next, our forces and the associated resource allocations are currently out of balance with respect to the challenges of knowledge-based warfare. Accordingly, I have asked the Center for Naval Warfare Studies and the National Security Decision Making Department to take up this issue in earnest. We need a new concept of what constitutes a "balanced fleet," a balanced force.

I want our students and staff to be working in real geography with real cultures, economies, and intelligence. The Asia-Pacific and South Asia regions are of growing interest to the nation, for many enduring reasons. Accordingly, I am directing that to the extent practical and consistent with the broader objectives of the College, our work be focused on these regions.

The Navy provides two enduring "product lines" to the American people that are of immense value to the nation: freedom of the seas, and forward-deployed combat power. But in this new age, all elements of *how* to do that are open to examination. We should examine each platform and element of the force to determine where we are optimizing capabilities at decreasing rates of return and, therefore, must move to new solutions. More specifically:

- Finely tuned global economies indicate an increasing "time value" of the Navy. The Center for Naval Warfare Studies should explore that concept and its implications for presence and force deployment.
- The CNO's vision for the twenty-first century foresees a Navy that will decisively and directly influence events ashore. Yet no one in any service has viable concepts or technologies to deal with the fastest-growing target set ashore or afloat—moving targets. For technical, doctrinal, and organizational reasons, existing capabilities fall short of required timelines. Accordingly, I am asking

Rear Admiral Smith to team with the Strategic Studies Group and the Defense Advanced Research Projects Agency to lead this effort, as "job one."

• Next, how does one assure freedom of the seas and forward-deployed combat power in the Information Age? I am asking Dr. Robert S. Wood, the Dean of Naval Warfare Studies, to take as a top priority identifying the imperatives and opportunities for the Navy in the area of information operations and information warfare. That work later will be expanded and placed in a national context.

• With the increasing globalization of our economy, loss of access for trade can be devastating for the nation. Similarly, to the extent a regional enemy can deny access to our land-based forces, naval force tasking can exceed capacity, and national options will be narrowed. Accordingly, I am asking Rear Admiral Peter Long, Provost of the Naval War College, to leverage existing work and team with the Naval Postgraduate School and others in determining how best to address this issue.

• Speed has always been of value in warfare, and daily it is being revalued yet further. If the value of speed is increasing, then those factors, sectors, or forces that slow us down must either change or cease to exist. We must discover new measures of effectiveness, MOEs, for this new character of war. Old MOEs encourage old thinking. I want our war gamers and our faculty to take the lead in identifying and using new measures.

There are additional significant issues that must be addressed. First among these is the need to improve dramatically and demonstrably our ability to sharpen and focus weighty issues for decision makers. We will be addressing the different facets of this difficult issue under the leadership of Dr. Wood and Dr. William E. Turcotte, chairman of the National Security Decision Making Department.

With our rapidly changing society, the role of the military in that society is also changing. Accordingly, I have directed that the spring intersessional conference be focused on this issue. The Contemporary Civilization Lecture series also will feature related issues.

The Goldwater-Nichols Act is more than ten years old, and the National Security Act, which created the Department of Defense, is now a half-century old. We need a critical, rigorous rethinking of the American concept of jointness and how it is currently practiced. As the Joint Military Operations Department leads this effort, it should be in the context of the Information Age.

Dr. George Baer, chairman of the Strategy and Policy Department, has begun research into the utility of classical military force in the coming age. I encourage him to expand this valuable work and export it throughout the College for a broader determination of its implications for the Navy and the nation.

There are also several areas of process that deserve attention. I will mention only a few, leaving the rest to develop further with staff.

- Our focus is, and must remain, on the operating forces, but financial resources for those forces come from Washington. Accordingly, I am asking Dr. Turcotte to work with me and Rear Admiral Smith to help determine the most effective way Newport can team with the emerging Navy headquarters decision team and their processes.
- I am tasking the War Gaming Department to develop or obtain new models capable of capturing the bottom-up phenomenology of network-centric warfare, and new methods so that rigorous war gaming can be brought to bear on much shorter timelines.
- Members of the staff and faculty have already provided many good suggestions for methods to strengthen the Advanced Research Program. The number of students capable of doing advanced independent research is small, but the need is great. You should expect to see that program expanded.
- We must also expand the Decision Support Department's functionality by linking it to all five numbered fleet command centers, the Acquisition Center of Excellence in Washington, the Marine Corps University in Quantico, and the Naval Postgraduate School in Monterey.
- Similarly, our College of Continuing Education must expand our off-campus capability, using emerging distant-learning concepts and technology.
- Again using network technology, we must put doctrine on a real-time basis so that it will have a dynamic within the fleet consistent with this dynamic age. The fleet, not Newport, is meant to own doctrine.
- We will develop strategic teaming relationships based on interdependencies with the Strategic Studies Group, the Naval Postgraduate School, the Office of Naval Research, the warfare centers, other service battle labs, the U.S. Atlantic Command for joint experimentation, and other military and civilian intellectual centers of excellence.

How will we know when we have achieved all this? It will be when the fleet operators are habitually given to experimentation—when we move from discrete experimentation catalyzed by Newport to continuous experimentation in the fleet. It will be when we have a decision process in place capable of sharpening issues and inspiring confidence. It will be when warfighters see innovation as being in the mainstream of their daily and warfighting activities. It will be when doctrine is no longer the codification of the past but a dynamic, real-time process that fosters rather than stifles innovation. It will be when our product has direct and positive influence on the operating forces, the resource-allocation process, and the core issues of national security matters—not because we seek

such influence, but because our product merits it. It will be when these massive departments and agencies embrace change as not only an inevitability but an ally. Ultimately, our success will be measured by the extent to which we have influenced the world toward the course of justice and peace.

Nothing I have said is easy, but the work is important. These are tasks and issues worthy of the keenest intellect. Why this boldness; why the speed? For such a large ship to make a significant course change requires substantial application of rudder. Shiphandlers know that the rudder is most effective with significant way on. In the Naval War College, the CNO has selected a modest rudder to turn a mighty ship, but I am confident that we are all up to the challenge.

I am asking for a great deal, and the changing world demands that it be accomplished at best speed. The new millennium is only sixteen months away, and I am committed to seeing many of these projects and initiatives completed before the turn of the new century. If all that seems impossible, consider the first verse of Psalm 127: "Except the Lord build the house, they labour in vain that build it: except the Lord keep the city, the watchman waketh but in vain."

I am both thrilled and awed by the voyage ahead. With the gift of faith let us head out to sea together. Rear Admiral Smith, Rear Admiral Long, Dean Calhoun, Dean Wood: take in all lines, head us fair, ring up best speed, and make good our rendezvous with the twenty-first century

ARTHUR K. CEBROWSKI
Vice Admiral, U.S. Navy
President, Naval War College

Deep Coalitions and Interagency Task Forces

Lieutenant General Martin R. Steele, U.S. Marine Corps

THE RELATIONSHIP OF ECONOMIC PROSPERITY to security is a matter of particular interest to the U.S. Marine Corps as it considers strategy for the twenty-first century. The threads that tie strategy and economics are complicated. This complex condition is exacerbated by the very challenging economic issues we face within each service. We are all coming to grips with how to provide forces and combat capabilities to meet our strategic vision now and in the future, in a resource-constrained environment. These budget battles are at the operational level, and unfortunately they sometimes cause us to lose sight of the real changes occurring at the strategic level. As our nation struggles to come to grips with a dramatically changing world, one thing is clear: economic well-being is a global issue. No longer can economic and national security issues be treated as separate entities. They are now inextricably linked. This is one reason we in the Marine Corps believe a change in thinking and a new approach to national security is needed.

Lieutenant General Steele assumed his current duties as the Deputy Chief of Staff for Plans, Policies and Operations, Headquarters Marine Corps, Washington, D.C., on 3 February 1997.

Enlisting in the Marine Corps in 1965, he deployed to Vietnam in the 1st Tank Battalion, 1st Marine Division. He was commissioned a second lieutenant at Officer Candidate School in 1967. Thereafter he served in a number of field, overseas, staff, liaison, and command tours in the armored and assault amphibian communities; as operations officer of Combined Forces Command, Republic of Korea; as Deputy Director, Marine Air-Ground Task Force Warfighting Center; and during DESERT STORM as operations officer of Marine Forces Central Command. Since promotion to flag rank in 1993 he has been assigned as Commanding General, Marine Corps Base, Quantico, Virginia, and Director for Strategic Planning and Policy, J-5, U.S. Pacific Command. Lieutenant General Steele holds a bachelor's degree from the University of Arkansas, earned master's degrees from Central Michigan University and Salve Regina College (1985), and is a graduate of the Naval War College.

To gain a proper perspective, let us break this down into three areas. First, the world is changing, particularly in the way it conducts commerce, and it will be different, possibly much different, in the future. Second, the Marine Corps' approach to the different future that we envision (a future that will hold challenges both in the budget available to the armed forces and in the external security environment—including the increasingly global economy) is much different from the approach many others are taking. Third, the different world that we foresee will present challenges that the U.S. Marine Corps, and the U.S. military, cannot face alone. To meet these challenges we must forge coalitions among government and nongovernment sources. Among the latter are business, academic, and nonprofit organizations.

The Commandant of the Marine Corps has long argued that we find ourselves at a "strategic inflection point"—a point described by Andrew S. Grove, chief executive officer of Intel Corporation, as a time in the life of a business when its fundamentals are about to change. Grove argues that when poised at such a time, one can no longer fight the competition in the same way, because "the rules of the game" have changed. As a result, technology can no longer ensure a dominant market position. Why? Because simply laminating new technology on top of old concepts and doctrine and organizations is useless in the new strategic environment. Instead, one has to try to understand how the environment has changed, anticipate the operational challenges such changes might create, and then conceive and develop new concepts and organizations designed to solve them. Whether we like it or not, an organization's structure has a profound impact on the way its human members think.

The Cold War ended peacefully, but that did not halt the continued development and proliferation of nuclear weapons. This proliferation, vividly demonstrated in the tests of nuclear weapons by India and Pakistan in May 1998, does not result in greater stability. As events have demonstrated, it serves only to increase the strategic chaos and uncertainty of the post–Cold War era.

Consequently, Marines believe that even narrowly defined national security will increasingly involve the knotty operational problems of intrastate warfare, hostile operations by nonstate actors, and asymmetric interstate attacks, whether caused by ethnic tension, religious strife, or the economic competition between haves and have-nots. For those who must deal with life-or-death issues on the ground in the real world, what does this mean? The answer is apparent every day, on CNN and in operational summaries: for the next several decades, we will likely be challenged less by the sons of DESERT STORM and more by the stepchildren of Chechnya. Because of the emerging distinction between agrarian, industrial, and information-age societies and the antipathy some feel to our country and its values, there will be an ever-present danger that weapons of mass destruction—be they nuclear, chemical, or biological—may be seen as instruments of deterrence against America.

At present, there are no clear *mortal* strategic threats or "peer competitors" on the horizon. True, we still can be seriously challenged—for example, if things "go south" (literally and figuratively) in Korea. Also, we have not yet reached the final chapter of our Persian Gulf experience. But the magnitude of today's threats pales in comparison with those our predecessors faced in World War II and that we faced during the Cold War. In many ways this nation is more secure today than at any other time in its history. Moreover, we are spending as much on defense as the next six great powers combined, and four of them are our allies. However, we are missing one key piece of information: a clear vision of the capabilities needed to operate in the future security environment.

The end of the Cold War also means that defense is no longer a subject that excites the American people. We in the military are victims of our own success, as well as of the consequences of demographics and of our shift to the all-volunteer force. Consider that in 1945, in a country of 150 million people, there were close to fifteen million men and women under arms; today, in a nation of close to three hundred million people, there are a little more than one million men and women under arms. In five decades we moved from one in ten Americans serving in the military to one in three hundred. No wonder fewer and fewer Americans are related to, or know, a service member.

An inward focus on domestic issues, in the absence of any pressing external threat, is a natural tendency in a democracy. Unfortunately, this lack of interest in defense issues is mirrored in Congress. Since representative government is designed to reflect the will of the people, it should be no surprise that Congress is clearly focused on domestic issues, with an emphasis on economics. As you well know, members of Congress are not isolationists. They are, however, thinking principally about issues like crime, social security, jobs, and education—not surprisingly, the issues about which the American people are most concerned. As a result, up-and-coming members no longer seek seats on the House National Security Committee or the Senate Armed Services Committee. Reflecting the clear economic focus on the Hill, they vie instead for seats on the Commerce or Finance committees. Moreover, the demographics of Congress parallel trends in the nation at large: where in 1975 more than 70 percent of the members of Congress had military experience, today the fraction is half that and falling. To use my own service as one example, just eight years ago there were thirty-two former Marines on Capitol Hill; today there are but nineteen. Moreover, the few members who are interested in defense are focused on a bewildering variety of issues—ranging from the shipbuilding base, to B-2 bombers, to gender-integrated training, as well as such very large topics as readiness, force modernization, and personnel retention.

As a direct consequence of all this, it is highly unlikely that a clear-cut national security vision can be established. "Containment" is gone, but nothing has replaced it, at least in the American public's thinking. Marines feel strongly

about their view of the future and what it might hold—but so do airmen, sailors, and soldiers, and their collective views, as you well know, are often diametrically opposed. Each of the services has friends on Capitol Hill, but they, because of their small numbers, can seldom push through initiatives that clearly favor a single service. As a result, I am less than optimistic that a fundamental change soon will come about as a result of congressional activism or a measured strategic debate.

This is not to say that change will not come. It certainly will. But barring a national security crisis that galvanizes substantive strategic discussion, it seems most likely that change will come about as the inevitable result of declining resources. Like it or not, the budget is driving us inexorably toward some very difficult choices. Simply put, sooner or later, both the Congress and the services must confront the fact that at current budget levels we can no longer sustain and modernize our force structure while also operating at the tempo and on the scale that we have been—deployed across the planet, ready not only to respond to crisis but to help ensure economic vitality, stability, and security. For the past three years the Commandant has testified to Congress that the Marine Corps is underfunded, particularly in its modernization account. The same is true for the other services. Something needs to change, but what is not yet clear.

In a balanced-budget environment, to expect simultaneous increases in all the service budget shares defies reason. For the first time since the end of the Cold War we are in a zero-sum budget game: any congressionally directed increases to any particular program or service must result in a like decrement somewhere else. And relief is nowhere in sight. By the year 2000, defense spending as a share of gross domestic product will fall to 3.2 percent, less than in any year since before the Korean War, and less than a third of pre-Vietnam Cold War levels. Given the pressures that entitlements and debt reduction will continue to exert on the federal budget in the first decade of the twenty-first century, it is hard not to conclude that each of the services will be forced to contend with decreased, not increased, budget figures.

Additionally, some economic trends are emerging in the world that have impacts on our views of national security. Businesses are becoming more global in scope, and capital is flowing globally, but trade is becoming more regionalized. The formation of such economic entities as the European Union and the Asia-Pacific Economic Cooperation organization is an example. This regionalization of trade is prompting a focus on regional security. Often this means that the nations involved want to handle their own security issues without the intrusion of outsiders like the United States on their soil, and also that they are less likely to participate in out-of-region excursions. In fact, the "one world government" that so many feared is now less likely to appear. Of course this makes it harder for the United Nations to garner support for operations around the world, resulting in correspondingly increasing calls upon the U.S. military.

These are some of the social and economic trends affecting the strategic security debate in our country. We need also, however, to look at the interface between the strategic and operational levels if we are to understand the total dynamic. The Marine Corps believes that the current strategic inflection point will result in a kind of "revolution in national security affairs." This revolution will be the result of four key currents now discernible in our global "fishbowl":

- By 2025, as a result of a steady *migration to the urban littorals*, more than 70 percent of the world's peoples will reside in urban areas. The majority of these peoples will live in cities in the world's littoral regions, within five hundred kilometers of a coast.
- In the increasingly urban world, there will be a *global "trisection"* of information, industrial, and agrarian-age societies, with ever-increasing cultural and economic gaps between them. These gaps will be exacerbated by a large "youth bulge" in agrarian-age countries as well as in the poorer, infrastructure-impoverished industrial-age countries; those youth will face decreased employment opportunities.
- As a result, a *pervasive tension* will exist, as nations and peoples competing for wealth and resources interact. Mass communications will shape opinions and give rise to movements that transcend, and are beyond the control of, governments.
- To this add *rampant asymmetry* in the worldwide military competition. Instead of the homogeneous Cold War threats, built around large armored forces, there will be a "hyper-diversity" of threats, spanning a broad range of technology, operations, and tactics.

So how does the Marine Corps view the situation? The bottom line is that given the economic outlook sketched earlier, we will be able to afford neither the Marine Corps we have now nor the one we need in the future. We might stick our heads in the sand and deny this simple fact; or we can pridefully assume we, and only we, will benefit from large budget allocation increases at the expense of other services. Instead the Corps is preparing for the future through a process called "Sea Dragon," a five-year experimental effort.

This effort is the focus of immense institutional capital—invested in the Marine Corps Combat Development Command, located in Quantico, Virginia. The business terminology is intentional, because we consider carefully any use of our precious capital, whether human, intellectual, or cash. Also, our planning process for these investments is very much like the strategic planning process so in vogue in today's business world. Only our cost of failure is higher. By analyzing the pertinent strategic guidance and comparing it against the changes we envision in the future, we develop concepts that focus on our

"niche capability"—not only forced entry from the sea but the increasingly demanding roles of naval engagement throughout the globe, and preventive defense. So the commanding general of the Combat Development Command is the single "commander" for the combat development system, responsible for the development of doctrine, organizations, training, education, and support for operating forces and Marine air-ground task forces. He also coordinates the development of our future concepts and will be the link to the Naval War College's new component, the Navy Warfare Development Command.

Additionally, there has been an effort to conceptualize a "combined-arms approach" to national security, one based on the idea of building *deep coalitions* among interested partners both inside and outside government, and among international organizations and our allies.

This has been an especially knotty problem to debate, because it often generates accusations of studying a problem outside the Marine Corps' "traditional lane." However, at a strategic inflection point the old lanes no longer have meaning. We are convinced that the notion of a "three-block war"—that is, Marines feeding and nurturing hungry children one morning in a humanitarian assistance role, separating tribal factions at noon in peacekeeping operations, and fighting a mid-intensity conflict that same night, all within a three-block radius—requires us to think anew about the problem of operations other than war and to recognize that the old paradigms have indeed broken down.

As a result, we believe, we must spend more time closing the interagency gaps between cabinet departments, expanding the notion of "jointness" to include a new level of governmental coordination, and forging new collaborative partnerships with our allies and nongovernmental organizations

It may even be time to review the 1947 National Security Act—the basic national security organization that served us so well during the Cold War. Although this specific proposal has had mixed reviews, nearly all agree that times have changed, that today is truly not like yesterday, and that we must take a hard look at our "organization for combat." We need to bring together all the elements of national power, looking beyond the Defense Department—to the State, Commerce, and Justice departments, to other government agencies, business, academia, and the myriad of nongovernmental and private voluntary organizations that operate globally but have complementary goals and share common values. Some are fearful of such a leap into uncharted water, but we hope that the needed debate will begin soon. Otherwise, the current strategic inflection point will be a huge missed opportunity. We are ready to explore what military professionals can do to establish "deep coalitions" applicable to solving the operational challenges of the three-block war.

How would this idea of bringing together all elements of national security work? How can the business community influence the U.S. military's ability to

provide a safe, secure, and stable global environment for commerce? Take, for example, large companies with activities all around the world. Their employees are in no way "spies," and they would properly refuse to "collect intelligence" even if they were asked to. Nonetheless, they interact closely with their counterparts all over the globe. They might find themselves on the scene in the early stages of what could become a crisis, seeing in the normal course of business indications that the nation's intelligence community might miss—as the Central Intelligence Agency seems to have, in the case of the Indian nuclear tests. If this information can find its way to the nation's leaders, diplomacy might be able to avert a situation with worldwide implications. Yet we now have no linkage, formal or informal, with this source. Here is a way to improve our "human information" resources without a large expenditure of national treasure. U.S. companies want a stable environment to conduct global business, and they are willing to help ensure this stability.

This is not to say the business community is the only source of valuable information. A Sikh newsletter, one with in effect millions of eyes and ears in India, warned in early May 1998 that preparations were underway for an Indian nuclear test. Another example of a heretofore untapped resource is the myriad of retired and former military personnel who have worked overseas, for both U.S. and foreign companies. They have access to a wealth of information that is not readily available elsewhere. One retired Marine suggested, "We have no desire to become junior G-Men. . . . However, we do have years of experience and knowledge of areas, locations, and information that is not found outside of a few people, in the know." In a precrisis or crisis situation, their information could prove invaluable. They have their fingers on the pulse of a region, and their information, personal contacts, and experience could help avoid a misstep. Such inputs might not have an impact on the final outcome of a particular crisis, but we will never know until we start to think innovatively and expand the horizons of our security partnership.

The business community—and not only the traditional weapon systems and consulting contractors—can also contribute to our efforts to think through future warfare concepts. For instance, large computer makers work every day, for their own reasons, on security for network-centric environments—an issue that looms very large for the military today. In fact, this is the sole focus of hundreds of their highly trained employees. The military cannot possibly match this focus in numbers or expertise. So, as the chief executive officer of one such firm recently asked, "Why not let the computer industry handle this rather than create four duplicative, not as effective, capabilities?" It is a very good question, and exactly what I mean by bringing together all elements of national power.

How do we do this? The Quadrennial Defense Review and the National Defense Panel gave us some ideas, but these take us only so far into the future.

We need to look further ahead and consider more options. "Deep coalition" partners will find the key sometimes in cooperation with the military, sometimes working with—instead of against, as is often the case—each other, without the military.

In this regard, the QDR and NDP must be viewed as just the beginning of the fundamental debate about U.S. strategic thinking, which in our view is long overdue. With the end of the Cold War, the world is undergoing a strategic shift greater than that which occurred after World War II. Few of the answers to the questions that lie ahead have been found. I suspect that once a true debate begins we will find the answers in organization, technology, and people. None of these will be the "silver bullet." All must be explored and integrated. Again, the real question is, "How will this occur?"

The strategic environment will increasingly call for new ways of organizing to address the complexities that the future will bring. Over the past decade, corporations have quickly adapted to opportunities and challenges in the world, and as a result we now witness economies of scale reaped at the global level, common currencies and skill specializations based on regional similarities, and products scaled down to individual cultural, local, and personal tastes—all over the world. If corporations can change to meet the demands of the world's consumers, then surely governments can change to meet the needs of their citizens.

As America's first-to-fight force, the Marine Corps is often the nation's first response to a crisis. As such, the Corps is not only the first representative of the U.S. government but often the cornerstone of the nation's response. The Marine Corps has noticed that its expertise—in expeditionary warfare, combat in three dimensions, direct action, urban operations—falls outside of what is elsewhere considered requirements. The Corps operates in the humanitarian, technological, diplomatic, and economic realms, and we often wonder why we do so alone, when other government agencies have expertise that fits them to serve alongside us. Given the reality we face and the rich intergovernmental possibilities we envision, we believe that a truly "national" response is needed for crises to which we currently respond only, or principally, with a military force. A variety of government agencies, as well as such nongovernment actors as academia, law enforcement, the judiciary, business, and relief organizations, should be called on to offer their particular contributions to crises that are increasingly multidimensional in nature.

A task force is a natural idea for an organization like the Marine Corps to propose. Over the past four years we introduced the Chemical/Biological Incident Response Force, or CBIRF, to respond to catastrophic events like Tokyo's sarin attack. The CBIRF received recognition for its service at the Atlanta Olympics, the president's inauguration, and the economic summit in Denver. The CBIRF serves as a model for one potential national security environment. It uses

information technology to tap into a rich network of nongovernmental expertise that the Corps could never provide on its own. Through this network we have Nobel laureates as advisors, universities as consultants, and biological sciences experts for analysis and antidote services. The CBIRF introduces another novel concept: it is subordinate to local civil authority. Instead of having the military charge in and take over, the CBIRF puts first-response capabilities into the hands of those with the local experience and expertise. Such concepts lead us to believe that other elements of national power as well can be brought to the point of policy implementation at the most critical time—in response to crises, when our actions save the most lives, lastingly shape a situation, and have the greatest likelihood of success.

This force would be task organized for the particular issue or problem at hand, bringing to bear the full weight of national capabilities to help solve complex problems. The makeup of the task force would be tailored to the contingency, but it would be formed around a standing command structure. By design, a task force commander would ensure that no individual department or agency dominates the response to a contingency. Because these challenges are rarely purely military in nature, we do not envision the military leading such a task force. Rather, we see the deep coalitions of business, academia, Justice, and State working together, rather than in their own "stovepipes," as the primary agents for deterring trouble and preventing situations from blossoming into crises. If a crisis does occur, the normal role of the military would be to provide security and stability, allowing the deep coalition partners to solve the underlying problem. The intrinsic value of this task-organized structure is that it would be led in each case by the agency whose mission is most naturally aligned with the nature of the crisis.

Such a sweeping proposal will not be implemented overnight. The Marine Corps realizes that this is a project in its infancy—one with hope and promise, but clearly not one that can be tested tomorrow. We believe that a generational shift must occur—with interagency training, education, and career paths built around such a task force, much as the military's Joint Staff model has evolved since the Goldwater-Nichols Act of 1986.

We have forever shed our Cold War paradigm. The world's security environment has dramatically changed. National security changes need to occur at the operational and strategic level of the U.S. government. It is still too early to predict with any degree of accuracy how national strategy will evolve; there are simply too many options. In the absence of a crystal ball, that evolution can best be accomplished by a debate, followed by a complete rethinking, restructuring, and integration of our security organizations. We must also realize that there are no procedural, organizational, or technological silver bullets: there will always be a need for good people and a sound underpinning in the operational arts. We

will be ready for the future if we take time to think about it, validate new ideas, and allow each service to experiment, and if we operate in conjunction with all the elements of national power in the dramatically changing environment of the twenty-first century.

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This Issue's Cover

Captain Alan Bean, born in Texas in 1932, was commissioned in 1955 from the Naval Reserve Officer Training Corps program and entered flight training; by 1960 he was a test pilot, and in 1963 he was accepted for astronaut training. In his eighteen-year career in the U.S. space program he flew (and walked on the Moon) in the November 1969 Apollo 12 mission and commanded the Skylab II space station. Throughout those same years, however, he had been both studying painting and practicing it as an evening relaxation. Upon his retirement from the Navy and the space program in 1981 he devoted himself to a new career: "to paint the moon, to share and to document through my art what we as a nation accomplished with Project Apollo, and to make sure each painting is as beautiful and as accurate as I know how to make it."

Captain Bean's work has a tactile, plastic quality fully evident only in the original, but close examination even of a reproduction reveals glimpses of it: for instance, faint striations on the Moon's surface to the lower left of Apollo 8, and (on the back) on the Moon's surface to the left of the rising Earth, are in fact full-size impressions of one of his lunar boots. (The original paintings are large, some three by five feet.) As George E. Hicks, of The Greenwich Workshop, which handles Captain Bean's paintings and prints, explains in his pamphlet *Alan Bean: Astronaut, Lunar Explorer, Fine Artist*, "To create a textured surface, [Bean] mixes and applies a thick acrylic modeling medium to the board [of aircraft plywood]. As the material begins to harden, he works on the surface by marring it with tools he actually used on the moon. The lunar hammer that drove Old Glory's flagstaff into the soil [and] the core bit used to collect soil samples . . . find their way into, or more accurately, *onto* each and every Alan Bean original."

Implementation of International Humanitarian Law in Future Wars

Louise Doswald-Beck

ANY ATTEMPT TO LOOK INTO THE FUTURE is fraught with difficulty and the likelihood that much of it will be wrong. If someone in 1898 had tried to foresee issues relating to the implementation of the laws and customs of war in the twentieth century, it is highly unlikely that he could have foreseen many of the major developments that have characterized warfare in this century and, therefore, the difficulties of implementation that these created. At best, he could have based his attempt on trends, in particular the development of mechanization at that time. Today, putting aside the possibility of dramatic events like a catastrophic nuclear war, or unforeseeable fundamental changes in the nature of warfare or the organization of international society, the most one

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Between 1989 and 1994 she coordinated the work leading to the *San Remo Manual on International Law Applicable to Armed Conflicts at Sea* and its commentary and edited these documents. She also coordinated efforts which led to the adoption of Protocol IV banning blinding laser weapons and has been responsible as well for ICRC legal work in favor of a total ban on antipersonnel land mines. In this capacity she represented the ICRC at the United Nations Review Conference of the Convention on Certain Conventional Weapons, and for the Ottawa Treaty. Since 1995, she has been supervising a study on customary norms of international humanitarian law.

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can hope to do is extrapolate from present trends and see how these could affect the implementation of the law in the future. In so doing one may assume that human nature will not change, although the organization of society and of international relations could well do so.

International humanitarian law is implemented on three levels, namely, by the individual undertaking an act during an armed conflict, by the society for which he is acting, and finally by the efforts of the international community. Generally speaking, laws that reflect the values of a society, or at least the interests of those in a position to enforce the law, have a good chance of being implemented.

This article analyzes the main factors that help or hinder the implementation of international humanitarian law—that is, the likelihood that in a particular combat situation its regulations will be observed or its violation punished.[1] It first examines those factors that helped such law develop in customary practices and analyzes whether they continue to be present and what the prospects might be for the future based on present trends. The changes in international society that appear to be taking place and the effect these may have on implementation are then examined. Finally, the article considers certain mechanisms for implementation. In that respect, this author does not assume that we should speak of implementation of the law in the next century as it stands now but assumes that changes and developments will take place in order to reflect developments in technology, methods of warfare, and society. The article therefore considers implementation of the major principles of international humanitarian law that reflect its basic purpose as we understand it today—the limitation of means and methods of warfare, and the protection of persons in the power of hostile authorities, in order to limit the destructiveness and suffering of war.

Factors Historically Aiding Implementation

In past centuries, various circumstances have tended to favor the implementation* of humanitarian law restrictions on the conduct of warfare. First, since rules reflected existing general practice, their implementation was not particularly difficult, as efforts were limited to keeping in line the occasional individual who behaved differently from others in his society. It is noteworthy that prior to the attempts to codify the law in the late nineteenth century, the laws and

* For the purpose of this article, the term "implementation" includes all aspects of respect for international humanitarian law; it is therefore not limited to its narrow legal sense of national legislative measures or of national or international mechanisms used to apply the law. "Practice" is used in the sense of actual behavior on the battlefield, not in that given to it for the purpose of assessing customary international law (which would include statements by states).

customs of war were an articulation of the methods of warfare common to professional armies of that time. Nonprofessional groups were not expected to conform to this law, and they were therefore also not entitled to the privileges that were enjoyed by professional armies, especially prisoner-of-war status. The protection of the civilian population was assured largely by methods of combat rather than any strict rule. The lack of such regulation is evidenced by the fact that civilians did suffer greatly during sieges; they could even be forced back into the besieged city if they tried to escape.[2] On the other hand, by the eighteenth century the practice in the Middle Ages whereby a city's population could be punished for resisting capture was considered dishonorable and uncivilized.[3]

This brings us to the second factor of importance, the belief by combatants of the appropriateness of having certain rules in battle. Concepts of honor not only prevented the sacking of cities after capture but imposed a number of rules relating to the treatment of other combatants. Most important were the prohibitions on the use of poison, treachery, and attacking an enemy combatant once *hors de combat.* These values and the sense of responsibility that they entailed were clearly instilled by the societies in which professional soldiers were brought up and also by the armies themselves. The criminality of violations of the law flowed fairly naturally from this sense of appropriate and inappropriate behavior.

The extent to which reciprocity was important for this ethic is uncertain, for one must be careful not simply to project onto society of that age this concept as perceived today. There is no conclusive evidence that strict reciprocity was required for every action between "civilized" societies, as they saw themselves.[4] However, behavior in relation to "uncivilized" societies was conditioned by an incapacity, as it seems, to apply or appreciate such niceties with respect to those peoples. Evidence of this is to be found in the U.S. Lieber Code of 1863 and in the arguments of the British when they wanted to introduce the use of "dum-dum" (hollow-point) bullets.[5] However, another type of reciprocity did become important with the introduction of new rules in treaties—the international law rule that parties need to be bound by the treaties in question. This was particularly evident in the general participation clause of the Hague Conventions.[6]

A third factor which fostered implementation was ease in application. Inasmuch as law followed practice in the last century, inability to apply it was simply not a problem for professional armies. Any potential difficulty was met by allowing exceptions where considered expedient. The most obvious example of this was the rule that captured soldiers were not to be killed; exceptions were made if keeping them as prisoners of war was impossible.[7]

Fourthly, a lack of hatred for the enemy or of desire for personal vengeance clearly helped prevent atrocities of all kinds. The fact that, in the past, recourse

to war was not illegal or even unusual helped armies view each other as fellow professionals doing their job. The notorious cruelty of recent non-international armed conflicts is at least partly caused by the emotions involved (the other important aspect being the frequent involvement of nonprofessional combatants).

Finally, general mental healthiness among combatants helped prevent atrocities. Although many may argue that only a deranged person would want to go into battle, there can be no doubt that the short battles of the past and the sense of group cohesion in professional armies helped foster respect for the rules. On the other hand, prolonged and excessive stress has a very adverse effect on a soldier's capacity to abide by rules that require abstention from attack when he feels threatened.

The Twentieth Century: Difficulties and Prospects

In the present century, however, unprecedented phenomena and tendencies have arisen that bear upon each of these historical factors. In general, they militate against the observance and enforcement of humanitarian law restrictions on combat. Further, the trends seem adverse with respect to such implementation in the twenty-first century.

Methods of Warfare. The single most important factor in creating problems regarding the implementation of the law in the twentieth century has clearly been the dramatic changes in the technology of warfare. This may well continue to be a problem in the twenty-first century. Whereas war-making methods in the nineteenth century were not dramatically different from those of previous centuries, thus allowing the gradual development of customs which reflected such practice, in the twentieth century sudden and major changes plunged the world into disarray and resulted in the need for extensive changes in the law, by treaty.

From Law Reflecting Practice to Law Preventing Practice. The major motivation for Czar Nicholas II's call for the conferences at the end of the nineteenth century and the beginning of the twentieth was the weaponry development that he perceived was taking place. This was farsighted, for the extreme destructiveness of the new technologies was such that responsible politicians simply could not continue to let law reflect practice, which would have allowed whatever technology was capable of. However, this meant that the law became increasingly dictated by the need to curtail practice rather than reflect it, thereby creating tensions in the implementation of the law in the twentieth century. Successive changes in the law largely prohibited certain new practices (such as the use of chemical weapons and massive bombardments of cities), although those who engaged in such acts were of the opinion that they had military utility—a criterion that long had served as a principal determinant of legality. Other practices

continued to be allowed, despite attempts to outlaw them; they have been responsible for a great deal of destruction and suffering. Examples include submarine attack, aerial and missile bombardment, and mine warfare. These inconsistencies have meant that the moral foundations of the law of war have become quite unclear to both soldiers and civilians.

The law no longer takes the simple approach that all militarily useless cruelty is prohibited, with the rest in principle allowed; the sheer destructive nature of today's technical possibilities has required compromises for the sake of the survival of humanity. However, these compromises do not always appear very consistent to the average person. The fact that certain bullets are prohibited by international law but nuclear weapons have not been clearly and unambiguously prohibited creates scepticism regarding the seriousness of any part of the law of war.

The principle of proportionality in attack (that the foreseeable harm caused to noncombatants be outweighed by the benefit expected to be achieved by the military action itself) is an excellent example of compromise between military and humanitarian needs, but the implementation of this rule is somewhat subjective and unclear, causing a certain degree of doubtfulness among those who hear it for the first time. The problem has been exacerbated by collateral damage that tends to occur after the actual attack—for example, water shortages and other highly negative effects of attacks on the power stations on which modern civilian society depends for survival—an issue that arose from the coalition attack on electrical power stations during the second Gulf war. The practical difficulties civilians face obtaining protection from the effects of hostilities have also created questions about the continued meaningfulness of laws to protect combatants from excessively cruel weapons.[8]

The Need for Practice Again to Reflect Law. The perceived incongruity between practice and law that has developed in this century has created a serious image problem for international humanitarian law. Law has to reflect practice at least to some degree in order to be taken seriously. Yet, for the reasons indicated above, it is not possible simply to allow the use of any given technological possibility. Therefore, what is needed is a means to make practice conform to the law, or at least its basic principles, so that law can again reflect values rather than primarily stopping certain practices. This is particularly important as there is evidence that we are, at the end of the twentieth century, on the brink of a major change in war-making capability that could be at least as important as the major changes that took place early in the twentieth century relative to the nineteenth.

The research taking place in directed-energy weapons could bring a major change in methods of warfare. At present, it is difficult to imagine the full impact of this change. The ability of high-power microwaves and electromagnetic-pulse weapons to incapacitate electronics has enormous potential for the destruction of the life-support systems of technologically developed

societies, which use such electronics for all kinds of purposes. The potential effect of acoustic beams and electromagnetic waves on persons is not yet fully known, nor is the extent to which they could be weaponized for antipersonnel purposes. Antimateriel laser beams are still being worked on, and one should not rule out the possibility of antipersonnel lasers that affect humans in ways different from the blinding laser weapons that have been recently banned.[9] Although the virtually instantaneous effect of these weapons, their invisibility, and their silence are bound to change methods of warfare in a major way, it would require a military analyst with imagination and foresight to indicate precisely how.

Other high-technology developments could be space-based weapons and various types of nuclear weapons. The original "star wars" (Strategic Defense Initiative) antimissile program ran into technical as well as legal difficulties, but it is not beyond possibility that such systems could be developed during the next century to hit targets within the atmosphere; currently it is prohibited only to deploy nuclear weapons in space. With regard to nuclear weapons, the Comprehensive Test Ban Treaty should in theory prevent further development, but there are indications that this is not the case in practice. Abstention in use is largely due to the weapons' radiation effects; therefore, any advances that substantially reduce or even eliminate these effects could tempt some to make use of their enormous blast capabilities.

Mention must be made of a potential new method of warfare that is already prohibited in law but that could have horrific effects if developed—genetic weapons. This specter and other new (if obviously preliminary) developments in biotechnology have already motivated states to begin negotiations on verification methods for a Biological Weapons Convention.[10]

Compared with these potential developments, present work on so-called "nonlethal" weapons seems insubstantial. However, any device that could cause permanent disability would certainly be no more desirable from a humanitarian point of view than more familiar conventional weapons, and it is not even clear that all are reliably nonlethal. Potential effects on the environment should also be considered.

This is not to suggest that there should be a stop to weapons development. Such a proposal would be totally unrealistic, and some new characteristics, such as increased accuracy or ways to render targets *hors de combat* while minimizing damaging effects, can be positive. However, it does mean that if we are to preserve certain notions of humanity, those in a position to direct weapons research and development requirements need to take their responsibilities seriously in this respect. In designing new weapons, the laws of war should be taken into account at the outset to ensure not only that weapons are capable of distinguishing between civilians and combatants but also that antipersonnel weapons cause neither inevitable death nor permanent incapacity.

Another factor of importance is the increasingly fragile environmental state of our planet. This is not something that weapons developers had to think much about in the past, but this factor must be taken seriously in the design of any new weapons, as a matter of the survival of us all. Given that much new weapons research these days is undertaken by companies seeking primarily to sell their products, it is essential that states make developers aware beforehand of which effects are contrary to the rules or principles of international humanitarian law.

Belief in the Appropriateness of the Rules. Conviction that humanitarian rules have a proper place is the single most important factor supporting effective implementation of the law. As already indicated, it has been dealt a severe blow in the twentieth century by the inappropriateness of law that primarily prevents practice rather than reflecting it.

The Crisis of the Twentieth Century. The extensive effects of modern warfare and the practice of conscription have put war outside the province of a few professionals. Also, the fact that war is no longer a lawful means of settling disputes may have contributed to a reduction in the professional respect between soldiers on opposing sides. More seriously, traditional notions of honor effectively died in this century, frequently leaving in their stead a cynicism toward, disbelief of, or plain ignorance about the fact that warfare is meant to have rules. The international community has tried to counter the increased destructiveness and cruelty of warfare in the twentieth century by more extensive and detailed treaty law. However, this law is for the most part not known, or where it is known is not sincerely believed in, and that has led to serious difficulty in getting much of it applied.

Some aspects of the law require interpretation by states—for example, the basic principles prohibiting weapons that are by nature indiscriminate or that cause superfluous injury or unnecessary suffering. A lack of genuine belief in the importance of these rules makes it easy to ignore them; generally speaking, states have not been willing to declare specific weapons illegal on the basis of these rules.[11] Treaty prohibitions and disuse in practice have resulted instead from public opinion.

Other rules are straightforward and detailed, in particular those in the 1949 Geneva Conventions, which require respectful treatment (in certain ways) of persons in the power of an enemy. It would be possible to apply most of these rules without much difficulty if combatants and states genuinely believed in their importance. However, a number of factors have prevented this, including ignorance, indifference, hatred of the enemy, and competing interests. It is clear that if soldiers are to abide by the rules, they must be convinced that their commanders take such rules seriously and that to ignore prescribed behavior will result in disciplinary action. There is evidence of improvement here, as more armies are beginning to teach the law of war seriously. (Particular efforts

have been made by the International Committee of the Red Cross, or ICRC, and the International Institute of Humanitarian Law.) However, the situation is far from perfect, and one gains the impression from speaking with military personnel from around the world that their instruction in the law has been patchy or nonexistent. Respect for the law in future wars will depend to a great degree on whether instruction on the pertinent rules is improved and whether the necessary sanctions are imposed, preferably by the soldier's own country, in case of violations.

The Need to Repress Violations of the Law. The fact that international humanitarian law has not been considered to be of major importance by states is reflected in their failure to prosecute war criminals: more than fifty years after the Geneva Conventions entered into force, most countries have still not carried out their obligation to provide for compulsory universal jurisdiction over grave breaches of those instruments. The present image is one of theoretical lip-service, or at most of double standards by which some are prosecuted and others not. Although there have been some war crimes trials, such as the recent Yugoslav and Rwanda tribunals, these have been the rare exception. The post–World War II Nuremburg and Tokyo trials are still seen by many as "victor's justice." There can be no doubt that the prosecution of such criminal behavior would go a long way toward convincing combatants of the seriousness of the law.

There is a good chance that an international criminal court will come into being in the next century, but whether this improves or diminishes the image of international humanitarian law will depend almost entirely on the court's jurisdiction. The United Nations draft statute contains two provisions that could seriously harm how it is perceived: that the Security Council could prevent the court from hearing a case if the Council is itself dealing with the conflict in question; and that consent is required of the nation holding the accused, the state where the act occurred, and the states of which the victims and accused are nationals—all in addition to ratification of the treaty.[12] These draft provisions would undermine the notions of universal jurisdiction for war crimes and of the rule of law, and they are likely to strengthen the image of double standards. In particular, requiring the consent of the accused's own state would offer war criminals a form of immunity; as the whole purpose of an international criminal court is to assure the prosecution of war criminals if they are not tried by their own courts or extradited for trial, it is essential that the international court have inherent jurisdiction for such crimes. Otherwise, in the next century implementation of the duty to repress war crimes will prove no better than now.

The Influence of Society in General. Both an effective international criminal court and respect for the rules by combatants during conflicts depend on a genuine and clear understanding of the importance of limits in warfare and of respect for adversaries under one's control. Detailed rules will inevitably vary

over time to accommodate changes in society and in methods of warfare, but it is important to preserve the basic values. If these were viewed as important by society in general, soldiers would perceive them as normal when taught them during military training. The most insidious problem is that many people assert that war should know no rules, that the only way to deal with adversaries is to be stronger and more prepared than they are, and that one should be willing to use any means to accomplish one's aims. Rooted in a belief that such means are necessary for personal and national survival, these views are what the new generation seems primarily to be taught through the media and war-play computer games. The same means could instill humanitarian law values, but unfortunately it is obvious that humanitarian law is either unknown or not believed in—or considered completely irrelevant—by those who produce these programs and games. This is a vicious circle that must be rectified somehow. Otherwise, we could face a situation in the next century where, with new weapons even more dangerous than those of this century, the rulers and combatants will be uninterested in upholding the values of international humanitarian law.

International Human Rights Law and Human Rights Organizations. In the second half of the twentieth century the driving factor in keeping alive notions of limits on behavior in wartime has been human rights law. Despite its totally unrelated origin—it was primarily motivated by a desire to render governments accountable for behavior toward their own citizens—the humanitarian, protective purpose of human rights law has influenced the views of certain parts of the international community. The horrors of the Second World War not only produced pressure to make the promotion of human rights a basic purpose of the United Nations (now embodied in Article 1 of its Charter) but also led to the creation of "crimes against humanity" as an international offence and to the 1948 Genocide Convention. Nor is it a coincidence that it was in 1949 that non-international armed conflicts were regulated by treaty for the first time (in common Article 3 of the Geneva Conventions).*

A major step was taken at the 1968 United Nations Human Rights Conference in Teheran, where a resolution titled "Human Rights in Armed Conflict" encouraged states to afford more respect to existing humanitarian conventions and to add further rules to protect "civilians, prisoners and combatants in all armed conflicts." The influence of human rights law can be clearly seen in the wording of the fair trial guarantees in the 1977 Protocol II Additional to the Geneva Conventions.[13]

In some respects, the influence of human rights law was inevitable, for much in the Geneva Conventions that is devoted to protecting individuals overlaps civil rights as well as economic and social ones. However, a major difference is that humanitarian law concerns itself with behavior by *all* parties to a conflict, a

* Articles 1, 2, and 3 are identical in all four Geneva Conventions.

concept particularly important in non-international armed conflicts and for which human rights law is not entirely suited.

Since the 1970s the United Nations has concerned itself with important aspects of international humanitarian law in human rights contexts, in particular in the Human Rights Commission and its Subcommission for the Elimination of Discrimination and the Protection of Minorities. The most dramatic recent example of this trend is the present negotiation of a Protocol Additional to the Convention on the Rights of the Child, which will be solely devoted to preventing the recruitment and participation of children in hostilities.[14]

There can be no doubt that most of the impetus for these developments comes from nongovernmental human rights organizations, which represent important segments of civil society. Resistance or protest from civil society has also had a major effect on limits on weaponry. The nonuse of nuclear weapons since the Second World War is largely due to such civil protest, as was the desire following the Vietnam War to prohibit the use of incendiary weapons—the political sensitivity of weapons like napalm has in practice virtually eliminated their use against personnel. The call for the ban on blinding laser weapons, although originated by the governments of Sweden and Switzerland and primarily pursued by the International Committee of the Red Cross, was boosted by the support it received from various human rights organizations (most notably the Human Rights Watch Arms Project).

A stunning development in this regard is the ban on antipersonnel mines adopted in Oslo in September 1997, agreed to in principle by all states and actively supported by over a hundred.[15] In just five years the initial call in 1992 by six nongovernmental organizations led to a coalition of about a thousand such, collectively known as the International Campaign to Ban Landmines (which in 1997 received the Nobel Peace Prize). Also, the decision by the International Committee of the Red Cross in February 1993 to support such a ban helped the process enormously.[16] The efforts were not entirely civilian; the original founder of this coalition was the Vietnam Veterans of America Foundation, and certain military personnel were also supportive, arguing that the harmful effects of antipersonnel mines outweigh any military utility they may have—a classic humanitarian law approach.[17] However, there can be no doubt that the trend at present is for civil society to push most actively for restraints in methods and means of warfare and for the protection of its victims.

What does this bode for the future? On the one hand, if it continues, this trend means that humanitarian law principles will be fought for by certain members of society; this should save at least some of the law. If this concern filters down to the average person so that potential combatants consider restraint in armed conflict natural, a positive development will have taken place. If on the other hand there continues to be a clash of interests, requiring civil society to make Herculean efforts to regulate one aspect of the law at a time, the

attempt could be overtaken by contrary military or technological developments; in that case the tension between legal principle and military practice will continue into the next century.

Ease in Application of the Law. As already indicated, in the days when law followed practice and warfare largely consisted of hand-to-hand fighting and sieges, there was no particular difficulty in applying the law. However, with the introduction of aerial bombardment and missile warfare, the rules limiting attacks to military objectives and requiring proportionality became more difficult to respect. First, accurate intelligence is necessary to ascertain which objects and persons are military objectives and where exactly they are. Secondly, correct identification of protected persons, vehicles, and buildings will be problematic until more sincere efforts than at present are made to take advantage of technological possibilities. Thirdly, extremely accurate weapons systems are still in the minority. Finally, any assessment of proportionality in attack has so substantial an element of subjectivity (the weighing of military benefit and civilian damage) that it is very difficult to gauge whether the law has been respected.

Faced with these difficulties, commanders and soldiers are likely to make mistakes, and it is not surprising that the number of civilian casualties has dramatically risen since the beginning of this century.[18] A study by two ICRC doctors has shown statistically what has always seemed common sense, that the more bombs and missiles are used as opposed to bullets, the greater the number of civilian casualties compared with military ones.[19] The extreme difficulty in applying Protocol II to the Convention on Certain Conventional Weapons to land mines, particularly as to limitation to military objectives and to marking and recording, led the international community to ban antipersonnel mines altogether as indiscriminate weapons. Fighting from a distance is said to affect adversely the concern of combatants about the nature of the targets, for they will not see the damage that is actually being done;[20] present trends, with increasing computerization, are likely to exacerbate this problem. Unless major efforts are made to improve the accuracy of identification and the precision of weapons generally available, implementation of the law may well become even more difficult.

Another aspect of concern is the complexity of the legal regime itself; the more complex the rules, the less likely it is that they will be followed accurately. This has been seen in the context of the law of naval warfare, where not only has there been no general treaty regulation since 1907, but the rather complex customary rules were extensively violated during the Second World War.[21] Even the Nuremberg Tribunal, in the cases of admirals Karl Dönitz and Erich Raeder, confused the separate notions of rescue after sinking a vessel and removal of personnel before sinking where capture is not possible.[22] For this

reason, during the drafting in 1994 of the *San Remo Manual on International Law Applicable to Armed Conflicts at Sea* this author argued for a simple rule prohibiting the attack and capture of passenger vessels carrying only civilians—rather than allowing capture and even destruction subject to certain rules, as is now permitted.[23]

The desire for simplicity can also be seen in the disappointment of many states with the complex rules for the use of antipersonnel mines in Protocol II Additional, as amended on 3 May 1996, to the Convention on Certain Conventional Weapons. Convinced that this would not really work in practice, they went on to adopt the straightforward ban on antipersonnel mines in Oslo, the ban embodied in the Ottawa Treaty in December 1997.

Attitude toward the Enemy. The prohibition of aggression, the rise in ideological wars, and the increasing intensity of non-international armed conflicts in the twentieth century have all had the effect of introducing additional personal hatred for the enemy. This is not always the case, of course; for example, the lack of such personal hatred aided the implementation of law in the 1982 South Atlantic conflict between the United Kingdom and Argentina.The murder of civilians is particularly acute in non-international armed conflicts. Unfortunately, there appears to be no downturn in this trend, and the problem could well become much worse in the next century, making implementation of the law more difficult, if not impossible in some situations. The present rise in fundamentalism and fanaticism is extremely perturbing in this regard. It is clear that in order to avoid the worst, the international community will need to make a particular effort to resolve certain tensions caused by ethnic rivalries or ideologies. It will also need to be more assiduous in punishing violations of the laws of war, including those in non-international armed conflicts. More serious efforts should also be made to limit the extent of proliferation of weapons, including small arms, to minimize the effects of such wars.

Mental Health of Combatants. The longer the period of tension, the more likely it is that combatants will suffer from combat stress disorder and the greater difficulty they will have maintaining the discipline necessary to respect the rules in threatening circumstances.[24] Suggestions on improving this situation include ensuring that weapon effects do not induce a sense of total helplessness, and giving soldiers leave on a regular basis. The difficulty in accurately identifying hostile objects from a distance is exacerbated by stressful situations, a fact clearly seen in the case of the USS *Vincennes*'s destruction of Iran Air Flight 655 in July 1988. Both the International Civil Aviation Organization report and that undertaken by the United States attribute the mistake to tension on board the *Vincennes* and the conviction among the crew that the ship could be attacked that day. This led a technician so to misread the information on his computer

screen that he believed the opposite of what it was indicating.[25] The mistake occurred in circumstances that did not amount to a full-scale conflict, so one can only assume that in intensive armed conflict such mistakes will be more frequent. Close ranges and a rapid approach of a hostile contact make tension particularly acute.

Unfortunately, the situation is likely to get worse in the future if major developments in directed-energy weapons proceed. This is primarily because the effects of such weapons are virtually instantaneous and can occur over large distances, thus increasing the feeling of inability to defend oneself. Inappropriate preemptive attacks may well result, leading to further attacks on protected or civilian persons or objects.

Changes in the Structure of International Society

The rules prohibiting the use of force by one state against another have had some effect, so that international wars are less frequent than internal ones. Internal armed conflicts may not actually be more numerous today than in the past; rather, we are more aware of what is going on in all parts of the world, and the level of weaponry now available in such conflicts means that they have a more serious effect on the population. The extent of political and commercial intercourse between nations also means that the effects of internal conflicts are far more serious in international relations than they used to be. Moreover, because interstate conflicts are in the minority, unless intrastate warfare is seriously addressed most of international humanitarian law is at risk of being perceived as largely irrelevant to modern realities.

International law is primarily aimed at regulating relations between nations, human rights law notwithstanding. Despite Article 3 common to the Geneva Conventions, and Additional Protocol II, the detailed rules of international humanitarian law have been largely developed for interstate armed conflicts; their easiest legal application is in the case of a classic professional war between two states. However, non-international armed conflicts and actions by various international peacekeeping or peace-enforcement groups are far more numerous than international armed conflicts.

Present trends suggest that this situation is likely to continue into the next century. We are witnessing not only the breakup of a number of nations and increased stress on local government but also an increasing trend toward supranational law, in the form of economic and political international organizations with extensive regulatory powers and increasing influence in international affairs. At the same time, force is increasingly being used by private groups of a financial or criminal nature, with effects that cannot be ignored. The challenge of the next century will be how to deal effectively with these developments. It will require a willingness to venture into legal regulation that does not rely on

classical definitions of "conflict," which at present can determine only whether a conflict is international or non-international.

Non-International Armed Conflicts. In practice, soldiers are not trained in two different ways; most military manuals do not present one set of rules for international armed conflicts and another for non-international ones. It is unfortunate that a number of states remain unwilling even to admit the formal applicability of more detailed rules for non-international armed conflict. Their view is that it would amount to interference in their internal affairs or could be seen as granting international recognition to opposing forces. The negotiation of Additional Protocol II illustrated the widely differing opinions on this important issue. There being no indication that non-international armed conflicts are lessening in number, we are likely to see a continuation of this problem in the next century. In principle, professionally trained soldiers should comply with the same regulations for international and non-international armed conflicts.

Application by Governmental Armed Forces. Government armed forces and other governmental institutions are in law bound by the wording of common Article 3 and Protocol II, where applicable, and relevant human rights law. As indicated above, willingness to regulate internal armed conflicts by treaty arose when international human rights law came into being. However, states that are not keen on human rights law tend also to resist further regulation of internal armed conflicts in international humanitarian law. The difficulties during the negotiation of Protocol II were such that the compromise which produced the definitive text came at the last minute, allowing very little discussion on the final wording. This resulted in an incongruous situation, in that some of the rules in Protocol II are more absolute in their protections than those to be found in Protocol I; reference to the equivalent articles in Protocol I will be necessary for their interpretation in practice.

A study being undertaken by the ICRC on international customary law may further elucidate the rules generally accepted as applicable in non-international armed conflicts. It likely will indicate points of weakness, where the international community could be encouraged to continue work toward greater specificity.

There is one area, however, where application of the rules by governmental armed forces is difficult—the distinction between the civilian population and others. Common Article 3 does not define what is meant by the "armed forces" of the other party, nor is there any definition of who are considered combatants. Civilians are referred to simply as persons who do not take an "active" part in the hostilities: does this mean that all other persons are combatants and can be attacked? What does "active" mean? Is it the same as the term "direct" found in Article 13 of Protocol II? Article 1 of Protocol II is better in this regard, as it

describes the type of dissident armed forces that need to exist for Protocol II to come into effect. One could assume that only persons belonging to such groups are combatants and that all other persons are civilians; however, Article 13, paragraph 3, speaks of the protection of civilians unless they take "a direct part in hostilities." This could be interpreted as meaning that all persons who do not take such a direct part are civilians, but that view could conflict with the concept of "armed forces" referred to in Article 1. It may well be that the reference to "direct" participation is only the equivalent of Article 51, paragraph 3, of Protocol I.

These issues are not academic but rather very practical matters that regularly arise when attempting to assess whether given attacks are lawful or not. It is common in internal armed conflicts that persons who mostly lead normal lives indulge in guerrilla activities from time to time. Can they be attacked at any time and in any place? We also find civilians armed and trained to fight, ostensibly for their own protection but also for the purposes of those who trained them. What is their status? What of children who are asked to deliver messages to guerrilla groups, especially messages that are important for intelligence purposes? A major effort should be made to find answers to these basic questions, so that the lawfulness of acts in non-international armed conflicts can be more readily assessed in the future.

Application by Nongovernmental Forces. As to the behavior of nongovernmental groups, there are both theoretical and practical problems. The application of international law to nongovernmental groups is still perceived by many governments as problematic, despite the existence of common Article 3 and the ratification of the Geneva Conventions by virtually all states. Recent attempts by the government of Colombia to stipulate that the new treaty banning antipersonnel mines applies to nonstate entities ran into difficulties when certain Western governments represented at the Oslo conference could not accept the proposition that such entities might have responsibilities under international law.[26] In the end, Colombia had to content itself with a paragraph in the preamble indicating that the rules of humanitarian law apply to all parties to a conflict, and with a statement at the closing session as to the importance of this point—a statement supported by the ICRC.

Another example of the same problem arose in the context of the negotiations for the Protocol to the Convention on the Rights of the Child. A number of states and the ICRC spoke in favour of a rule that would prohibit all parties to a non-international armed conflict from recruiting children under the age of eighteen years. Several states could not accept this, and the draft now indicates two possible methods of dealing with this issue, neither of which is satisfactory. Draft paragraph 2 states merely that the government is to ensure that children under eighteen are not recruited; draft "New Article A" would require governments to "take all appropriate measures to prevent recruitment of

persons under the age of 18 years by non-governmental armed groups involved in hostilities."[27] These proposals may be doctrinally pure in the minds of strict international lawyers, but they are hardly useful when it comes to the actual behavior of nongovernmental groups.

The application of human rights law concepts to nongovernmental forces is far more problematic than that of humanitarian law concepts. This is because human rights law is primarily conceived of as the obligations of the government towards its own population, not the other way around. (This was why a reference to the duties of nongovernmental groups was not accepted for the draft Protocol to the Convention on the Rights of the Child.) Humanitarian law, on the other hand, is meant to apply to both parties to a conflict; indeed, the very notion of equality of obligations is fundamental to the nature of this law. However, a major problem is that although nations wished these *obligations* to be made clear in common Article 3 and Additional Protocol II, they did not wish the corollary (the same *rights* for rebel forces) to be true.

The most important motivating factor for respect toward humanitarian law is the right to the status of prisoner of war, which means the certainty of not being punished if one has not violated the rules of international humanitarian law. This does not obtain in internal armed conflicts; what then is there to encourage nonstate entities to abide by international law? They can hope to gain respect, perhaps, and there is also the recommendation in Article 6, paragraph 5, of Protocol II that the broadest possible amnesty be granted at the end of hostilities. It is assumed, although not specifically indicated, that such amnesty should not apply to those who have violated humanitarian law, at least in any serious way; however, this does not seem to be very persuasive, and another motivation will need to be found for abiding by the rules of international law.

In this regard, one could consider both a carrot and a stick. The carrot could be, for example, allowing respect of international law to be used in mitigation of sentence for trials in national courts. The stick could be more rigor in trying violators of the law before international tribunals, such as that created for Rwanda, the statute of which specifically lists crimes that are violations of international humanitarian law applicable in non-international armed conflicts.[28] For this reason, we may hope that the new Statute of the International Criminal Court will include such crimes.

Since many persons using force in non-international armed conflicts have not been members of an official state army, it is not surprising that they are quite unaware of even the existence of rules applicable to such situations, let alone their content. The ICRC tries to teach some of these rules to such forces and has had some success, but its approach has certainly not always worked.[29] The only way to give such forces some idea of these rules is to make the civilian population as a whole aware of them. This is certainly not the case at present, and most governments have made no particular effort to remedy this situation. In light of

the increasingly destructive and destabilizing nature of non-international armed conflicts, a determined and serious effort in this regard must be made in the next century. However, it should be realized that knowledge of such rules does not mean that they will be perfectly respected, even if supported by nongovernmental groups. As indicated above, some of the rules relating to the conduct of hostilities are quite sophisticated. Therefore, the goal must be to reduce the incidence of direct attacks on civilians, torture, and other acts from which forces could abstain if so inclined.

The Problem of Weapons Availability. The final element of particular importance in relation to such conflicts is the ready availability of weapons. The end of the Cold War and relaxation in regulations relating to arms transfers led to significantly increased availability. The ICRC has been asked by the twenty-sixth International Conference of the Red Cross and Red Crescent to submit a report as to whether there is a direct link between this availability and violations of the law. One suspects that there is an analogy to the connection between smoking and cancer: proof is difficult but common sense dictates that it must be so. The more persons without instruction or special training use force and have firearms, the more violations there are likely to be. This situation will get worse in the next century unless the international community finds the political will to stem such arms flows. That will require not only clear guidelines for transfers but also a means to verify their implementation.

The Use of Armed Force by Private Persons or Groups. The armed forces of private entities can take the form of mercenaries (a phenomenon that, though not new, has caused particular problems at the end of this century), security companies (hired by private industry), or criminal groups with extensive organizational and warmaking ability.

The use of mercenaries is an ancient practice that shows no indication of ceasing. In the past, mercenaries simply had the same status, and were entitled to the same treatment, as the group for which they were fighting, which in turn depended on whether the conflict was international or non-international. However, since 1977 a significant segment of the international community has tried to eliminate this practice by, among other things, refusing such persons prisoner-of-war status.[30] So long as mercenaries continue to exist, the problem of how to motivate them to abide by the rules of international humanitarian law will remain. In this regard, the carrot-and-stick approach suggested for nongovernmental groups in non-international armed conflicts could prove useful.

A relatively new phenomenon is private security companies who offer their services to governments or private industries, particularly in unstable areas where the government's police force cannot provide adequate protection. The best-known example is Executive Outcome, a security company that operates extensively in Africa; a number of others are active in a variety of contexts.[31]

Although such companies are frequently referred to as "mercenaries" in the media, they do not fall within the traditional understanding of the term, nor do they easily fit the legal definition found in Article 47 of Additional Protocol I. However, they do use military methods and consist primarily of ex-soldiers.

Whether security companies are bound by any international rules is a major issue. When used by governments in the context of an internal armed conflict, it is arguable that they form part of the government's forces and thus are bound by the rules of non-international armed conflict. However, they are not officially part of the government's army. Moreover, the concept of mercenaries in Article 47 of Protocol I applies only in international armed conflicts. Multinational or other industries who use such companies ought to be accountable in some way for their behavior; yet these clients are neither states nor parties to an internal armed conflict in any traditional sense of the word. The security companies concerned are in principle bound by the law of the state in which they function; in reality, this will not have much effect if they actually engage in hostilities, which press reports say they have done in some instances. Given the increasing influence of private industry and the growing importance of multinational companies, the international community is going to have to face this issue and decide whether the use of force by such companies against armed groups should be subject to international rules. If so, a departure will have to be made from the traditional application of international humanitarian law to governments and armed rebel groups.

Criminal groups engaging in armed conflict include the Mafia and various "drug lords," whose activities are extensive not only internally but internationally. On the one hand, it seems abhorrent to suggest that they should be bound by international humanitarian law; on the other, it is difficult in law to justify any distinction, inasmuch as even traditional rebel groups in non-international armed conflicts are considered common criminals by the authorities they oppose. The term "armed groups" in common Article 3 is perhaps general enough to cover criminal groups, but one generally assumes that humanitarian law has in mind groups fighting for a political purpose. This assumption derives from the historical context of the development of the law, though it is written nowhere. An added complication is that some rebel groups, including a number in Colombia, ostensibly have some political purpose (albeit often obscure), though they use straightforwardly criminal methods and drug money. The lack of clarity as to whether international law is applicable in these situations makes its implementation very difficult.

Even if one assumes that a group should possess some political purpose if humanitarian law is to be applicable, there remains the problem of determining the facts. Doing so can be extremely difficult in unstable, internal-conflict situations. A tragic example of this was the murder of six ICRC employees on 17 December 1996 in Novye-Atagy, Chechnya. Although an official enquiry has

opened, we are at this writing no nearer to establishing who was responsible, or even whether the attack clearly amounted to a violation of international humanitarian law, given that the various groups active in that highly volatile situation included both criminal and armed political groups.[32]

Unfortunately, there is every indication that this type of unstable situation is likely to continue or even worsen in the next century. It becomes even more acute when state structures have broken down. At the moment, international law does not really have an answer. In particular, international humanitarian law, which is supposed to regulate the use of force, does not in its present form provide concrete and practical answers as to how the law can be applied to and implemented in such situations.

Use of Force by Multinational and Supranational Entities. The use of force by the United Nations was foreseen in Chapter VII of the Charter, which also assumed that the troops would be UN forces as such. However, only fairly recently has the question of whether the United Nations is itself bound by international humanitarian law been addressed in any serious way. The issue is not limited to the UN; multilateral forces acting under the umbrella of a regional security organization such as Nato or as ad hoc coalitions also face a quandary as to which law applies to them. This issue is at present largely considered from the perspective of compatibility. The increasing financial and political interdependence of nations is also leading to a situation where supranational actors could be increasingly active in armed conflict issues, the most obvious example being the new European Union's Treaty of Amsterdam. This trend means that international humanitarian law can no longer be limited to the behavior of individual nations; otherwise, the defense policies of such organizations and their uses of force will not be formally bound by any hard humanitarian law.

The issue of which law binds United Nations forces is not a purely academic one—there have been allegations, particularly in the case of operations in Somalia, that UN forces have murdered noncombatants or detained them without allowing contact with lawyers or families.[33] Through participation agreements, personnel contributed by states fall formally under the command of the UN Secretary-General; further, the United Nations is an international person in international law. Therefore, although one could argue that each contingent is still bound by the humanitarian law that binds its flag state, this conclusion is not at all satisfactory from either a legal or a practical point of view. The area of practice is actually rather confused: the UN commander is in theory responsible, but heads of national contingents retain a certain control. The name given to a mission should be irrelevant; the question of applicability of humanitarian law should arise when hostilities actually occur, whether the contingent was meant to be a peacekeeping force in the traditional sense or had a more active role.[34]

The difficulty at present is that apart from cases of clear enforcement action, UN forces are not to be seen as belligerents. Humanitarian law applies to "parties to a conflict"; the normal role of peacekeeping forces does not easily fit this description. The fact that the United Nations is not a party to humanitarian law treaties compounds the problem. In past operations, agreements indicated that such forces were bound by the principles of humanitarian law but not by specific rules.[35] The current UN model agreement provides that such forces are to "observe and respect the principles and spirit of the general international conventions applicable to the conduct of military personnel."[36] The ICRC has tried through meetings of experts (governmental, academic, and UN personnel, all acting in their personal capacities) to establish which rules are applicable to such forces, both when they intervene in non-international situations and during international armed conflicts. Given the difficulty (which this author believes is insuperable, because the law simply does not envision the situation) of finding an answer, the experts concerned drafted a document entitled "Guidelines for UN Forces Regarding Respect for International Humanitarian Law." The fate of this work is not clear, as these guidelines have not been officially adopted. However, personnel at the UN Secretariat are aware that it is an issue that needs resolving.

It is highly likely that such forces will continue to be used in the next century, and it is simply not acceptable to allow it to remain unclear which international legal rules govern UN forces. The international community needs to accept and address the fact that the traditional scope of humanitarian law treaties prevents the proper implementation of suitable rules for UN forces.

Additionally, multinational forces can be specifically authorized by the United Nations, either for an enforcement action, as with the coalition effort against Iraq in 1991, or to conduct a humanitarian mission, such as in Albania in 1997. In principle humanitarian law applies to such forces, by virtue of the international law obligations undertaken by each state. However, with that official authorization, the question arises as to whether such forces should as groups make themselves subject to specific rules of humanitarian law. Not all nations will be parties to the same treaties, and therefore problems of interoperability arise. This is true for forces of a regional organization such as Nato, or ad hoc forces like the multinational forces in Beirut in 1982–1984 or Liberia in 1990.[37] Because it is likely that multinational forces will be used in the next century, proper implementation of humanitarian law requires greater clarity as to the rules under which they will operate and how those rules will be carried out in practice.

Although purist international lawyers argue that there is no such thing as "supranational" law, the fact remains that there are arrangements whereby states have given non-national organs powers that go well beyond the usual functions of international organizations. The most obvious example is the European

Union. The Treaty of Amsterdam, adopted in 1997, contains provisions in Title V on a "common foreign and security policy." Article J.3 states, "The European Council shall define the principles of and general guidelines for the common foreign and security policy, including for matters with defence implications." More specifically, Article J.7 provides that

> the common foreign and security policy shall include all questions relating to the security of the Union, including the progressive framing of a common defence policy . . . which might lead to a common defence, should the European Council so decide. It shall in that case recommend to the Member States the adoption of such a decision in accordance with their constitutional requirements.
>
> The Western European Union (WEU) is an integral part of the development of the Union providing the Union with access to an operational capability. . . . It supports the Union in framing the defence aspects of the common foreign and security policy as set out in this Article. The Union shall accordingly foster closer institutional relations with the WEU with a view to the possibility of the integration of the WEU into the Union, should the European Council so decide. . . .
>
> The progressive framing of a common defence policy will be supported, as Member States consider appropriate, by co-operation between them in the field of armaments.
>
> Questions referred to in this Article shall include humanitarian and rescue tasks, peacekeeping tasks and tasks of combat forces in crisis management, including peacekeeping.
>
> The Union will avail itself of the WEU to elaborate and implement decisions and actions of the Union which have defence implications.

Although the provision does not mean that the European Union will have its own army, it comes close. More importantly, the Union is to have its own policies relating to armed conflict situations, whether for its own defense or in relation to other armed conflicts. The European Union as such is not a party to humanitarian law treaties, but the question arises of whether it is bound by them. Does customary law bind it? These are fundamental questions for the implementation of humanitarian law.

The ICRC attempted to persuade members of the European Union to include references to international humanitarian law in the sections of the treaty dealing with foreign and security policy. Other parts of the treaty make reference to the importance of respecting human rights law; a mention of humanitarian law in the relevant sections would have been appropriate. These efforts were unsuccessful, an extremely unfortunate outcome in this author's opinion. States cannot continue simply to assume that the present scope of application of humanitarian law treaties suffices. What if the European Union uses the WEU in an internal armed conflict in a way that involves fighting? Does all law apply, or only that law applicable to internal armed conflicts? What of the duty of nations in common Article 1 of the Geneva Conventions to respect them and

ensure their respect? Does the obligation also apply to policies of the European Union as such? Which body will implement whatever is supposed to be the applicable law? the European Court of Justice? even though there is no mention of humanitarian law in any of the European Union treaties? Do the general references to human rights in the Maastricht and Amsterdam treaties suffice? Such issues will have to be faced in the future, although it would be better to do so before becoming involved in a difficult situation.

Implementation Mechanisms

It may seem strange in an article about implementation to refer to implementation mechanisms only rather briefly, in closing. However, the preceding issues are more fundamental to the problems of implementation than are procedures. Mechanisms will only be efficient if the will exists to make them so, and that depends on the factors outlined above. Therefore, this section does not explore existing and potential implementation mechanisms in detail;[38] rather, it looks at factors relevant for such mechanisms in the future.

National Mechanisms. Obviously, if the implementation mechanisms already foreseen for the national level had been carried out, we would be in a much better situation than we are now. In the face of the enormous challenge of rectifying the present situation, the ICRC's new Advisory Service has had to set priorities. It has therefore decided to try to create a snowball effect by encouraging the creation of national commissions responsible for national implementation of humanitarian law.[39] It is also making particular efforts to induce states to comply with their duty under the Geneva Conventions to provide for universal jurisdiction for grave breaches. In this regard there can be no doubt that if nations could arrange for the direct applicability of the treaty provisions, a great deal would be gained. This could perhaps ultimately make national courts able not only to try war criminals more effectively but also to award reparation to victims of violations. At present, the latter possibility is being explored by the Human Rights Commission, and individuals are bringing cases before national courts asking for reparations for violations committed during the Second World War.[40] Success would almost certainly motivate governmental and nongovernmental bodies to abide by their obligations with greater care.

Some imagination and determination will also be needed to make sure that the civilian population as a whole is aware, at least at the most basic level, of certain rules of armed conflict. In formal teaching, the topic could be introduced into a number of traditional school courses, probably together with some notions of human rights. However, other methods will also be necessary. In particular, efforts should be made to curtail teaching that encourages violations

of the law. For example, behaviors that should not be exhibited in computer games could be made known to game creators, along with desirable actions (for instance, instead of shooting a surrendering soldier, the game figure could indicate that the captive will not be harmed). It has already been suggested that industries developing new weapons should respect certain international rules. They have at least one strong motivation for taking the rules seriously—the money they would waste should they develop a weapon that is then formally prohibited.

International Mechanisms. Reference has already been made to the importance of an effective international criminal court, and to the conditions necessary for one. Provision for commissions of inquiry already exists;[41] some investigation has occurred on an ad hoc basis, such as into violations of the law in the former Yugoslavia and Rwanda. Assessing violations of methods of warfare will remain particularly difficult, because factors relating to the assessment of military objectives and proportionality have an important subjective element. However, such inquiry remains a useful mechanism, and we may hope that it will be used more in the future.

It remains to be seen whether other mechanisms could be introduced that would encourage better implementation of humanitarian law in future wars. A system has been suggested by which states could report the measures they have taken to implement humanitarian law.[42] Similar mechanisms are being used in other contexts, with mixed results (determined by a number of factors). In the context of humanitarian law, such a system would have more likelihood of acceptance and success once states have taken more effective national measures, which will presumably be the fruit of the Advisory Service's efforts and of the fuller understanding being gained about the importance of this aspect of law.

One area that should certainly be improved is the evaluation, at the research stage, of the likely lawfulness of weapons.[43] At present, evaluations are made either at the national level or at the international level, if a particular weapon is called into question. In the latter case, assessments are hampered by the classification of information. The case of blinding laser weapons was somewhat special, because there had been extensive use of lasers by ophthalmologists for eye surgery and by the military for lawful purposes; this enabled experts to extrapolate the likely features and effects of the proposed weapons. In most cases, however, a weapon has to appear on the battlefield and even be generally available before an evaluation can occur. Obviously, there will be resistance to legal evaluation at this stage, given the investment that will already have gone into its development. Over the last hundred years, no head of state has shown the altruism that the czar of Russia did when he convened an international conference to ban a weapon developed by his own scientists.[44]

This issue is highly sensitive, but given the crisis in the implementation of humanitarian law created by the totally new weapons of the twentieth century, and also the need for practice to be in conformity with law rather than in constant tension with it, evaluation of the foreseeable effects of contemplated new weapons is the only way to implement this area of law effectively. Such an evaluation cannot be left to a totally national mechanism but must include unbiased and neutral persons. The rapid pace of technological and biotechnological developments will make this crucial for the twenty-first century. This process would be helped by more objective data and criteria for evaluating whether weapons present problems in relation to the rules prohibiting inherent indiscriminateness, superfluous injury, or unnecessary suffering. A way must also be found to protect sensitive material; if the political will were present, it would be possible to find one. Such a mechanism could also study the likely effects on the environment of weapons and methods of warfare.[45] The relative novelty of this problem makes it difficult to foresee the extent and permanence of environmental damage. However, all the elements of future disaster are looming: the degree of present environmental degradation, ever-increasing population, and forecasts of water shortages. These factors are likely to cause wars in the next century, and the problem will be exacerbated if warfare itself causes further environmental damage.

In addition, the possibility of nuclear war remains. Despite all efforts to stem proliferation, a state or group may decide to use these weapons without fearing or caring about retaliation. All existing mechanisms to prevent such an occurrence need to continue; in addition, now that the Cold War has ended, more serious attention should be given to the Advisory Opinion of the International Court of Justice that there is an obligation to achieve "nuclear disarmament in all its aspects under strict and effective international control" through bona fide negotiation.[46]

We have noted the need to find better means to implement humanitarian law in non-interstate conflicts. Specific mechanisms should also be considered by international and "supranational" bodies for reparations to victims of violations and for punishment of offenders. The implementation of the law in non-international armed conflicts and in so-called "internationalized" ones would benefit from an independent and impartial assessment as to whether particular uses of force or outbreaks of violence qualify as "armed conflict," subject to law. The ICRC frequently does not do this publicly, because of possible implications for its field work. The ideal situation, of course, would be for an independent court to undertake this task, but it could also be given to an independent commission. The experience with human rights law shows that individual petition is particularly successful in ensuring that issues are addressed. In this way, cases relating to situations which may qualify as armed conflicts have been brought under the European Convention on Human Rights, but the

Commission or Court does not have to make such a qualification, as it is unnecessary for the application of human rights law.

Finally, it is worth addressing the particular role of civil society, in particular nongovernmental organizations. Until now the implementation of humanitarian law has been largely left to governments. The only official nongovernmental role has been that given to the ICRC, in particular through its visits to prisoners of war and civilian internees and its Central Tracing Agency in international armed conflicts. Various parts of the Conventions also make reference to national Red Cross or Red Crescent societies. The recognized role of the ICRC in fostering the development of humanitarian law gives it observer status at diplomatic conferences relating to international humanitarian law. In this context it is regularly requested to prepare documentation and allowed to make statements and proposals.

Until now, no other organizations have had any such formal role. Therefore it was a significant development when the Norwegian government decided to accord the International Campaign to Ban Landmines the same observer status as the ICRC during the diplomatic conference that led to the adoption of the antipersonnel mine treaty in September 1997. The organization's contribution is specifically mentioned in the preamble to the treaty, which makes a point of "*stressing* the role of public conscience in furthering the principles of humanity as evidenced by the call for a total ban of antipersonnel mines and recognising the efforts to that end undertaken by the International Red Cross and Red Crescent Movement, the International Campaign to Ban Landmines and numerous other non-governmental organisations around the world."[47] Thus the "Ottawa process," which culminated in signature by many states of the treaty banning antipersonnel mines in Ottawa in December 1997, specifically recognized the importance of civil society monitoring the implementation of humanitarian law and involving itself in its development where appropriate. Nations that did not participate in this process cannot be said to approve this practice, and therefore one cannot say that it is universally accepted. However, it does reflect the already existing practice of human rights bodies giving a recognized role to nongovernmental organizations (for example, with active observer status at the UN Human Rights Commission). The next century may well see, therefore, an important development in this direction for humanitarian law.

* * *

The twenty-first century could easily witness a catastrophic lack of humanitarian law implementation, arising in part from a view that much of it is irrelevant because the vast majority of conflicts are not classic interstate ones.

Dangerous new means and methods of warfare, ideological conflicts, and further rampant arms proliferation, all taking place in the context of an increasingly disturbing environmental situation, could easily spell disaster. Political will could prevent such a scenario, but to do so requires a willingness to depart from the usual way of thinking. Efforts should be made to establish how the law can be applied to nontraditional situations, and to put effective mechanisms in place. Whether this *will* be done depends on how important the regulation of armed conflict is considered to be when balanced against competing interests. It also depends on whether one is willing to be farsighted about our long-term interest in preserving the values of humanitarian law—an application of enlightened self-interest.

A realist will not expect this to happen by itself. However, certain tendencies do give hope. Humanitarian law is more talked of these days than it was even a few years ago, and some mechanisms are beginning to work—albeit for the time being in an uneven fashion. The further involvement of civil society has been important for this development, and there is no obvious reason why it should weaken in the future. Therefore, it may well be that the implementation of humanitarian law, whatever its exact content needs to be in the next century, will improve. One can try to be an optimist!

Notes

1. *International humanitarian law* and *international human rights law* (or simply "human rights") are "complementary. Both seek to protect the individual, though they do so in different circumstances and in different ways. Humanitarian law applies in situations of armed conflict, . . . whereas human rights, or at least some of them, protect the individual at all times, in war and peace alike. While the purpose of humanitarian law is to protect victims by endeavouring to limit the suffering caused by war, human rights seek to protect the individual and further his development. Humanitarian law is primarily concerned with the treatment of persons who have fallen into the hand of the adverse party, and with the manner in which hostilities are conducted, whereas by limiting the power of the State over individuals, human rights essentially seek to prevent arbitrary behaviour. It is not the aim of human rights to regulate the ways in which military operations are conducted." *International Humanitarian Law: Answers to Your Questions* (Geneva: International Committee of the Red Cross [hereafter ICRC], 1998), p. 41.

2. L. Oppenheim, *International Law: Disputes, War and Neutrality,* vol. 2, 7th ed. (by H. Lauterpacht) (London: Longmans, Green, 1952), para. 157.

3. See James Molony Spaight, *Air Power and War Rights,* 2nd ed. (London: Longmans, Green, 1933), p. 240.

4. For example, the rule requiring the giving of quarter to those who surrendered or were *hors de combat* was probably respected by a soldier who took his reputation and honor seriously whether the opposing side fully respected the rule or not.

5. General Orders No. 100, Instructions for the Government of Armies of the United States in the Field, 24 April 1863 [hereafter Lieber Code], art. 23, reprinted in *The Laws of Armed Conflict,* 3d ed., D. Schindler and J. Toman (Dordrecht: M. Nijhoff; Geneva: Henry Dunant Institute, 1988), p. 3. The British delegate to the 1899 Hague Conference argued that "savages" did not stop when shot, as "civilized" soldiers did.

6. Convention Respecting the Laws and Customs of War on Land, 13 October 1907 [hereafter Hague IV], art. 2, (36 Stat. 2277, 205 Consol. T.S. 277), reprinted in Schindler and Toman, eds., p. 63.

7. Lieber Code, art. 60.

8. The difficulty in getting blinding laser weapons prohibited was outlined by this author in "Obstacles to Regulating New Weaponry: Battlefield Laser Weapons," in *Armed Conflict and the New Law: Effecting*

Compliance, ed. H. Fox and M. A. Meyer (London: British Institute of International and Comparative Law, 1993), p. 107.

9. Protocol IV on Blinding Laser Weapons, 13 October 1995 (35 I.L.M. 1218 [1996]), annexed to the Convention on the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessively Injurious Or to Have Indiscriminate Effects, 10 October 1980 [hereafter Conventional Weapons Convention] (19 I.L.M. 1524 [1980]). The Protocol is reprinted in Louise Doswald-Beck, "New Protocol on Blinding Laser Weapons," *International Review of the Red Cross,* no. 312, 1996, at annex.

10. A series of articles on the Biological Weapons Convention and present negotiations for strengthening its implementation appear in *International Review of the Red Cross,* no. 318, 1997, pp. 251–307.

11. The International Court of Justice in its advisory opinion on nuclear weapons confirmed that these rules mean that certain weapons are illegal whether a specific treaty prohibits them or not. *Legality of the Threat Or Use of Nuclear Weapons* [hereafter *Nuclear Weapons*], General List No. 95 (Advisory Opinion of the International Court of Justice, 8 July 1996), paras. 78–9 (35 I.L.M. 809 [1996]). For background on the opinion, see Michael N. Schmitt, "The International Court of Justice and the Use of Nuclear Weapons," *Naval War College Review,* Spring 1998, pp. 91–116.

12. Draft as it appeared at the August 1997 working session of the preparatory committee; UN Doc. A/AC.249/1997/WG.3/CRP.1/Rev. 1, draft art. 23, para. 3, and draft art. 21, para. 1.

13. Ironically, humanitarian law could have usefully influenced human rights law at that time. The European Convention of Human Rights and the United Nations Covenants failed to make nonderogable judicial guarantees as there are in the Geneva Conventions; practice has since shown that this was a mistake. The ICRC was not then as careful as it is now to ensure that human rights treaties give at least as much protection as humanitarian law ones.

14. Report of the Working Group on a Draft Optional Protocol to the Convention on the Rights of the Child on Involvement of Children in Armed Conflicts [hereafter Report of the Working Group], UN Doc. No. E/CN.4/1997/96.

15. Convention on the Use, Stockpiling, Production and Transfer of Anti-Personnel Mines and on Their Destruction, 18 September 1997 [hereafter Mine Convention] (36 I.L.M. 1607 [1997]), and Draft UN General Assembly 1st Committee Resolution A/C.1/52/L.1, 22 October 1997, inviting all states to sign and then ratify this convention. For agreement in principle, General Assembly Resolution 51/45S, 10 December 1996.

16. The ICRC was particularly active in this regard, with the considerable help of other components of the Red Cross and Red Crescent Movement. It made more use of the media in this effort than for any other issue.

17. See, for example, the conclusions of the ICRC-mandated military study "Anti-Personnel Landmines: Friend or Foe" (1996) and the open letter to the same effect signed by fifteen retired United States generals (including Norman Schwarzkopf) to President William Clinton in April 1996.

18. The attacks on the Ameriyya air raid shelter by U.S. forces during the second Gulf war and on the Qana UN compound by Israeli forces are commonly attributed to mistakes.

19. Coupland and Samnegaard, "Development and Transfer of Conventional Weapons: The Implications for Civilian Casualties," unpublished manuscript (on file with the author).

20. Dave Grossman, *On Killing: The Psychological Cost of Learning to Kill in War and Society* (Boston: Little, Brown, 1995).

21. The London Declaration of 1909 did not come into force, and the London Procès-Verbal of 1936 only dealt, and rather imperfectly, with one aspect of submarine warfare.

22. Judgment of the International Military Tribunal for the Trial of German War Criminals (London CMD 6946, 1946), p. 109.

23. Louise Doswald-Beck, ed., *San Remo Manual on International Law Applicable to Armed Conflicts at Sea* (with explanation) (Cambridge: Cambridge University Press, 1995). See esp. paras. 136–40 and pp. 206–10.

24. A general analysis of combat stress disorder and its effects was made in the context of the Second Group of Experts, convened by the ICRC in November 1990 as one of four meetings of experts relating to battlefield laser weapons. See Louise Doswald-Beck, ed., *Blinding Weapons: Reports of the Meetings of Experts Convened by the International Committee of the Red Cross on Battlefield Laser Weapons* (Geneva: International Committee of the Red Cross, 1995), in particular the report by Dr. A. Shalev, "Emotional Health Problems Arising from Battle Situations and Injuries Suffered in Battle," pp. 272-6. In addition, a thorough analysis of stress factors on soldiers and measures to be taken to reduce excessive and debilitating combat stress has been made by a military officer: Elmar Dinter, *Hero Or Coward: Pressures Facing the Soldier in Battle* (London and Totowa, N.J.: Frank Cass, 1985).

25. ICAO Doc. C-2 P/8708; and report dated 28 July 1988 from RAdm. William M. Fogarty, USN, to Commander in Chief, U.S. Central Command, endorsed 5 August 1988 by USCINCCENT and on 18 August 1988 by the Chairman of the Joint Chiefs of Staff, pp. E-59–60, E-62.

26. Colombian proposal of 3 September 1997, Doc. APL/CW.46. Another complication was that the conference wanted no language that could give the impression that the scope of application was other than in all circumstances.

27. Report of the Working Group, annex.

28. Statute for the International Tribunal for Rwanda (35 I.L.M. 1598 [1996]).

29. For example, Afghan rebels were persuaded not to kill enemy soldiers when captured, and quite a major change in the behavior of rebel forces in El Salvador was also achieved. See, for example, R. Hammer, *Developing a Humanitarian Awareness: A Case-Study of El Salvador in the 1980's* (Geneva: Henry Dunant Institute, 1987). However, it does not always work. For example, a rebel group in Colombia specifically declined to apply common Article 3, because it wished to continue to take hostages.

30. In particular, in art. 47 of Additional Protocol I, Protocol Additional to the Geneva Conventions Relating to the Protection of Victims of International Armed Conflicts, 8 June 1977, UN Doc. A/32/144 (16 I.L.M. 1391).

31. See, for example, "Broker of War and Death," *Mail and Guardian,* 28 February–16 March 1997, p. 12. Executive Outcome states that it works only for recognized governments.

32. During a statement on 18 December 1996 to the Permanent Missions of States in Geneva, the President of the ICRC alluded to this difficulty. He questioned whether one could speak directly of violations of international humanitarian law or one had rather to speak more generally of "values" of the international community. He specifically mentioned the need to find a way to assure in practice respect toward medical personnel, hospitals, and the Red Cross protective emblem. Statement in the compilation of public statements of the ICRC relating to its activities in Chechnya and the northern Caucasus, July 1993–10 January 1997, LG 1997/013.

33. See, among others, Brian D. Tittemore, "Belligerents in Blue Helmets: Applying International Humanitarian Law to United Nations Peace Operations," *Stanford Journal of International Law,* vol. 33, no. 61, 1997, pp. 89–90. See also Canadian Govt., *Dishonoured Legacy: The Lessons of the Somalia Affair* (Ottawa: Minister of Public Works and Government Services, 1998).

34. Peacekeeping forces were first involved in combat in the Congo, but since then problems have occurred elsewhere, particularly when their mandate and instructions were not entirely clear. At present there are fifteen UN peacekeeping operations active around the world (a figure which can be updated at http://www.un.org/Depts/DPKO/c_miss.htm).

35. Tittemore, pp. 87–9.

36. Comprehensive Review of the Whole Question of Peacekeeping Operations in All Their Aspects, Model Agreement between the United Nations and Member States Contributing Personnel and Equipment to United Nations Operations, Report of the Secretary-General, para. 28, UN Doc. A/46/185 (1991).

37. The issue of how to use an organization's own peacekeeping forces has also arisen in the context of the Organization for Security and Cooperation in Europe. Its forces have not yet been used, although there was a long negotiation in 1993–1994 about their possible employment in Nagorno-Karabakh (an Armenian-populated region of Azerbaijan). The precise nature of such forces has not yet been established, and accordingly they could face the same kind of difficulty as those of the United Nations; for how such operations could work, see V.-G. Ghebali, *L'OSCE dans l'Europe post-communiste, 1990–1996* (Brussels: Bruylant, 1996), pp. 243–5. The Beirut force consisted of U.S., British, French, and Italian contingents; see R. W. Nelson, "Multinational Peacekeeping in the Middle East and the United Nations Model," *International Affairs,* 1984/5, pp. 67, 71–80. The ECOWAS Monitoring Group in Liberia was set up by a summit of African states in Banjul, The Gambia; see J. M. Balencie and A. de la Grange, *Mondes rebelles: Acteur, conflits et violences politiques,* vol. 1, *Ameriques, Afrique* (Paris: Michalon, 1996), p. 284.

38. For a more extensive look at implementation mechanisms, see A. Roberts, "The Laws of War: Problems of Implementation in Contemporary Conflicts," *Duke Journal of Comparative and International Law,* vol. 6, no. 11, 1995, p. 11.

39. A report of meeting of experts on this issue was published as Ch. Pellandini, ed., *Committees Or Other National Bodies for International Humanitarian Law* (Geneva: ICRC, 1997).

40. For example, cases heard by the Tokyo district court relating to ill treatment of Dutch prisoners of war and the abuse of so-called "comfort women." Professor Frits Kalshoven was asked to render his opinion as an expert witness as to whether victims were entitled to reparations by Article 3 of Hague Convention IV of 1907; his opinion was in the affirmative.

41. In particular, the International Fact-Finding Commission, established under Article 90 of Additional Protocol I, but which has not yet been used.

42. The proposal was made by the Netherlands and endorsed by several states, but it did not command sufficient support to be included in the meeting of the Intergovernmental Group of Experts for the Protection of War Victims in January 1995.

43. Article 36 of Protocol I obliges states to make such an evaluation, but this provision is only an articulation of what they are bound to do as part of bona fide implementation of humanitarian law.

44. Bullets that explode on contact with the human body, thereafter banned by the St. Petersburg Declaration of 1868. The 1947 Baruch Plan to place nuclear weapons under international control never progressed beyond the proposal stage.

45. As a result of expert meetings, the ICRC drafted "Guidelines for Military Manuals and Instructions on the Protection of the Environment in Times of Armed Conflicts," 1994, pursuant to General Assembly Resolution A/RES/48/30, 9 December 1993. However, these guidelines merely indicated the present content of humanitarian law protecting the environment; the problem of how to make the scientific evaluation remains. Also worth noting is the Advisory Opinion of the International Court of Justice, which indicated the general requirements of states in this regard under customary law; see *Nuclear Weapons,* paras. 29–30.

46. *Nuclear Weapons,* para. 105 F.

47. Mine Convention, 8th preambular para.

Ψ

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Cooperative Maritime Security in Northeast Asia

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THE GEOSTRATEGIC maritime environment in Northeast Asia is changing. The Cold War order—marked by the possession of nuclear weapons, aggressive warfighting strategies, and the naval confrontation between the Soviet Union and the United States—has been replaced by an indistinct arrangement reflecting the fluid state of international relations. As the two military superpowers have reduced their military presence in response to changes in international politics and growing economic constraints, so their political leverage over the region has diminished.

Step by step with the reduction in the American and Russian naval presence in Northeast Asia since the end of the Cold War has come an effort by regional navies to enhance their forces' capabilities. China and Japan continue to expand their already significant naval power, while South Korea and Taiwan are starting to acquire more powerful forces. Maritime security issues are becoming a particular concern of Northeast Asian countries. They tend now to be more preoccupied with their maritime security than with internal security and land-based threats. At a strategic level, some East Asian states are concerned about a possible power vacuum in the region absent a Russian naval presence, and, with declining U.S. force levels, the development of naval power-projection capabilities by China and Japan.

The naval arms buildup in Northeast Asia is not as intense as that in Europe during the Cold War, and no state has yet acquired the capability to impose its

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military hegemony over the region. Nevertheless, interstate rivalries just short of conflict are emerging, and most regional states are increasing their power-projection capabilities in ways that could be dangerous if political relationships deteriorate in the future. Claims that the naval expansion in Northeast Asia threatens maritime security can be exaggerated, and they often are. However, the rapid buildup of Chinese and Japanese naval forces has heightened the perception of threat to the security of the region; except for the Korean Peninsula, current security concerns in Northeast Asia are focused on China's developing power-projection potential. Most countries in and around the region are heavily dependent on the sea lanes over which they trade, and in the event of crisis or war most combat logistic support would have to use the major sea lanes that traverse the region.

Recently, regional naval forces have displayed interest in the application of cooperative maritime security models to Northeast Asia. There is no Pacific-area equivalent of the Dangerous Military Activities Agreement or of the confidence-building measures that are embodied in the Stockholm and Helsinki accords. Aside from some agreements still in force between Russia and the United States, only informal procedures in a few bilateral and subregional treaties provide guidelines for the conduct of naval operations within the region. The formal and bilateral naval arms control approaches negotiated between the United States and the Soviet Union are gone. Furthermore, the significance of rules for preventing or restraining maritime conflicts is increasing in the post–Cold War era, and cooperative maritime security in the broad sense could play a key part in the effort.

The objective of this paper is to consider cooperative maritime security in Northeast Asia in the field of maritime confidence-building measures and maritime cooperation measures. First, however, the theoretical background will be set forth.

What Is Cooperative Maritime Security?

Since the Second World War, international politics and relations have focused on security in terms of the ability of states to defend against external military threats. Throughout history states have tried to find security in conquest, buffer-zones, or spheres of influence. Security studies were accordingly defined as "the study of the threat, use and control of military force."[1] This realistic and practical approach to security, characterized by an emphasis on military force and nuclear deterrence, underpinned the Cold War East-West relationship. In particular, military competition figured prominently in debates about security. Recently, however, international-relations scholars have been considering other approaches to the prevention and management of conflicts,

approaches that emphasize cooperation, not rivalry, and that give less weight to the military element.

In the post–Cold War era, cooperative security has arisen from European principles of "common security." The concept of common security was introduced in 1982 in the Report of the Palme Commission, *Common Security: A Blueprint for Survival*: "A more effective way to ensure security is to create a positive process that can lead to peace and disarmament. . . . Acceptance of common security as the organising principle for efforts to reduce the risk of war, limit war, and move towards disarmament means, in principle, that cooperation will replace confrontation in resolving conflicts of interest."[2] This concept is based on the assumption that unilateral security is no longer effective, because states are becoming too interdependent economically, politically, and militarily. The potential importance of common security is that it combines the ideas of idealists and realists in an attempt to avoid increasingly fruitless competition.[3]

Later, the Common Security Program in the United Kingdom, led by Stan Windass and Eric Grove, developed the concept of *cooperative* security, as applied to Europe. The report of that program—three years of consensus-building and problem-solving work among a distinguished team of experts and senior military and civilian Nato officials—defined cooperative security as "a relationship between antagonists, not between allies. Although they are antagonists both sides nevertheless share significant areas of common interest: (1) in avoiding war, and especially nuclear war; and (2) in reducing the level of their military expenditure to the minimum needed for security."[4] The implication is that cooperative security is one of the interrelated aspects of an integrated common security policy. For example, the Organization for Security and Cooperation in Europe (the OSCE, formerly the Conference on Security and Cooperation in Europe, or CSCE) aims at security cooperation among member states in the absence of a common external threat or enemy, and it establishes a European security regime in which the national actors are "neither wholly compatible nor wholly competitive."[5] This approach regards cooperative security as security *with* rather than *against* the adversary. Of course, cooperative security would be unnecessary where potential adversaries fully trusted each other.

This thinking was applied to the Asia-Pacific region at the September 1990 meeting of the UN General Assembly, by the then Canadian Secretary of State for External Affairs, Joe Clark. He was the first to envisage the new notion of cooperative security as focused on the North Pacific. Since then, the idea has been pursued by the North Pacific Cooperative Security Dialogue, organized by the Centre for International and Strategic Studies (CISS) at York University in Ontario. Its vision is broadly similar to the notion of common security in the European context, but it promises to be more appropriate for the Asia-Pacific region.[6]

Cooperative security—preventing threats—replaces preparing to counter threats as the centerpiece of security planning. Its scope covers military cooperation, various confidence-building security measures, incidents-at-sea agreements, "hotlines," and limitations on force size and weapon types.[7] It differs from common security in that it embraces a gradual or evolutionary approach. Giving prominence to flexibility, cooperative security allows for the development of informal or formal security policies, including the incorporation of existing bilateral alliances as a basis for a multilateral security structure.

The aspect of cooperative security that specifically concerns maritime postures and relationships assumes that there is a maritime area of common interest, namely the avoidance of threats and military confrontations. Eric Grove first explored cooperative maritime security, in the European context, in his 1990 *Maritime Strategy and European Security*.[8] Cooperative maritime security, however, can be applied in Northeast Asia as well. Such a structure, which would have both military and nonmilitary components, could be an effective means of maintaining subregional and regional maritime peace and stability. In fact, cooperative maritime security strategy is essential if the military confrontation is to be reduced without chaos and without danger. Cooperative maritime security attempts not only to strengthen the mutuality of security by binding neighboring nations together to secure common goals but also to broaden its definition beyond the traditional concerns to include naval arms control, confidence building, and maritime cooperation.

Today, cooperative maritime security is a salient issue in maritime security in the Asia-Pacific region. The Australian foreign minister, Gareth Evans, and a leading Australian strategic analyst, Paul Dibb, argue that "developing a cooperative approach to the maritime area is clearly a strategically important issue, not least because of the crucial nature of the sealanes passing through Southeast Asian waters and the South China Sea."[9] Such an approach has already manifested itself; an example is the biennial Western Pacific Naval Symposium, initiated by the Royal Australian Navy in 1988. Another is the Council for Security Cooperation in the Asia-Pacific Working Group on Maritime Cooperation, established in 1995. Its essential purpose is to provide "a more structured regional process of a non-governmental nature . . . to contribute to the efforts towards regional confidence-building and enhancing regional security through dialogue, consultation and cooperation."[10] Cooperative maritime security can both remove existing maritime problems and protect a region from external or potential threats such as piracy, pollution, or interference with sea lanes. Cooperative maritime security is essential in the Northeast Asian setting, in which a host of political, economic, and military factors contribute to an uncertain and changing environment. Even so, much of the success of regional maritime cooperation arrangements must depend on the degree of commitment of the participating countries.

The Geostrategic Environment for Cooperative Maritime Security

Although the North Pacific region is now relatively free of conflicts, the potential for them is serious, given the geography of the region, so the importance of cooperative maritime security is apparent. Contrary to the global trend, Northeast Asian navies are experiencing steady growth and rapid modernization. Five principal phenomena have a particular bearing on cooperative maritime security there.

The Naval Arms Buildup. The first of these is the widespread naval buildup and acquisition of advanced weapons. Northeast Asia has been arming faster than Southeast Asia and the Persian Gulf area, as evidenced by increasing defense budgets at a time when defense budgets are declining in most of the Third World (see Table 1). For instance, in China, Taiwan, and South Korea, defense budgets have been growing by between 5 and 10 percent a year in real terms. Japan's annual rate of increase, though it has slowed to around 3 percent, is in absolute terms the biggest in the region.

A thaw in the Cold War commenced in the mid-1980s, but Northeast Asian countries began thereafter to invest a greater portion of their budget in the defense sector, spending after the Cold War an enormous amount of money to import weapons from abroad. As calculated from Table 1, from 1992 to 1996 Japan's defense budget increased by 25.6 percent, China's by an estimated 28.3 percent, Taiwan's by 34.7 percent, and South Korea's by 39.3 percent.[11] From 1988 to 1992, Japan spent $9.2 billion on importing weapons, thus becoming the second-largest weapons importer in the world. South Korea spent $3.5 billion, China $1.5 billion, Taiwan $2.2 billion, and North Korea, despite its chronic difficulties, $3.1 billion, to buy weapons abroad.[12]

The exact level of China's defense spending remains uncertain, with estimates ranging from the official figure of six billion dollars to a high of nearly fifty billion.[13] Taiwan's defense budget for fiscal year 1996 increased 20 percent over that of fiscal 1995, amounting to $13.6 billion.[14] These statistics show that Northeast Asian countries, without exception, have been engaged in military buildup programs. (Defense budgets are not expected to increase to the same degree in the next half-decade, due to economic problems.)

The horizontal proliferation of naval weapon systems and the modernization of regional navies in Northeast Asia have a variety of causes. One is the lessons of the Persian Gulf War; another is the reduction of the Russian military presence, especially the Russian Pacific Fleet, in the region. Further economic development is also a rationale for the growth of Northeast Asian navies—the great majority of trade depends on sea routes, and the protection of merchant shipping is a traditional task of navies (see Table 2).

Table 1
Changing Regional Defense Budgets, 1985–1996

	1985	1990	1992	1994	1996	Change (%)
Northeast Asia						
China	6.36	6.1	6.7	6.74	8.6	+32[a]
Japan	14.2	28.7	35.9	45.8	45.1	+218
North Korea	4.2	5.2	2.1	2.2	2.42	-42
South Korea	4.4	10.1	11.2	13.3	15.6	+254
Taiwan	4.1	8.69	10.1	9.55	13.6	+231
Southeast Asia						
Indonesia	2.3	1.5	1.8	2.32	3.0	+30
Malaysia	1.8	1.6	1.96	2.05	2.4[a]	+33
Thailand	1.5	2.1	2.71	3.62	4.0	+176
Philippines	0.5	0.98	1.4	0.88	1.1	+120
Singapore	1.2	1.7	1.7	3.0	4.0	+230
Persian Gulf						
Saudi Arabia	17.78	13.8	14.5	14.3	13.9[b]	-22
Iran	13.4	3.2	1.8	2.30	3.4	-75
Kuwait	1.87	1.5	9.3	3.09	2.9	+55
United Arab Emirates	2.04	1.6	2.6	1.88	1.9[a]	-7

Notes: Figures are in billions of U.S. dollars. Data do not reflect exchange-rate fluctuations.
a. Figures from official defense budget figures. For China, some estimates suggest that military-related spending is two or three times higher than official levels.
b. Estimated figures.
Source: IISS, *The Military Balance* (London: IISS, 1985–1996).

China. China has long produced a wide variety of naval ships, many based on Russian designs of the 1950s and 1960s. In recent years the Chinese have attempted to upgrade their equipment with imported technology and have begun to produce missiles and electronic systems of a relatively modern design. Recently, China has sought to benefit from economic hardship in Russia by buying Russian weapons and technology, such as Kilo-class submarines and *Sovremenny*-class destroyers, at bargain-basement prices. Despite its economic immaturity, China has been pressing forward with a vigorous plan to modernize its naval forces, allocating a huge amount of money for military spending. In fact, China is the country that has made the greatest leap in a naval arms buildup in the post–Cold War era. It is significant that China has been engaged in such an arms buildup, in view of the relative decline in the military threat.[15]

The *Luhu* and *Luda*-class destroyers, the *Jiangwei*-class frigates, the *Houjian* and *Houxin*-class patrol craft, and the *Dayun*-class replenishment ships are all

Table 2
Balance of Naval Forces in Northeast Asia

	China	Japan	Taiwan	North Korea	South Korea
Personnel	268,000	46,085	30,588	46,000	26,000
Submarines[a]	89[b]	18	4	22	4
Destroyers	18	42	18	0	7
Frigates	34	20	10	3	9
Amphibious Ships[c]	58[d]	6	20	10	16

Notes
a. Submarines exclude coastal and midget boats.
b. Includes twenty-seven reserve units.
c. Amphibious ships exclude LCUs and LCMs.
d. Includes four reserve units.

Source: Richard Sharpe [Capt., RN, Ret., OBE], *Jane's Fighting Ships 1996–1997* (London: Jane's Information Group, 1996).

now entering fleet service. During Premier Li Peng's visit to Moscow in December 1996 Russia agreed to deliver two *Sovremenny*-class destroyers, which will give the People's Liberation Army Navy (PLAN) improved surface strike capabilities.[16] As the authors of a recent book on China note, "The new *Jiangwei* class of frigates, the *Luhu*-class of destroyers, and the newly upgraded version of the older *Luda*-class destroyers are all formidable vessels, especially in the context of the other powers in the region. A *Jiangwei* frigate might not intimidate an American sailor, but it looks pretty unnerving to a Vietnamese."[17]

The PLAN continues to make its submarine force—the third largest in the world in numbers—a priority. There are an estimated ninety submarines, including two strategic submarines (one *Xia*-class SSBN and one Golf-class SSB), five *Han*-class nuclear attack boats, one cruise missile submarine, and eighty patrol submarines (of which twenty-seven are in reserve). A new Type 094 SSBN reportedly is under development and due to start building soon, but its construction may be delayed because of concentration on SSNs. It will be some time before China has an SSBN force like even that of Britain or France, and she will continue to rely on land-based missiles. Russian advisers are helping design a new Type 093 SSN based on the Russian Victor III, the first of which is expected to be launched in 1999 for completion in 2001. The *Ming*-class diesel-electric submarines developed so slowly that foreign experts suspected technical

problems as construction was suspended, then resumed. The last was launched in 1996, and thirteen are in service. The *Ming* has been replaced in production by the *Song* class (Type 039), the first of which was running trials in 1997; no further *Songs*, however, are under construction. In 1995, China ordered four Russian Kilos—the last pair of the newer Type 636—the last one to be delivered in late 1998. There is a single aging Type ESSG (a modified Romeo [*Wuhan*]-class) submarine with C-801 antiship cruise missiles. This system is also fitted in some of the *Hans* for surface launch. A new version capable of underwater launch from torpedo tubes is under development. Although they are reported to exist, aircraft carrier and new-generation SSBN programs may be delayed by China's economic and technical decisions. Block obsolescence looms for much of the PLAN fleet.[18]

Japan. The Japan Maritime Self-Defense Force (JMSDF) has sixty-two destroyers (four of them *Kongo*-class Aegis ships) and frigates of between 1,290 and 7,250 tons standard displacement, fifteen diesel submarines, three hydrofoil fast attack missile craft, thirty-five mine warfare ships (minesweepers, a minelayer, and a tender), six landing ships including a new *Osumi* "mini-LHA," and four fleet supply ships.[19] Japanese naval combat aircraft are organized into seventeen maritime patrol fixed-wing and antisubmarine (ASW) helicopter squadrons, with about a hundred Lockheed/Kawasaki P-3C Orions and an almost equal number of Mitsubishi HSS-2B and SH-60J helicopters, as well as a ten-plane MH-53E mine countermeasures squadron.[20]

JMSDF modernization is currently based on two basic defense-related documents—the new National Defense Program Outline, released in late 1995, and the Mid-Term Defense Buildup Plan. The current Program Outline sets forth Japanese security-related goals and guidelines for the next decade; the Buildup Plan lays down how the Outline is to be implemented and establishes the pace of military modernization through 2000. A third, and supporting, planning document, Japan's 1997 Defense White Paper, stresses revolutionary military high technology. The JMSDF's major vessel acquisition and procurement plans from 1 April 1997, based on the Defense White Paper, are for two 4,400-ton destroyers, one submarine, and one training and support ship.[21]

The characteristics of Japanese military capabilities are evident in the modernization of its naval forces. Japan was reported to be planning to acquire four additional Aegis destroyers (at a billion dollars per ship) in the near future.[22] A long-range fleet of Aegis destroyers would allow Tokyo to envision building an aircraft carrier; the Aegis system was originally designed to protect carrier battle groups. The JMSDF has a highly modern, if limited, naval capability centered primarily around destroyers (although an Aegis destroyer is similar in size to a cruiser), frigates, and minesweepers. These forces, together with a modern diesel submarine fleet and a very modern if small group of amphibious landing ships, give Japan a strong capability for defending the sea lanes throughout the

Northeast Asian area for which it is responsible under its security arrangements with the United States.

Republic of Korea. The ROK Navy is placing greater emphasis on its long-range capabilities, procuring hundreds of new combat planes from the United States and building dozens of new frigates and destroyers. Since 1981 the South Korean fleet has acquired nine frigates, twenty-seven corvettes, six minehunters (with two more planned), several support vessels, and eleven Super Lynx shipborne antiship helicopters (with a further order of its ASW version expected).[23] Seoul is pursuing the 3,900-ton Korean Destroyer (KDX) program, but that has been delayed by the selection of its command and fire control system. The KDX prototype, the *King Kwanggaeto*, was launched on 28 October 1996 for delivery in 1998, with the second scheduled for handover in 1999 and the third in 2000.[24] South Korea's program for nine Type 209 submarines is picking up speed, with the first of the class, *Chang Bogo*, commissioned in 1993 and four more already commissioned. Only one of the nine is German made, all of the others being built in South Korea. The original plans for a total of eighteen submarines are unlikely to be funded; current programs aim at nine.[25] The new submarine project, which will upgrade the existing Type 209-1200 submarines to 1,500-ton boats with air-independent propulsion, might be delayed for several years by economic problems.[26]

Republic of China. The Taiwanese Navy has been undergoing a robust modernization process, one that seems to envision a force-in-being rather than the capability to launch an attack. Although Taiwan's destroyers have been recently rehabilitated and rearmed, their effectiveness and reliability are hampered by age. Taiwan's landing craft are predominantly leftovers from U.S. World War II construction. A new combat support ship, the *Wu Yi* AOE, the largest vessel ever built for the Taiwanese Navy, represents a major step forward, but it is not sufficient to support a large offshore operation. The dramatic improvements in the Taiwanese fleet, especially the ongoing acquisition of modern *Cheng Kung* (U.S. *Ingraham*-like) and *Kang Ding* (French *La Fayette*) FFGs and *Knox* FFs, seem to aim mainly at sea-lane defense, reflecting a shift in Taiwan's military priorities from preparing to meet a full-scale PLA invasion to defending against a blockade or other forms of limited war. For example, in June 1992 the Taiwanese Navy staged its first sea-control exercise, dealing with a simulated attempt by the PLAN to cut off Taiwan's seaborne trade by mining harbors and attacking commercial shipping bound to and from the island. The existing submarine force of four is small, and Taiwan is facing enormous problems supplementing it. Taiwanese submarine deals with France, Germany, and the Netherlands have met with protests from mainland China. However, the Taiwanese Navy is currently considering indigenous construction of submarines.[27]

Territorial and Resource Disputes. The 1982 Law of the Sea Convention, which was adopted as a result of the third UN Conference on the Law of the Sea, is a powerful institutional framework for defining and resolving maritime issues. The Convention extended exclusive economic zones (EEZs) out to two hundred nautical miles; because the seas of Northeast Asia are either enclosed or semi-enclosed and are studded with so many islands that nowhere does the distance from one headland or island to another exceed four hundred nautical miles, much of the region's offshore expanse has been subjected to overlapping resource claims and intense territorial disputes (see Table 3). Many involve claims by coastal states over the continental shelf, and criteria for resolving overlapping shelf and EEZ claims.

There are territorial disputes between Russia and China, about the boundary along the Amur River; between Russia and Japan, over the Kurile Islands (or Northern Territories); between China, Taiwan, and Japan, over a group of barren islets to the north of Taiwan, known in Japanese as the Senkakus and in Chinese as Diaoyu Tao; between Russia and the United States, over the Bering Sea; and between South Korea and Japan over the Liancourt Rocks (known in the respective nations as the Tok-Do and Takeshima) in the southern part of the East Sea (otherwise the Sea of Japan).

Offshore resources are a related concern, particularly as the seabed of the East China Sea and in the Sea of Okhotsk is believed to be rich in reserves of oil and gas. These problems are serious enough to threaten maritime security, but they could be alleviated by maritime safety agreements and confidence-building measures.

The natural resources in and under the seas of Northeast Asia are in many cases subject to contending claims. The interests of most countries in the region are in the broadest sense economic. The North Pacific is a resource-rich region, especially in commercial fisheries. Three principal issues pertaining to the use of living resources—illegal fishing, unregulated fishing, and driftnetting—have threatened international environmental security in the Bering Sea and the adjacent North Pacific. These have all resulted in bitter disputes, impaired relations between victim and culprit states, and international countermeasures. Besides the United States and Russia, the states most involved with current management practices in the Bering Sea are South Korea, North Korea, Japan, Taiwan, and China.[28]

Military tensions and conflicts within the Asia-Pacific region are becoming increasingly associated with access to and control over resources and with environmental degradation. In many ways, the disputes over the Senkakus, the Tok Islands, and the Northern Territories are related to these issues. Claims to the islands involve such resources as fisheries, petroleum, and minerals, and also concerns for their ecosystems. On the other hand, however, restrictions on the passage of vessels through the disputed zones impede the navigation of oil tankers

Table 3
Law of the Sea Disputes Affecting the Northeast East Asian Region

Nature of Dispute	Countries Involved	Occupying Countries
Various Overlapping Claims to the Spratly Islands		
Amboyna Cay	China, Vietnam, Taiwan, Philippines, Malaysia	Vietnam
Commodore Reef	China, Vietnam, Taiwan, Philippines, Malaysia	Philippines
Falt Island	China, Vietnam, Taiwan, Philippines, Malaysia	Philippines
Itu Aba Island	China, Vietnam, Taiwan, Philippines	Taiwan
Lankiam Cay	China, Vietnam, Taiwan, Philippines	Philippines
Loaita/South Island	China, Vietnam, Taiwan, Philippines	Philippines
Mischief Reef	China, Philippines	China
Nam Yit Island	China, Vietnam, Taiwan, Philippines	Vietnam
Nanshan Island	China, Vietnam, Taiwan, Philippines	Philippines
Northeast Cay	China, Vietnam, Taiwan, Philippines	Philippines
Pearson Reef	China, Vietnam, Taiwan, Philippines	Vietnam
Sand Cay	China, Vietnam, Taiwan, Philippines	Vietnam
Sin Cowe Island	China, Vietnam, Taiwan, Philippines	Vietnam
Southeast Cay	China, Vietnam, Taiwan, Philippines	Vietnam
Spratly Island	China, Vietnam, Taiwan, Philippines	Vietnam
West York Island	China, Vietnam, Taiwan, Philippines	Philippines
Thitu Island	China, Vietnam, Taiwan, Philippines	Philippines
Disputed Claims over the Paracel Groups	China, Vietnam, Taiwan, Philippines	China
Boundary Disputes in the Gulf of Tonkin	China, Vietnam	
Disputed Claims over the Yellow and East China Seas		
Paratas Reef	China, Taiwan	Taiwan
Senkaku Island	China, Taiwan, Japan	Japan
Penghu/Pescadores	China, Taiwan	Taiwan
Disputed Claims over the East Sea		
Tok Islands	South Korea, Japan	South Korea
South Kuril Islands	Russia, Japan	Russia

and, therefore, energy security interests. Military action to enforce claims could damage existing oil exploration and production facilities, threatening widespread pollution. The economic stakes and strategic trends in the region are such that any regional conflict now would have a major, if not dominant, maritime dimension.

Although the countries involved have generally managed to avoid direct conflict, territorial claims may well disturb the stability of the region; overlapping EEZ claims are particular flashpoints. Establishing clear and recognized maritime boundaries and sovereign jurisdictions will be difficult; until such settlements are finally reached, various cooperative efforts and confidence-building programs—predominantly of a maritime nature—could serve to lessen the likelihood of conflict and promote an atmosphere of trust and mutual respect necessary for lasting agreements.

Marine Pollution. The rapid economic development of Northeast Asia led to pollution at sea to an extent that has created regional concern. There are many sources of sea pollution, most of them activities on land. In recent years many Northeast Asian countries, including China and Russia, have pursued a policy of "development first and environment protection later." In 1991, for example, Chinese industrial waste thrown into the rivers included 1,836 metric tons of heavy metals, 1,127 tons of arsenic, and 4,666 tons of cyanides.[29] According to the Bohai Zone Fishery and Fishing Harbor Administration, under the Ministry of Agriculture, some 20 percent of fishery resources in the Bo Hai (the northwestern extremity of the Yellow Sea) have been seriously damaged by environmental pollution and overfishing.[30] The Stockholm Environment Institute has stated that "if the Chinese economy grows 8.5 percent a year for the next decades, by the year 2025 China will produce three times as much carbon dioxide as the United States";[31] that situation would also be reflected in the pollution of the Yellow Sea.

The environmental impact of Soviet dumping of solid and liquid nuclear waste in the East Sea, the Sea of Okhotsk, and the waters southeast of Kamchatka since the 1960s is an urgent problem, and its assessment requires Japanese collaboration. These dangerous disposals have continued since the dissolution of the Soviet Union. For instance, the Russian Pacific Fleet dumped radioactive waste in the East Sea in October 1993; Japan and South Korea protested. In addition, Moscow sank about six hundred tons of written-off ammunition in the East Sea on 14 February 1995.[32] It has also been reported that in 1992 a missile on board a ballistic missile submarine accidentally exploded in the Sea of Okhotsk near Shimushir and that an advanced missile fell overboard from a transport ship off southeastern Sakhalin. Further, the continuing disposal of nuclear waste, such as reactor coolant, by the Russian Pacific Fleet has created a growing need to determine the extent of the pollution problem in the region.[33]

The Importance of Sea Lanes. In the Asia-Pacific region the ocean is important not only for coastal states but also for the developed countries that consider the region's sea lines of communication so important that they maintain a military presence in the region. Thus both direct and indirect risks to regional maritime stability exist. These dangers include the large movement of refugees, drug trafficking, and the potential for conflict arising from the absence of an institutional structure to manage disputes.

Furthermore, the use of the seas as a highway for commerce makes Northeast Asia a target for piracy, as has been seen in the East China and Yellow seas. From 1992 to early 1994 there was a northward shift of the focus of piracy, from the Straits of Malacca and Singapore to the Hong Kong–Luzon-Hainan Island area, the South China Sea, and significantly, the East China Sea and beyond. In the Yellow Sea there was a single reported piracy incident in 1994. Piracy is a never-ending menace to the freedom of navigation, and the incidents continue (see Table 4).[34]

Table 4
Piracy Events in Far East, 1991–1996

	1991	1992	1993	1994	1995	1996
China–Hong Kong–Macao			1	4	31	9
Taiwan					2	
East China Sea		1	10	6		1
Gulf of Tonkin				1		
Hong Kong–Luzon-Hainan			27	12	7	14
South China Sea	14	6	31	6	3	2
Vietnam				2	4	
Vladivostok (Russia)					1	
Kampuchea			1			
Yellow Sea			1	1		
Total	14	7	71	32	48	26

Source: ICC-International Maritime Bureau, *Piracy Annual Report 1993–1997* (Kuala Lumpur: IMB Regional Piracy Centre, 1993–1997).

To date, however, not much thought has been given to applying cooperative maritime security to all these issues. Long-term economic security is dependent upon the free flow of trade, which in a conflict situation would require cooperative measures to protect. During the Cold War, the protection of shipping was largely the preserve of the major maritime powers; it is now at least as much a concern of the regional countries themselves. Today these problems are typically handled nationally, with a resulting potential for international conflict.

Regional Approaches to Cooperative Maritime Security in Northeast Asia

Recently, there have been several bilateral naval activities for cooperative maritime security in the region. Examples are the first-ever U.S.-Russian humanitarian relief exercise, COOPERATE AT SEA, held near Vladivostok in August 1994; the recent resumption of Russian naval ship visits to China; the first-ever visit of South Korean naval vessels to Japan in January 1995, and to Russia in September 1993; and the visit of the guided missile destroyer *Admiral Vinogradov* on 27 June 1997 to Japan, in the first Russian naval port visit there in 103 years.

There have also been some important developments in terms of bilateral and multilateral cooperation of a strictly environmental and economic nature. Recent research supported by Japan and Russia on pollution in the Sea of Okhotsk and the East Sea; the increased number of bilateral exercises between Russian and other regional navies; and trilateral discussions between the United States, the Republic of Korea, and Japan on sea-lane security are all examples of purposeful interaction. The significant feature of all of these activities is that they have been directed toward some common goal.

The ROK Navy organized an international sea power symposium in August 1989 at Seoul. There, issues of Korean and regional maritime security were addressed. Since that conference near the end of the Cold War, it has become clear that the approaches of Northeast Asian countries to cooperative maritime security can be divided into two broad categories: maritime confidence-building measures and maritime cooperation measures.

Maritime Confidence-Building. Measures to reduce apprehension between adversaries about capabilities and intentions have the advantage of not involving the reduction or constraint of naval force structure, combat readiness, or modernization. At the same time they can enhance stability and predictability at sea, eliminate mutual misunderstanding, reduce inadvertent conflicts at sea arising from misperception of, or inadequate or mistaken reaction to, other nations' activities. Furthermore, it is certain that such international problems on the high seas as the driftnetting and territorial delimitation in the North Pacific cannot be solved through the unilateral adoption and enforcement of national measures. Rather, multilateral confidence-building measures lessen these problems and contribute to Northeast Asian security.

The complex security context of Northeast Asia requires a new look at maritime risk reduction in the region. This assessment must consider the relevance of existing maritime measures in the region as well as the maritime risk reduction experience in Southeast Asia. A variety of confidence-building measures merit consideration, including the best established maritime incidents-at-sea (INCSEA) agreements as well as broader measures that enhance openness and

transparency of forces and plans. The following kinds of initiatives could assist maritime security and stability and can be applied to Northeast Asia specifically.

Multilateral Meetings. The issue of maritime security has recently been prominent on the agenda of the Western Pacific Naval Symposium (WPNS) and of an unofficial "second-track" organization called the Working Group on Maritime Cooperation of the Council for Security Cooperation in Asia Pacific (CSCAP). The WPNS generally handles special matters of naval cooperation, and the CSCAP Working Group concentrates on broader issues of maritime cooperation.

The WPNS, which meets biennially, comprises the navies of the Association of Southeast Asian Nations (ASEAN), China, Japan, the Republic of Korea, the United States, Australia, New Zealand, and Papua New Guinea. The WPNS was held in Sydney in 1988, in Bangkok in 1990, in Hawaii (hosted by the Commander in Chief, U.S. Pacific Fleet) in November 1992, in Kuala Lumpur in 1994, and in Tokyo in 1996. The Sixth WPNS will be held in Seoul on 14–15 October 1998. The Bangkok WPNS agreed that a technical workshop of representatives of regional navies should develop ideas about enhanced naval cooperation in relevant areas. Special mention was made of protection of shipping and the need for procedures to exchange information on maritime activities of common concern. Flag officers from nineteen Asia-Pacific navies, including those of Russia, China, Japan, and South Korea, agreed at the fifth WPNS in Tokyo to study guidelines for maritime operations. They agreed to provide each other information about their naval forces, doctrine, and, where appropriate, warship movements. The WPNS cannot promote multilateral maritime cooperation in highly sensitive areas, but it has organized a series of subordinate workshops that have produced a maritime information exchange directory, a tactical signals book, a replenishment at sea manual, and planning guidance for command-post exercises.[35]

The concept of a Council for Security Cooperation in Asia and the Pacific was first articulated at a meeting in Seoul in November 1992. The critical achievement of the Seoul meeting was an agreement to establish the Council to provide "a more structured regional process of a nongovernmental nature . . . to contribute to the efforts towards regional confidence-building and enhancing regional security through dialogues, consultation and cooperation."[36] The Council is a multilateral, nongovernmental organization dedicated to security dialogue in Asia and the Pacific. The first meeting was held in Kuala Lumpur in December 1994 (a month after the European Council for Security Cooperation in Asia and the Pacific met in London). The Council's Working Group on Maritime Cooperation is one of the most important second-track entities in the region. A working group held in Kuala Lumpur in June 1995 discussed major issues, such as regionwide or

subregional safety at sea agreements, that would address regional maritime instability caused by piracy, drug trafficking, and illegal migration.[37]

Joint Exercises. At present the "Rim of the Pacific" (RIMPAC) exercise is the only regular (every two years) multilateral naval cooperation in the Asia-Pacific region. The original purpose of RIMPAC, which was first held in 1971, was to increase the interoperability of Pacific naval forces against the growing power of the Soviet Pacific Fleet. The United States, Canadian, and Australian navies originally took part in the exercise; the ROK Navy joined them ten years later. In 1990 the nature of RIMPAC began to change; it is now aimed at strengthening naval ties to deal with post–Cold War regional security issues such as piracy and humanitarian operations. However, the ROK Navy still has no bilateral naval exercises with either the Chinese navy or the JMSDF.

A Korean defense analyst, Professor Hyun-Ki Kim, has suggested that the United States should take the lead in fostering naval cooperation between the ROK Navy and the JMSDF.[38] Shared defense of the sea lanes in and around the East and Yellow seas would be the objective, and a lower economic defense burden would be a potential benefit. Overcoming many challenges and objections, the ROK Navy recently has established "low key" cooperation with the JMSDF, such as exchanges of naval officers for naval war and staff colleges, and port visits.

Port Visits and Military-to-Military Contacts. The first South Korean defense minister ever to travel to Japan arrived there in April 1994 to finalize naval goodwill visits. Other such visits have taken place with Russia, with two Korean destroyers calling at Vladivostok in September 1993. The Korean navy is extending its range, with visits to Indonesia and Bangladesh becoming almost routine. All of this points to the political use of the South Korean navy to establish further ties with regional powers while maintaining friendly relations with Russia and containing North Korea. Furthermore, the Republic of Korea and Japan have agreed to an exchange of naval training squadrons, with Seoul proposing that Korean submarine sailors train on Japanese submarines and simulators.[39]

A multinational port visit can be a useful level of naval cooperation. The first regional instance was the International Fleet Review of May 1990 at Penang, Malaysia, in which sixty-three warships from eighteen countries participated.[40] Military-to-military contacts, including personnel exchanges with regional navies, are another low-level form of multinational naval cooperation. This has been very fruitful in the Asia-Pacific region, as shown by U.S.-Russian naval staff exchanges, increased Korean-Japanese maritime contact, and the Chinese-Japanese strategic dialogue.

Incidents at Sea (INCSEA) Agreements. The success of a 1993 agreement between the Russian Navy and the ROK Navy as well as the JMSDF to prevent incidents at sea has led to the prospect of a wider multilateral agreement in the

region. An INCSEA agreement is designed to prevent inherently or inadvertently dangerous military activities or to contain their consequences; it does so by articulating codes of conduct for military forces and by mandating modes of consultation and communication in crises. As Asia-Pacific navies grow in reach and capability, bilateral and multilateral subregional INCSEA agreements should become valuable maritime confidence-building measures.

Also, the 1972 INCSEA Agreement between the United States and the Soviet Union has served as a model for over a dozen similar bilateral documents, as well as for the 1989 U.S.-Soviet agreement at the Joint Staff–General Staff level on prevention of dangerous military activities.[41]

However, the limitations and exclusions of existing incidents-at-sea agreements are also relevant. Submerged submarine operations are excluded, but even more importantly, the agreements are limited to high seas activities only.

A prospective regional INCSEA agreement should be seen primarily as an operational instrument rather than a political one. It is important to emphasize that such documents alone cannot effectively solve the problems associated with submarine operations or disputes over EEZ boundaries. On 27–29 October 1994, for example, an incident between the aircraft carrier USS *Kitty Hawk* and a Chinese *Han*-class nuclear attack submarine occurred in the Yellow Sea.[42] No INCSEA treaty modeled on existing agreements would have applied to that situation. (The United States and China agreed on an INCSEA treaty on 19 January 1998.) A flexible set of bilateral and multilateral negotiations is needed to provide common ground on the interpretation of territorial seas and EEZs and on submerged submarine communications in extremely dangerous situations. Indeed, it is understood that Russia has negotiated such an agreement with the Republic of Korea and Japan.

A United Nations Arms Register. The present UN register of conventional arms, through its intrinsic value and thanks to parallel endeavors, can be highly effective in not only reducing dangerous misperceptions but also in promoting trust and partnership between states. According to UN reports, nineteen out of forty-seven Asian countries submitted information in 1994, up from seventeen in 1993. However, several important Asia-Pacific countries, including Thailand, Brunei, Vietnam, Cambodia, North Korea, and of course Taiwan (which as neither a member nor a recognized observer of the UN was not invited to participate), have not yet joined the register. The summer 1994 meeting of the UN Group of Experts on the UN Arms Register was a major disappointment for those who had hoped for a significant strengthening or expansion of the register in the near future. In particular, no progress was made on adding new military weapons and indigenous production to the register, or on amending or adding to the categories of weapons covered.[43]

Nor is the UN effort to track worldwide arms transfers effective, despite a growing international push for all 185 member nations and observers to publish

annual accounts of weapon deliveries.[44] This has led some Asia-Pacific states, especially certain ASEAN nations, to call for the establishment of a regional arms register that would provide more information, particularly with regard to naval forces. At present the UN global register records changes in ownership only of "warships" of 750 tons or more displacement. Reducing that tonnage threshold and adding detailed information on the nature of these ships could be useful. It has been argued that the establishment of an ASEAN regional arms register with a naval emphasis "could contribute to the long term development of the Register while at the same time promoting regional security."[45]

Maritime Cooperation. Maritime cooperation measures can offer a number of benefits. Their main goals are cost reduction through shared development or combined operations for humanitarian purposes, joint development of marine resources, the protection of sea lanes, and the prevention of marine pollution. Maritime cooperation measures can also maintain communications when tensions heighten. They show that neighboring countries can work together to deal with certain kinds of problems at the regional or subregional level. This can help not only to deter potential adversaries but also to assure outside countries that they need not have great concern for their seaborne trade. Maritime cooperation measures are divided into two areas, operational measures (such as the protection of sea lanes and the control of pollution) and functional ones (such as cooperation for resources). They cover search and rescue and actions to counter marine pollution and such illegal activities as drug smuggling, piracy, and fisheries infringement.

Protection of Sea Lanes. Extravagant claims to sovereignty over adjacent waters, unresolved maritime boundaries, and potentially restrictive interpretations of the right of innocent passage can threaten sea lanes. During the Cold War, the Republic of Korea, the United States, and Japan held unofficial conferences in order to deal with the sea lane problems that would arise in the event of a superpower confrontation in Northeast Asia. Later, several ASEAN countries, Australia, and New Zealand joined the conference series. The focus has now shifted toward rapid economic growth through sea trade. For example, over two hundreds ships a day transit the straits of Malacca, and half of them are oil tankers. Nowadays, most coastal countries in the region have a vested interest in stability on the sea lanes; naval exercises focused on sea lane protection could help generate a regional consensus.

Control of Marine Pollution. Marine environmental issues are of increasing concern to the Northeast Asian region because of the threat posed to natural resources. The need for cooperation for the environmental protection of Northeast Asian seas has become self-evident; the remaining question is how to establish an appropriate cooperative maritime security regime. The 1982 Convention on the Law of the Sea covers the cooperation of states bordering

enclosed or semi-enclosed seas. According to Article 207, "states shall adopt laws and regulations to prevent, reduce and control pollution of the marine environment from land-based sources, including rivers, estuaries, pipelines and outfall structures, taking into account internationally agreed rules, standards and recommended practices and procedures." One result is the Agreement on Marine Scientific and Technological Cooperation between China and Spain, which was signed on 6 April 1992 in Madrid. It covers studies on protection from marine pollution as well as basic studies on oceanography and on the development, use, and management of marine resources.[46]

Several environmental management activities are increasing in Northeast Asia. For instance, all Northeast Asian countries except Mongolia are members of the Northwest Pacific Action Plan. At its first meeting in Vladivostok in 1991, the group decided that the Plan would initially cover marine environmental issues in the East Sea and the Yellow Sea.[47] With the assistance of the World Bank, China and South Korea have outlined an action plan for monitoring and protecting the "Yellow Sea Large Marine Ecosystem" as well as making possible sustainable utilization of the sea's biological resources.[48] Another regional initiative, the Northeast Asia Environment Program, is one of the most effective institutional instruments of environmental cooperation. With the help of the United Nations Economic and Social Commission on Asia and the Pacific and of the UN Development Program, it has held a series of meetings bringing together high-level foreign ministry officials since the early 1990s.[49] Also, a joint South Korea–Japan-Russia excursion in March 1994 in the East Sea measured the degree of radioactive waste contamination. Japan agreed not only to provide Russia a hundred million dollars for decommissioning nuclear submarines but also to contribute to a joint study on controlling pollution in the Sea of Okhotsk and off northeastern Sakhalin.[50]

Living Marine Resources. There are bilateral arrangements between regional countries not only to protect marine resources but also to decrease conflicts. For instance, the 1965 fisheries agreement in force between Korea and Japan regulates fishing operations mainly around the southern part of the Korean Peninsula. A 1975 fisheries agreement between China and Japan, which replaced nongovernmental arrangements of 1955, applied mostly to the waters west of a rough median line between China and the other coastal states. Both agreements were the result of long, bitter disputes.

The main features of the Korea-Japan treaty are that it authorizes each state to adopt an exclusive twelve-mile fishery zone along its coast and that it establishes a joint control zone adjacent to the Korean EEZ. The resources within the joint control zone are to be shared on an equal basis, with a maximum annual catch of 150,000 tons (with a 10 percent fluctuation) for each party in specified major fisheries.[51] For enforcement in the joint control zone the "flag state" principle is

applied, denying coastal states the right of visit and arrest in case of violations by the other party.[52]

It should be noted that third countries' fishing vessels have violated territorial waters. According to the National Fishery Administration of Korea, for example, there were in 1993 about 1,300 cases of violation by Chinese fishing vessels of the Korean fishery resources protection area. In addition, that same year the number of Chinese fishing vessels claiming emergency refuge in Korean ports reached 7,779.[53] Northeast Asian countries have not solved the problem of overlapping EEZs in the Yellow Sea. Without an effective agreement, the numbers in both instances are expected to keep increasing unless relevant measures are taken by the two countries. The situation has recently worsened due to increased Chinese fishing in the militarily sensitive area around the Five Islands in the Yellow Sea off North Korea, where the South Korean government has restricted fishing even for its own nationals in order to avoid conflict with North Korea.

In most cases, present arrangements manage fishing only by regulating the distribution of catch and the scale of effort—the number of vessels, fishing seasons, and the size of gear. There is no general forum in which management issues or the distribution of catches can be discussed by all interested parties. The existing bilateral fisheries commissions do not even publish decisions or the data upon which they are based. There is a clear need for a mutual agreement for the prevention of illegal fishing in the region.

Nonliving Marine Resources. With the exception of the Japan-Korea Joint Development Agreement of 1974, little progress has been made in the settlement of the offshore boundary disputes that have prevented the active search for oil in Northeast Asian waters. South Korea, Taiwan, and China rely on the principle of "natural prolongation," arguing from Japan's geophysical relationship to the East China Sea and the Okinawa Trough beneath it. The trough lies immediately west of the Ryukyu chain, stretching from the Japanese home island of Kyushu to Taiwan, its depth ranging from a maximum of approximately 2,800 meters near its southern end to eight hundred meters off the northernmost Ryukyus. According to South Korea, Taiwan, and China, this trough terminates the natural prolongation of the Japanese territory and thus constitutes a natural boundary between themselves and Japan. Japan, however, has insisted on the application of the principle of "equidistance." This bitter dispute has been resolved, at least partially, by a joint development agreement between South Korea and Japan; China, however, has protested that the agreement infringes its sovereignty.

Most countries in the world accepted the exclusive economic zone as a sensible system of resource management and marine environment protection; the coastal countries in Northeast Asia, however, have hardly been enthusiastic about them in the East China Sea and the Yellow Sea. Russia was the first

country in the region to claim a two-hundred-mile exclusive fishery zone (in 1976) and a two-hundred-mile EEZ (in 1984). In addition, North Korea established an EEZ in 1977. The other major coastal states—China (in 1997), South Korea (in 1996), and Japan (in 1996)—have also established their zones. One reason would seem to be that the introduction of EEZs would considerably reinforce the position of Japan vis-à-vis China and Korea in the continental-shelf resource controversy. Ultimately, the introduction of the EEZ is in no way expected to change dramatically the final balance sheets of the coastal states. The gain or loss on the part of each will be merely relative, depending on the needs of each. This may be why the status quo in the region has so far not been disrupted even though the coastal states are obviously concerned over maritime cooperation.

Prospects and Recommendations

As Asia-Pacific regional naval forces grow, and certainly in anticipation of the growing reach of the Chinese fleet, it can be expected that calls for cooperative maritime security will increase. This is likely to happen whatever the outcome in North Korea. Prospects for acceptance and implementation of maritime confidence-building measures are much better than those for initiatives that seek to limit naval construction. A number of promising avenues for maritime confidence-building measures suggest themselves:

- Increasing reciprocal naval port visits and military-to-military contacts
- Strengthening governmental discussions of such subjects as maritime strategy, doctrine, data on naval forces, and future building plans
- Exchanging observers at naval exercises
- Publishing a maritime information directory based on the UN Arms Register.

In addition, there are a number of possibilities for fruitful maritime cooperation:

- Establishing multilateral and mutual naval exercises for search and rescue operations
- Publishing joint handbooks of naval tactical procedures for humanitarian operations
- Strengthening such organizations as the Northwest Pacific Action Plan
- Establishing a marine pollution monitoring network.

The new security environment of maritime cooperation and the imperative for budget reduction due to economic problems since late 1997 have given

Northeast Asian countries a good opportunity to apply cooperative maritime security models in the region. The principal objective of cooperative maritime security in Northeast Asia is not only to implement a stable maritime regime but also to reduce the economic burden of the exploitation of marine resources and of the building up of naval forces. Such a regime is an essential prerequisite for a maritime security environment in which countries would not feel the need to acquire the larger maritime forces that are now being planned in the region. Maritime confidence-building measures should be attempted first on a bilateral or a multilateral basis, thereafter advancing to higher levels of dialogue and cooperation. As one analyst has noted, "Small steps in which states could find some common ground can help modify doctrinal thinking in a manner that might later make far-reaching measures feasible."[54] As for maritime cooperation measures, at present the focus should be on joint development of marine resources and the prevention of marine pollution, as achievable objectives.

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Ψ

Call for Papers
World War II: A Sixty-Year Perspective

Siena College is sponsoring its fifteenth annual international, multidisciplinary conference on "The Sixtieth Anniversary of World War II" on 1–2 June 2000. The focus will be 1940, though papers dealing with broad issues of earlier years will be welcome.

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Deadline for submissions is 15 November 1999; final papers are due 15 March 2000. Replies, inquiries, abstracts or outlines, and CVs to Prof. Thomas O. Kelly II, Department of History, Siena College, 515 Loudon Road, Loudonville, N.Y., 12211-1462, tel. (518) 783-2512, fax (518) 786-5052, e-mail lendziewic@siena.edu.

The South African National Defence Force
Between Downsizing and New Capabilities

Dr. Greg Mills

THE CREATION OF THE South African National Defence Force (SANDF) since the advent of South Africa's nonracial democracy in 1994 has arguably been one of the most successful episodes in the transformation of the Republic's civil service. However, on the cusp of the new millennium, critical questions about the Defence Force's budget allocations, its personnel levels, and equipment raise concerns about its future abilities and roles.

This paper seeks to address the following questions. What is the background of the formation of the SANDF? What roles and responsibilities are envisaged for the SANDF? What are the future problems facing this force? Finally, what is the potential for international defence and, specifically, naval cooperation?

The Formation of the SANDF

Significant progress has been made in South Africa in, first, the integration of a large number of statutory and nonstatutory forces into a single, cohesive defence force; and second, the institution of systems of civilian control over the defence force. The latter was not, of course, a feature of the apartheid regime, particularly in the 1980s, when the old South African Defence Force (SADF) played such a pivotal role in shaping its own political destiny.

The process of military integration began with the conclusion of negotiations between, principally, the ruling National Party government and Nelson Mandela's African National Congress (ANC)—even before the watershed 1994

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elections. The SADF was merged with forces of Transkei, Bophuthatswana, Venda, and Ciskei (the so-called "Bantustan," or TBVC states—the nominally independent "homelands"), the armed wings of the ANC (known as Umkhonto we Sizwe, or Spear of the Nation), and the Pan-Africanist Congress (PAC, the forces of which were known as the Azanian People's Liberation Army). The KwaZulu Self-Protection Forces (KZSPF) were also accommodated, as a result of a last-minute deal to include the Inkatha Freedom Party of Dr. Mangosuthu Buthelezi in the 1994 elections. The numbers involved are given in Table 1. It should be noted that only around fourteen thousand of the nonstatutory forces of the ANC and PAC presented themselves for integration.

Table 1
SANDF Integration

SADF	110,000
TBVC States	6,000
ANC	26,000
APLA (PAC)	6,000
KZSPF	2,000

Structural Defence Transformation. In times of constitutional change, the structures of government, including those pertaining to defence and security, have to be altered to reflect the new decision-making process, especially if they are to become democratic. In the wake of the formulation of South Africa's interim constitution, the ensuing democratic elections, and the formation of the new government, therefore, the immediate task was to address "the imperatives of transformation, namely, integration and rationalisation."[1] This also had to take into account the future structure of the central organisation of defence, its relationship to the democratically elected government and parliament, and a "continued and drastically reduced defence budget with the concomitant attenuation of its force structure."[2] The first fruits of these organisational endeavours by the SANDF under the new minister of defence and in association with other government departments were detailed in the 1994–1995 annual financial report of the Ministry of Defence, appropriately titled *The National Defence Force in Transition.*

One focus of the structural changes was that of the central organisation of defence—that is, the Ministry of Defence and the SANDF. These structural changes, approved by a Ministry of Defence steering committee, came into effect in March 1995. The outcome of these changes was considered a "balanced" structure. It was to be headed by the minister of defence, assisted by a deputy minister, who would exercise overall responsibility. The ministry itself was to encompass both the SANDF and the new civilian Defence Secretariat. The "balanced model" of the Department of Defence was essentially a bicephalous

structure, with the armed forces (military) on the one hand and the Secretariat (civilian) on the other. The arrangement marked a radical departure from the past, when a civilian minister (often with prior military experience) had headed a ministry that was totally dominated by the military, had no civilian representation or involvement of any consequence, and was subject to virtually no effective system of financial or policy accountability.

The new structure therefore clearly accommodated the need for a strengthened civilian input and checks on military influence. This was the objective and thinking behind the creation of a new post, that of a civilian defence secretary.[3] The person holding this position would also serve as the Ministry of Defence's accounting officer; be the principal adviser to the minister on matters of defence policy; and be responsible for a 650-strong Ministry of Defence civilian bureaucracy and administration as well as for the efficient management of the ministry as a whole. Nearly four years after the democratic elections of April 1994 this balanced model appears to be a success, though many defence force members apparently share a sentiment that there is a lack of understanding in the Secretariat of military matters, given that the policy posts are filled by civilians.[4]

On professional matters of doctrine and strategy, the Chief of the National Defence Force (CNDF) serves as the Chief of National Defence Headquarters within a Department of Defence. The responsibility of the CNDF is to exercise overall command of the nation's forces; tender advice to the defence minister and president on matters of military strategy and doctrine, resource allocation, programmes, and commitments; and also to plan, direct, and conduct military operations. Of particular significance is the CNDF's role in respect of the four branches of the South African armed services—and of their collective need to prioritise future equipment and resource requirements in order to fulfill the policies and functions defined by the ministry and by the strategies and doctrines formulated within the military.

Finally, effectively joining the two main arms of this structure is a third element, the Armaments Corporation of South Africa, Limited, or Armscor—the government armament procurement agency. It serves as the procurement executive for the armed services, but under the control of the minister and deputy minister of defence.

Political Control of Defence. In parallel with, but seemingly independent of, these inter- and intradepartmental and ministry discussions and structural alterations, a second process was in train during the defence transformation. The political requirement of the Government of National Unity (GNU)—to be in existence for a maximum of five years from the 1994 elections—and its parliamentary representatives was to ensure greater transparency and accountability in all matters pertaining to defence and security. This was not merely a matter of democratic principle; it was an essential requirement for

those who in the past had been subjected to a defence and security system that had been summary in its dealings with the population, largely unaccountable for its actions, and had regularly asked for, and received, significant sums of money. The SANDF, even in time of transition, would not be trusted in the absence of strong checks and balances.

Two other reasons made democratic accountability and transparency in defence imperative. The first stemmed from the traditions and practices of the African National Congress, which formed the majority party in the GNU. Under apartheid, when it had acted in both political and military opposition to the former South African government and the SADF, the ANC and its nonstatutory forces operated largely according to open, democratic processes and consultation when deciding policy, strategy, and courses of action. These were, in a manner of speaking, integral to its customary practice; anything else would be both alien and unacceptable. Thus the ANC promoted within the new South African government and parliament processes that would open up issues of defence and security. Some were incorporated in the interim constitution, whilst others would have to be established as a result of experience and precedent.

The other reason, less obvious but nevertheless present, stemmed from a natural tendency among those who have been denied power and influence and then gain it, to exercise it—for whatever motive—as widely and extensively as possible. Parliamentary committee review procedures and open consultative processes serve these personal agendas. Two parliamentary committees concerned with legislative oversight of defence were established in 1994: the Senate Select Committee on Defence, Safety, and Correctional Services, and the National Assembly Portfolio Committee on Defence. Both have "customary" powers, in that they were created from within each chamber, there being no provision in the constitution for their existence. They are also "portfolio" committees, in that they consider legislation governing defence issues and the defence budget, and pilot it through their respective chambers.

These restrictions do not apply, however, to the larger Parliamentary Joint Standing Committee on Defence (JSCD). Provision for the JSCD was made through Article 228(3) of the interim constitution. The powers of the committee are extensive: it has competence to "investigate and make recommendations regarding the budget, functioning, organisation, armaments, policy, morale and state of preparedness of the SANDF and to perform such functions relating to parliamentary supervision of the Force as may be prescribed by law."[5] This is retained in the final South African constitution (which was signed in May 1997).

The power of the JSCD extends further, for when Parliament is in recess it is to the committee that the president has to account in the event that forces of the SANDF are employed for purposes or on operations associated with the terms of Article 227(1) (listed below) of the interim constitution. Today the JSCD's membership of forty, drawn from the National Assembly and the National

Council of Provinces (formerly the Senate), includes members of all political parties holding more than ten seats in the National Assembly. The driving issue behind the establishment of the JSCD was the integration of the armed forces. When this became a matter of dispute, the JSCD became involved, requested reports on progress, demanded the right of access to the armed services, and made recommendations.

During its relatively brief existence, the JSCD has concentrated first of all on the integration of nonstatutory forces into the SANDF and then on the South African Navy's request for four corvettes. Both were issues that exercised the committee, the former because it was directly relevant to the wider issue of racial integration and harmony, the latter because it recalled in its members' eyes the processes of the past, when there had been no public discussion on major items of procurement and public expenditure. The JSCD needed to raise the question of the weapons demands of South Africa's armed services, the relevance of these requirements in the light of security and other socioeconomic priorities, and the particular specifications of the proposed equipment.

Since its creation, the JSCD has developed its powers considerably. This has been the result of both improved knowledge of defence matters among its members (few of whom have experience in this field) and greater contact between the defence force and the committee. Through the minister, members of the JSCD are briefed on defence matters. By 1997, on the completion of the Defence Review force design process, there were four JSCD subcommittees: on transformation, civic education, language policy, and the defence industry. Specialists are called in as needed to brief members on these and related issues.

A further committee of potential importance in the context of both transparency and legislative defence oversight is the National Conventional Arms Control Committee (NCACC) of the Cabinet. Its terms of reference are, first, to process arms export licences to ensure compliance with government guidelines and international treaty obligations; and second, to propose policy on the acquisition of weapons and military equipment for the South African armed services and the arms trade in general. Any major acquisition of weapons from an overseas supplier would be referred to this committee for approval.

Future Roles and New Equipment Purchases

In terms of the constitution itself, the "primary objective of the defence force is to defend and protect the Republic, its territorial integrity and its people in accordance with the Constitution and the principles of international law regulating the use of force."[6]

Constitutional Obligations. According to the constitution, the defence forces exist:

(a) For service in the defence of the Republic, for the protection of its sovereignty and territorial integrity;

(b) For service in compliance with the international obligations of the Republic with regard to international bodies and other states;

(c) For service in the preservation of life, health or property;

(d) For service in the provision or maintenance of essential services;

(e) For service in the upholding of law and order in the Republic in co-operation with the South African Police Services under circumstances set out in a law where the said Police Service is unable to maintain law and order on its own; and

(f) For service in support of any department of state for the purpose of socio-economic upliftment.[7]

The 1996 defence white paper "Defence in a Democracy" fleshes out, inter alia, the challenges of transformation, the role of defence forces, the nature of the strategic environment facing South Africa, human resource issues, policy relating to arms control and the defence industry, and the organisation of civil-military relations in the new South Africa.[8] The white paper notes that

> the ending of apartheid and the establishment of democracy have given rise to the dramatic changes in the external strategic environment from the perspective of South Africa. The country is no longer isolated internationally. It has been welcomed into many international organisations, most importantly the United Nations (UN), the Organisation of African Unity (OAU) and the Southern African Development Community (SADC). South Africa is in fact expected to play an active role in these forums, especially with regard to peace and security in Africa and in Southern Africa in particular. There are expectations that South Africa will become involved in peace-support operations on the continent. South Africa does not now, and will not in the future, have aggressive intentions towards any state. It is not confronted by an immediate conventional military threat, and does not anticipate external military aggression in the short to medium term (+/- 5 years). . . .
>
> The absence of a foreseeable conventional military threat provides considerable space to rationalise, redesign and "rightsize" the SANDF. The details of this process will be spelt out in the Defence Review.[9]

The white paper notes that "the size, design, structure and budget of the SANDF will therefore be determined mainly by its primary function," although provisions will have also "to be made for the special requirements of internal deployment and international peace operations."[10] As a result, the SANDF is to maintain a core defence capability, with the ability both to deal with small-scale contingencies and to expand in size should the situation warrant it. This includes the maintenance and, where appropriate, the adequate upgrading or replacement of military equipment. Indeed, the constitution notes that the

SANDF "should be established in a manner that it will provide a balanced, modern and technologically advanced military force."[11]

In the absence of a conventional military threat, the SANDF is thus to comprise a relatively small regular force and a "sufficiently" large part-time force. The white paper also notes that employment of the SANDF in support of the police is likely to persist, "because of ongoing public violence and the relative shortage of police personnel."[12]

The Defence Review of 1997, as approved by Parliament, proposed a SANDF force design as given in Table 2.[13]

Internal Security Functions. It is generally expected that any government's most fundamental duty is to provide for the security of its citizens. So-called "winning" nations are expected to display incremental improvements in meeting these basic needs, including economic prosperity, welfare, and the provision of individual security. In turn, the state should maintain a monopoly on coercive power in that society.

However, for South Africa, internal security, stability, and individual security are some way off. Indeed, the media both within and outside South Africa paint a picture of a worsening rather than an improving internal security situation, specifically with regard to criminal rather than political violence, and related to this, the government's ability to police effectively.

South Africa now leads the field of available comparative international measures of citizens murdered: in 1996, there were 61.1 murders per hundred thousand people of the population (about seven times the rate in the United States) and 119.5 rapes. Although the rates of most categories of crime went down between 1995 and 1997 (see Table 3), there is also evidence from victim studies of a decrease in crimes where reportage is not required for insurance claims. The public has responded to this increase in crime in a number of ways. Some people have simply voted with their feet and emigrated; during the first six months of 1996 the number of emigrants (7,811) was nearly double the number of immigrants (4,063). Others have armed themselves; some 4.1 million gun licenses have been issued by the state, more than 195,000 in 1996 alone.

Other responses have included a rise in vigilantism; calls for the reimposition of the death sentence; increasing use of private security forces (there are around 140,000 registered guards in South Africa today); and calls for the involvement of the SANDF in combatting crime, particularly in the absence of a conventional military threat. Indeed, in February 1997 the minister of defence, Dr. Dullah Omar, proclaimed his support for the deployment of the SANDF in the fight against crime.

New Purchases. Following preliminary approval of recommendations in the 1997 Defence Review regarding force structure and equipment requirements, a

Table 2
SANDF Force Design

Personnel	
Full-Time Force (FTF)	22,000
Part-Time Force (PTF)	69,400
SA Army	
Mobile Division	1
Mechanised Brigade (RDF)	1
Parachute Brigade	1
Special Forces Brigade	1
Group HQ	27
Light Infantry Battalions	14
Territorial/Motorised Infantry Batts.	12
Area Protection Units	183
SA Air Force	
Light Fighters	16
Medium Fighters	32
Light Reconnaissance Aircraft	16
Medium Signals Intel. Aircraft	--
Long-Range Recon Aircraft	6
Medium-Range Recon Aircraft	--
Short-Range Recon Aircraft	10
Remotely Piloted Squadrons	1
Combat Support Helicopters	12
Maritime Helicopters	5
Transport Helicopters	96
Transport Aircraft	44
VIP Aircraft	9
In-Flight Refuelling/Electronic Warfare Aircraft	5
Voluntary Squadrons (part-time reservist)	9
Radar Squadrons	3.5
Point Defence Squadrons	--
Mobile Ground Signals Intel. Team	3
SA Navy	
Submarines	4
Corvettes	4
Strike Craft	6
Combat Support Ships	1
Minesweeper/Hunters	8
Inshore Patrol Vessels	2
Harbour Patrol	39
SA Medical Services	
CB Defensive Programmes	1
Medical Battalion Groups (FTF)	1
Medical Battalion Groups (PTF)	1.5

Table 3
National Crime Statistics
(per 100,000 population)

	1995	1996
Fraud	147.9	147.3
Rape	115.2	119.5
Serious Assault	535.8	545.6
Robbery	99.1	122.0
Illegal Firearm Possession	28.8	30.5
Murder	64.6	61.1
Vehicle Theft	245.0	229.0
Drug-related Crime	98.9	92.9
Attempted Murder	64.3	67.5

Source: *Star* (South Africa), 10 March 1997

Request for Information (RFI) was issued in September 1997 for U.S. $3 billion worth of equipment for the SANDF. It had become clear that if the SANDF was to be able to undertake its constitutional obligations, additional equipment had to be acquired. As noted, however, and in contrast with the past, when defence procurements were largely decided by bargaining between service chiefs, these requirements were for the first time the product of a process overseen by parliamentary control and open to public scrutiny.

The items required in terms of the Defence Review are: four new corvettes (with helicopters) and four submarines for the navy; sixty light utility helicopters (to replace the Alouette IIIs in service); fifty main battle tanks (reduced from 108 due to financial restraints); and forty-eight jet fighters (to replace with a single type the Mirages, Cheetahs, and Impalas in service).

At the close of the deadline of the RFI on 31 October 1997, nine countries had put forward bids: Britain, France, Germany, Spain, Canada, Sweden, Russia, Italy, and the Czech Republic.[14] The items were bid on by some firms as packages, but each bidder was to prepare for Armscor individual item proposals. Important aspects of the RFI were industrial participation or "offsets"* (separated into defence industrial participation, managed by the defence industry, and nonmilitary participation, managed by the Department of Trade and Industry) and "soft" (concessionary) financing arrangements. South Africa is seeking up to 100 percent (and more) offsets, including technology transfer and socio-

* *Offset:* "a collective term for various industrial and commercial concessions extracted from sellers by foreign governments or firms as conditions for purchasing military exports" (Dennis B. Wilson, "Balancing Efficiency with Equity in Foreign Defense Acquisitions," *Naval War College Review*, Spring 1995, esp. pp. 68–9 and nn. 1, 2).

economic projects, as well as grace periods for repayment (to start only in 2001) and favourable loan terms.[15] From the initial bids, companies were shortlisted for each of the different categories of equipment required and, in December 1997, were notified of the impending Request for Quotation (RFQ) deadline of May 1998. Since that time, the LIFT (lead-in fighter trainer aircraft) project has been added to the packages, and the U.K., Italy, Russia together with Italy, and the Czech Republic have been invited to submit their best and final offers by 15 June 1998.

Each item has been ranked by the Department of Defence according to its military value, by the Department of Trade and Industry according to offset content, and by the Department of Finance with respect to financing aspects. The Cabinet is expected to give its answer in the second half of 1998. This decision may well include a proviso that the procurement be staggered over a number of years, or that only certain types of equipment with a high priority be purchased now and that nonessential items (such as, as some have argued, the tanks) be delayed.[16]

Problems Facing the SANDF

The South African National Defence Force now faces challenges in a striking variety of areas. Two of them are familiar to medium and larger naval powers around the world—funding cuts, and the competing demands of combat readiness and peace operations. Others, however, are specific to the circumstances in which the Republic of South Africa now finds itself: increased demands from the constitutional military obligation to assist in dealing with domestic crime and unrest, the uncertain future of the state defence-industrial organization, and the question of whether and how to establish naval ties with African and Indian Ocean nations. Not only will each of these problems be difficult to manage in the coming months and years, but each will establish the future character of the South African armed forces in some vital way. Collectively, their outcomes will clearly be of fundamental, defining importance. Thus the SANDF today faces stakes and uncertainties remarkable even in an era marked by rapid reorientation of national militaries.

Funding. In South Africa, the defence budget has dropped from 4.5 percent of gross domestic product (GDP) in 1989–1990 (U.S. $4.9 billion in 1997 values) to 1.6 percent in 1997–1998 (U.S. $2 billion). As defence budgets shrink worldwide, much of the brunt of this reduction has fallen on equipment procurement rather than personnel and operational costs (P&O). In the same period, the capital project share of the SANDF's budget relative to P&O costs has fallen from 43 percent in 1989–1990 to 14 percent in 1997–1998 (see tables 4 and 5). Yet inevitably there are longer-term equipment and personnel costs

attached to this cost-cutting strategy. The South African Navy (SAN) provides an example of what might happen if further funds are not allocated to equipment purchases.

Table 4
Defense Budget 1989–1990 to 1997–1998: Nominal Comparison
(constant U.S. dollars, millions)

1989–1990		1997–1998
391 (18%)	**Personnel**	889 (45%)
837 (39%)	**Operating**	825 (41%)
910 (43%)	**Capital**	282 (14%)
2,138.3	**Total**	1,995.6

Table 5
Defence Budget 1989–1990 to 1997–1998: Real Comparison
(U.S. dollars, millions)

1989–1990		1997–1998
891.3 (18%)	**Personnel**	889 (45%)
1905.6 (39%)	**Operating**	825 (41%)
2071.2 (43%)	**Capital**	282 (14%)
4,868.1	**Total**	1,996

The SAN's share of total defence expenditure has now shrunk to around 9 percent (from roughly 20 percent in the early 1970s). This is the result of years of budget neglect. The land and air forces' domination of the budget stems from the needs of the border wars of the 1970s and 1980s; hence the present lack of both surface vessels and submarines. Currently, the SAN has no blue-water surface combat capability; its high seas coverage is limited to its two combat-support vessels, the SAS *Drakensberg* and the SAS *Outeniqua*, plus one (at any given time) of its three *Daphne*-class submarines. Maritime patrols are currently undertaken by a modified turboprop version of the venerable DC-3 Dakota, and Puma helicopters are utilised in the air-to-ship role. The Navy's nine *Warrior*- class strike craft will all need replacement shortly after the turn of the century; despite upgrading, the weapon systems of these vessels are of the "fire and die" variety.[17] It is notable that even if the Navy were to acquire both submarines and corvettes, its total budget share would rise to no more than 15 percent and its capital equipment share from 6 percent to around 25 percent.

The manner in which the overall budget is apportioned has also affected capabilities. As noted earlier, the ratio of capital expenditure to personnel and operating costs has declined, from 43 percent in 1989–1990 to 14 percent today. In nominal terms, the SAN's expenditure breakdown from 1989–1990 to 1996–1997 has altered as indicated in Table 6. However, in the face of pressing

social demands, it is unlikely that the South African public will stand for an increased overall budget allocation. Indeed, the SANDF is already bracing itself for a probable cut of a further U.S. $100 million for 1998–1999. This might compromise the reequipment plan, and the uncertainty created through defence budget cuts is even now causing a hemorrhage of technical and other middle-ranking personnel, making it difficult to bring new equipment into service anyway.[18]

Table 6
South African Navy Expenditures: Nominal Comparison
(constant U.S. dollars, millions)

	Personnel	Operating	Capital
1989–1990	57.5	32.5	38.3 (29.87%)
1996–1997	96.5	93.6	18.3 (8.8%)

The needs of the Navy—as well as of the other service arms—will thus probably have to be funded from within the current budget. As the SANDF reduces its forces from the current strength of 95,545 (including 21,119 civilians) to 70,000 (including a roughly 25 percent civilian component) by 2001, there will be a need to examine force design and infrastructure critically to see, in the words of one service chief, "what goes in and what comes out of the tap."[19] This will possibly mean that the bulky and expensive army headquarters, in particular, will come under close scrutiny. Currently the Army receives around 40 percent of the defence budget. An amount of three times the Navy's entire annual budget is allocated to maintaining Army Headquarters and the nine army command headquarters.[20]

The budget situation may also affect the SANDF's internal role. The SA Army has recently warned that it may soon be forced to suspend operations in support of the police due to a lack of funds. Following severe budget cuts, the Army has considered recently the discharge of seven thousand short-service personnel, who form the bulk of deployable peacetime forces.[21]

Even by post–Cold War international standards, the envisaged overall 30 percent cut in manpower is severe and could have repercussions for the morale and operational abilities of the SANDF. There are, as a result, a number of key questions that will have to be addressed by policy makers in the course of devising a personnel strategy for the SANDF. First, in terms of South Africa's Defence Review the ratio of personnel expenditure to operational and capital outlay should be 40:30:30, with twenty-two thousand fighting troops. It is currently debated whether this is a realistic strategy in terms of international practice and South Africa's own personnel and financial limitations. Put another way, it is unclear what the optimum "quality-quantity" curve for developing nations like South Africa should be. Given the sharpness of the retrenchments

and reductions needed to "rightsize" the SANDF, it is also unclear whether there are comparable international examples that can be learnt from.[22] Second, it is uncertain how South Africa's demographic realities will impact on the balance between a technologically advanced SANDF (which is a constitutional obligation) and the need to provide greater employment in a country where there is already 35 percent unemployment and even what South Africans term "jobless growth." What, it has been asked, is the optimum relationship between the provision of training services and the need to ensure a military return on personnel investment? Third, the optimum civilian-military breakdown within SANDF is also a matter of speculation, including the extent to which the SANDF should outsource its support services.[23]

A Controversial Internal Role? Unsurprisingly, the issue of military involvement in crime prevention has been a contentious one. Many senior officers are unhappy with such a role, arguing that pulling the armed services into an internal policing role would blunt their military effectiveness and warfighting capabilities. Public perceptions of the internal deployment of the military, however, are generally positive.

Major General F. du Toit (Deputy Chief of Staff of Operations) has argued in this regard that if South Africa is to achieve a condition of internal security and stability, a two-pronged approach is required. First, there is a need for social upliftment in pursuance of social justice, economic development, and democracy. Second, there is a need to employ all the means at the disposal of the government (not simply the military on its own) and of the private sector to combat the threats that are destabilising South African society.[24]

The Army has approximately eight thousand soldiers deployed countrywide on tasks that include vehicle and foot patrols along vulnerable border areas and in township flash points; the protection of remote farms; vehicle checkpoints; and joint action with the South African Police Services (SAPS). During 1996, the Air Force flew 1,737 sorties to combat crime; it spent 3,339 hours patrolling the country's borders, and 564 more helping the SAN patrol the coastline. The SAN spent 939 hours patrolling the coast, during which it assisted in the inspection of seventy-three ships.[25] The cost was an estimated billion rand, U.S. $170 million, out of the defence budget.

The constitution provides for the employment of the SANDF to maintain law and order in cooperation with the SAPS when the latter is unable to maintain the situation on its own. Problems here include adequate training and equipment for the armed forces in this role, the potential undermining of the image and legitimacy of the SANDF, and the burden that this task places on an already stretched defence budget.

In summary, the SANDF will have to prioritise those areas of criminal policing in which it becomes involved and which, as General du Toit puts it,

constitute a threat to the constitutional nature of the state. It would have to concentrate on serious crime, particularly the proliferation of illegal weapons and offenses (such as car hijackings) requiring air support in response; border security problems, including the influx of illegal immigrants across South Africa's borders; stock theft and attacks on farms; all forms of smuggling, including drugs and weapons; the expansion of paramilitary forces; violent political unrest; and threats to the environment, especially marine resources.

A Future for the Defence Industry? Inasmuch as the SANDF is the South African armaments industry's largest client, the defence budget issue raises the question of what might happen in the near future to that industry—specifically to the procurement agency, Armscor, and the state industrial wing, known as Denel (an acronym of "detonics" and "electronics"), created from Armscor on 1 April 1992. The industry's future is caught up in its past (it was once a leading "sanctions buster," heavily involved in the protection of the apartheid regime) and also with current government policy—which has to balance the demands of a moral commitment to the upholding of human rights with those of domestic economic growth and employment. With an estimated eight hundred corporations employing some fifty thousand people (down from 160,000 in the late 1980s), the South African arms industry accounts for 1.2 percent of gross domestic product and about 5 percent of national manufacturing output.

It was to address this policy balance that the government established, as noted, the National Conventional Arms Control Committee, which reviews applications to market weapons and also applications to export them (for instance, a controversial proposal to sell arms to Syria and Saudi Arabia). Between 1 April 1994 and 9 February 1998, South Africa sold arms worth R3,253 billion to 110 countries. India was the country's single biggest arms client, with purchases worth R637 million over this period. This does not reflect current deals, which include: the U.S. $460 million sale to Malaysia of Rooivalk attack helicopters (which may now well be canceled or postponed, given Malaysia's current economic woes);[26] and the U.S. $30 million contract for the supply of remote-controlled pilotless drones to Algeria, announced in January 1998.[27]

Despite increasing commercialisation, Denel's survival hinges increasingly on its ability to export, and its best sales lie in offensive weapons. South Africa's international isolation effectively created an indigenous capability to produce weapons that in some cases—such as the Rooivalks and the G-5/G-6 howitzers—are leaders in their class.[28] In 1992–1993 Denel's sales to the South African security forces (including the Police Services) amounted to 63 percent of its income, with 17 percent from exports (despite international sanctions) and 11 percent from commercial operations. By 1995–1996 this had shifted to 45 percent from the South African security forces, 30 percent from exports, and 17 percent from commercial operations.[29] Sales to the security forces were worth

U.S. $320 million in 1995–1996, as against U.S. $800 million in 1989.[30] Exports were mainly artillery, avionics, fuses, and anti-landmine technology.[31]

As a result of the continuing fall in the South African defence budget and the consequent change in ratio of personnel and operating expenditure to capital outlay, Denel has signalled an intention to increase its global market share from its current level (under 1 percent) to 2 percent, raising its value to roughly U.S. $500 million and creating fifty thousand new jobs. The corporation has opened offices in Paris, Abu Dhabi, Tel Aviv, Moscow, Kuala Lumpur, Beijing, and New York. In this effort the government will face pressure from human rights lobbyists, though this is expected to be offset by the support of the populace in view of the likely economic benefits.[32] In a recent South African foreign policy survey, 52 percent of respondents were of the opinion that South Africa should sell arms under strict conditions, 38 percent were against the country selling arms at all, and 9 percent said that South Africa should sell arms to anyone who can pay.[33]

Peace Support Operations. Interestingly, 83 percent polled in the recent survey were in favour of South Africa being seen as helping the United Nations in its peacekeeping activities. South Africa's armed services are likely, in fact, to increase the scale and scope of that role. Although there are currently no external conventional military threats to South Africa, it may be expected that the Republic will increasingly be willing to participate in peace support operations, particularly in Africa. This is acknowledged in the defence white paper, which notes that "as a fully fledged member of the international community, South Africa will fulfill its responsibility to participate in international peace-support operations."[34]

South Africa's willingness to take up this task has been highlighted by the trend in African states to take a more active role in determining their own fates—what South Africa's deputy president Thabo Mbeki has described as an "African renaissance"—and a decreasing interest on the part of the Western community (since Somalia) to become involved in peacekeeping in Africa.[35]

As a result, the idea of a pan-African force has become, in the space of the past twelve months, both more acceptable and more necessary. At one level this has found expression in the American-led proposals for an African Crisis Response Initiative (ACRI), under which a ten-thousand-strong eight-battalion force is envisaged. Despite French reservations, the G-7 nations agreed at the Denver summit in June 1997 to support the ACRI. South Africa has responded coolly to the U.S. proposal, given concerns over leadership and control of the force as well as the political implications of leaving African peacekeeping to Africans, in defiance of the spirit of multilateralism; however, seven African states (Ethiopia, Ghana, Senegal, Uganda, Malawi, Mali, and Tunisia) have volunteered troops to the ACRI. It is expected that around four hundred U.S.

instructors will be involved in training next year. In late May 1997, 120 soldiers, mainly from the U.S. Army's Third Special Forces Group at Fort Bragg, North Carolina, arrived in Uganda and Senegal to start training 750 soldiers from each state.[36]

South Africa (like Nigeria) is not expected to participate in the ACRI. However, the SANDF has allocated two battalions as peacekeepers, signalling a willingness to end the country's isolation in this regard. Also, in May 1997 three hundred South African soldiers participated in a groundbreaking exercise organised by the United Kingdom and Zimbabwe in eastern Zimbabwe. Code-named BLUE HUNGWE, it was the first time that South African troops had participated in a military exercise with other African states, all fellow members of the fourteen-nation Southern African Development Community (SADC).

Currently, the South African government is drafting its policy paper on peace support operations. Unsurprisingly, two critical questions arise. When should South Africa become involved in peace support operations? How should it engage?

A too-easy answer to the first question would be, "When South Africa's national interests are threatened." But that provides little guidance in an era when the division between the substance and process of foreign policy and diplomacy is barely discernible; in other words, "how to do it" may in practice largely determine "what to do." Also, if South Africa is to become involved in areas that affect its (broadly defined) national interest, as outlined above, then it could find itself enmeshed in virtually every African conflict. There is little doubt that South Africa's national interests are served by the currently improving international impression of Africa, created in part by continental attempts to come to grips with its own problems.

However, there are both resource and political limitations on South (and southern) Africa's ability to engage with every continental conflict situation. The need for South Africa to pick its times and places carefully before involving itself in peace support operations (whether at the level of humanitarian assistance or that of the full spectrum of peace support operations) is highlighted by sensitivity over a perceived South African hegemony in Africa, a high-profile diplomatic role that is not always backed up by results—as in President Nelson Mandela's largely unsuccessful attempt in April 1997 to engineer a solution to the Zairian impasse aboard the SAS *Outeniqua* off the coast of Congo-Brazzaville.

It may be expected, however, that South African involvement in peace support operations will precede the operationalisation of the Southern African Development Community's security arm, the Organ on Politics, Defence and Security, which was created in 1996. The Organ has been beset by internecine difficulties, making its goal of a regional peacekeeping capability under its auspices difficult to envisage at present.

Cooperation across the Indian Ocean

The mutual hemispheric concerns of South Africa's antipodean partners raise interesting collaborative possibilities. Some of these are currently being addressed through the operation of the Valdivia Group, involving other countries from the so-called "Deep South"—Argentina, Australia, Brazil, Chile, New Zealand, and Uruguay. Cooperation with like-minded states in multilateral fora could add value, a "multiplying effect," to their individual weights on issues of mutual concern.[37] Cooperation in the embryonic Indian Ocean Rim Association for Regional Cooperation (IOR-ARC) may occur around trade and investment issues (for example, in the World Trade Organisation) and maritime concerns, especially resource security, the repair and building of ships, the environment, safety at sea, piracy, pollution, and search and rescue. Indeed, given the combination of a paucity of southern African naval capabilities and the immature ties that exist in the Indian Ocean rim, joint procurement on a triangular or even quadrangular basis could be considered.[38] As the Chief of the South African Navy, Vice Admiral Robert Simpson-Anderson, has argued,

> One of the more ambitious possibilities that needs to be mooted is that of South Africa entering into shipbuilding programmes with other African countries. Besides the obvious savings brought about by quantities of scale, there are the possible longer-term savings for the region—simplifying and unifying logistics requirements, standardisation of equipment and training, and lower maintenance costs brought about by localised maintenance facilities, to name but a few. Ships built under this programme could possibly be an extension of the new corvette programme that the SA Navy is pursuing (an African version of the Anzac frigate?), or smaller craft such as a regional replacement for the Fast Attack Craft that most African navies operate. An increased, viable sea-going capability would help strengthen the navies considerably, and in turn strengthen the countries that depend so much on their maritime lines of communication.[39]

Table 7 shows how little naval capacity now exists in southern Africa.[40] Clearly the political and economic advantages of such a procurement would be greatly increased if this were truly a *joint* endeavour, involving potentially substantial offsets and job-creation schemes.[41]

Table 7
Southern African Naval Capabilities

	Personnel	Ships	Defence Budget (U.S. dollars)
Angola	2,000	2	295 million (1996)
DR Congo	-	-	est. 250 million (1997)
Mauritius	500	1	61 million (1996)
Mozambique	100	-	72 million (1996)
Namibia	100	-	73 million (1996)
Seychelles	200	-	10 million (1997)
South Africa	9,090	24	2.13 billion (1997)
Tanzania	1,000	-	89 million (1996)

* * *

South Africa, like most of the developing world, faces an environment dominated by nonconventional (nonmilitary) security challenges. These include the need to provide economic growth and socioeconomic uplift; curtail poverty and crime; deal with the environmental fallout of rapid economic and population growth and of uncontrollable urbanisation; arrest the flow of drugs, illegal migration, small arms, and the operations of crime syndicates; and to combat a growing global political unipolarism wherein changes in ways of addressing global multilateral issues—such as reform of the United Nations—are, from the viewpoint of the developing world, too often held hostage to national issues by the world's last remaining superpower, the United States.

Not surprisingly, then, question marks still exist for the role of the SANDF in a new South Africa. Is it to be principally a low-tech source of employment and training, mainly involved in internal security issues, or a high-tech deterrent against outside threat, as the constitution demands? How will it use the equipment currently destined for its branches, and will it have the skilled manpower to do so? Finally, without suggesting that the two are mutually incompatible, how will it balance its relationship with its established partners in the developed world to the north, and with its newer allies in the southern African region and elsewhere to its geographic left and right?

Notes

1. South African Ministry of Defence (SAMOD), *The National Defence Force in Transition: Annual Report Financial Year 1994–1995* (Johannesburg: 1st Military Printing Regiment, 1995). Foreword by the Minister of Defence, J. Modise, p. i. This section of the paper is based partly on research done while producing (with Martin Edmonds) *Uncharted Waters: A Review of South Africa's Naval Options* (Johannesburg: SAIIA/CDISS, 1996).
2. Ibid., foreword by Chief of the National Defence Force, General G. L. Meiring, p. 1.
3. The establishment of a civilian defence secretariat is provided for in the Constitution, Chapter 11, Article 204.

4. The defence secretary, Pierre Steyn, noted in mid-1997 that defence was in his opinion not yet under the control of civilians, as the white paper and Defence Review had not been translated into a manageable defence plan, programme, and budget for strategic decision making, performance, control, and accountability. Moreover, General Steyn noted that his dependence on military staff and the weakness of his civilian staff undermined the performance of the civilian defence secretariat. He argued that civilian control would become a reality only when the boundary between the defence secretariat and the SANDF was clearly drawn, leaving a balanced distribution of functions between the secretary and the chief of the SANDF; when the line and staff capacities of the secretariat and the SANDF were constituted with predominantly civilian and military capacities, respectively; and when separate career, management, and development systems for civilian and military functionaries under the control of the secretariat and the SANDF, respectively, had been commissioned. See *Citizen* (South Africa), 16 April 1997.

5. Republic of South Africa, *Government Gazette* (Cape Town), vol. 343, no. 15466, 28 January 1994, p. 150.

6. Chapter 11, Article 200 (2).

7. Article 227(1), Interim Constitution.

8. See *Defence in a Democracy: White Paper on National Defence for the Republic of South Africa*, May 1996. The white paper was the result of a lengthy process of consultation that began in June 1995 with the publication of a draft document (which was subject to comments and input from political parties, defence industry, analysts, members of the public, Parliament, and the JSCD) and concluded with the presentation of the final document to the Cabinet on 8 May 1996.

9. See ibid., chap. 4.

10. See ibid., chap. 5.

11. Interim Constitution, Article 226.

12. *Defence in a Democracy.*

13. Fighter, helicopter, and transport numbers do not include aircraft at flying schools, which are part of (and are costed with) the support structure. The long-range maritime patrol aircraft will, for reasons of cost, not be equipped with full surface and subsurface weapons systems, although they will be fitted to accommodate them. This will enable upgrading of combat capabilities when required. This information was supplied by the SANDF, January 1998.

14. The (rough) details of some aspects of the various bids in October 1997 were: Britain/ Sweden—JAS39 Gripen jet fighter/trainer (twelve two-seater and thirty-six single-seater), four F-3000 corvettes (with Lynx helicopters), Challenger-2 main battle tanks (MBTs), and four *Upholder* submarines; France—four *La Fayette* or *Surcouf* corvettes, two secondhand *Daphne* submarines (to supplement the SAN's current three in service) or four joint Spanish *Skorpene* submarines, Cougar maritime patrol helicopters, Eurocopter EC135 light utility helicopters, LeClerc MBTs, and Mirage 2000 or Mirage F1 jets; Germany—four Meko 200 corvettes and four 206/9/212 submarines and four 509A corvettes, plus twenty CASA military aircraft; Canada—sixty light utility Bell 425 helicopters, and *Halifax* or *Vigilant*-class frigates/patrol vessels; Italy—MB339CD jet trainers, four corvettes, and Agusta helicopters; and Russia—150 T80U MBTs, K-28/K-27 helicopters, four Kilo-class submarines, *Gepard* frigates, and 150 MiG-29 fighters. The following entries made the respective short lists: Corvettes were shortlisted from Germany (Meko 200SA), France (*La Fayette*), Spain (Project 590B), and Britain (F3000) (Italy's offer was rejected as unsuitable for South African waters). Fighters from Germany (AT2000 RSA), France (Mirage), and Sweden/Britain (Gripen) were shortlisted, though neither Britain's Hawk nor the Russian MiG-29 made the cut. (Russia's countertrade offer apparently did not meet the minimum requirements, and there were also concerns about long-term logistics reliability.) Canada's Bell, Italy's Agusta, and the French-German Eurocopter were still in the race to provide the light helicopter replacement for the Air Force's Alouettes. The French LeClerc and the British Challenger tanks were shortlisted. Italy (MB339FD), Russia/Italy (Yak-AEN 130), and the Czech Republic (Aero Vodchody L159B) were all asked to submit offers for the LIFT. See *Business Day* Johannesburg, South Africa), 7 January 1998, and http://www.sacs.org.3a/cgi-bin/vdkw_cgi/x9f2d59f3-275/search/5078180/42. U.S. companies were not invited to tender because of the criminal settlement going on at that time between Denel and the U.S. government. In February 1997, Armscor was convicted in the United States of violating U.S. arms export controls during the apartheid era. In return for Armscor agreeing to subject itself to the jurisdiction of U.S. courts and paying substantial fines, a settlement was engineered.

15. The South African government tender proposal reportedly modifies standard international military acquisition practice, wherein the purchasing country makes a 30 percent down payment upon signing the contract and then makes pro rata payments as the systems are developed, manufactured, and delivered. The minimum countertrade requirements have been increased from 55 percent to 80 percent of the value of the contract. See "No Shortage of Countries Eager for SA's R10bn Arms Deal, Despite Onerous Terms," *Sunday Independent* (South Africa), 2 November 1997. See also "Offsets Is the Name of This Bidding Game," *Business*

Day, 28 November 1997. Interestingly, the British bidders have proposed that South Africa pay for the equipment in gold. See *Business Day*, 25 June 1997.

16. For details of the nature of industrial and military participation offsets, see "New Weapons Coming into SA's Sights," *Sunday Independent*, 18 December 1997. Also, "S. Africa to Weigh Up Balance of Packages," *Jane's Defence Contracts*, October 1997. As an example, the Swedish offer involves the supply of heavy rolling stock worth up to U.S. $85 million to the South African parastatal, Transnet, to account for more than half of the civilian offset requirement. See *Business Day*, 9 January 1998.

17. For details of the SANDF's and SAN's upgrades to weapon systems, see *Jane's Defence Systems Modernisation*, June 1997.

18. See *Jane's Defence Weekly*, 10 December 1997, p. 18.

19. Interview, Robert C. Simpson-Anderson [VAdm., SAN], Pretoria, 4 March 1997.

20. The nine army headquarters grew from just four in the 1980s due to the implementation of the Botha administration's National Security Management System. See "Time Has Come to Give Navy a Fairer Slice of the Budget," *Business Day*, 15 October 1997. There are also thirty-five army group headquarters, set up in the early 1980s to provide counterinsurgency coverage.

21. *Jane's Defence Weekly*, 11 June 1997.

22. These issues are the focus of a study on *Personnel Strategies for the SANDF* being undertaken during 1998 at the South African Institute of International Affairs (SAIIA).

23. A number of the aircraft maintenance and testing functions have recently been outsourced.

24. For a detailed discussion of these issues, see Greg Mills and Mark Shaw, "Crime and Policing in Post-Apartheid South Africa," *South African Yearbook of International Affairs 1997* (Johannesburg: SAIIA, 1997), pp. 214–24.

25. See *CSANDF Internal Communication Bulletin* 3/97, 17 January 1997. Also, Major General F. du Toit, "The Role of the South African National Defence Force in Internal Security," *ISSUP* [Institute for Strategic Studies University of Pretoria] *Bulletin* 2/97.

26. In 1996 the minister in charge of the NCACC, Professor Kadar Asmal, said that trade with Iran, Kenya, and the Koreas was under review, while Afghanistan, Iraq, Libya, Nigeria, Sudan, and Zaire were blacklisted. Algeria and Malaysia are on the list of approved buyers. The deal for selling tank-firing guidance systems worth an estimated U.S. $650 million to Syria in 1997 came to naught when the United States expressed anger. The vetting process has come under considerable criticism in South Africa. For example, critics have argued that the refusal to sell howitzers and helicopters to Turkey was more on account of Ankara's record against the Kurdish group PKK (an ANC ally) than its human rights record. The on again/off again sale of weapons to Rwanda at the time of war in eastern Zaire was also criticised, as was the (pre-1994) sale of small arms to that country. The same is true for Indonesia. After his visit to Indonesia in mid-1997, President Mandela said that in spite of the East Timor controversy, Indonesia was on the approved list of client countries, though for "defensive" weapons only. See *Business Day*, 14 November 1997. As a result, parliamentary opponents have described South Africa's arms sales policy as a "drunken zig-zag." See "Arms Sales Can Hit SA's Moral Stature," *Business Day*, 24 October 1997.

27. See "Algerian Army Chief Visits SA after Deal with Denel," *Business Day*, 16 February 1998. See also, "Arms Sales Hit by Asian Crisis," *Sunday Times* (South Africa), 28 June 1998.

28. The G-5/G-6 family of 155 mm artillery systems has been widely exported. The South African Army has seventy-two G-5 and forty-three G-6 systems. Of the six members of the Gulf Cooperation Council, three use Denel artillery: Oman operates twenty-four G-6s, Qatar twelve G-5s, and the UAE seventy-eight G-6s. Denel is currently competing to meet requirements in Kuwait (for forty-eight G-5s) and Saudi Arabia (eighty G-6s). The same technology is also being marketed as a 155 mm tank turret, which India has tested on a T-72M1 chassis. See *Jane's Defence Weekly*, 10 December 1997.

29. See *F&T* [Finans and Tegnies] *Weekly*, 9 May 1997.

30. Information supplied by the South African High Commission [i.e., embassy], Canberra, December 1997. For a detailed summary of the South African armaments industry, see Ravinder Pal Singh and Pieter D. Wezeman, "South Africa's Arms Production and Exports," *SIPRI Yearbook 1995* (New York: Oxford Univ. Press), pp. 569–83.

31. See *Business Day*, 14 January 1997.

32. For a highlighting of the moral dilemmas of the South African arms trade, see "The Moral Dilemma of Frankenstein," *Business Report*, 3 September 1997.

33. See *Pretoria News*, 3 December 1997.

34. *Defence in a Democracy*, chap. 5. The white paper notes that "operations in Southern Africa should be sanctioned by SADC and should be undertaken together with other SADC states rather than conducted on a unilateral basis. Similarly, operations in Africa should be sanctioned by the Organisation of African Unity." It also notes that "South Africa's consideration of involvement in specific peace-support operations will not be limited to the possible deployment of troops. The involvement could also take the form of providing

equipment, logistical support, engineering services, communications systems and medical personnel and facilities."

35. The term "African renaissance" was first used in his speech at the U.S. Corporate Council on Africa, Chantilly, Virginia, April 1997.

36. There are doubts in South Africa as to why U.S. Special Forces have been tasked to do this, given their apparent lack of knowledge or experience of peace support operations. See in general Derek J. Christian [Capt., SAN], "The African Crisis Response Force: A Critical Issue for Africa," *Naval War College Review*, Summer 1998, pp. 70–81.

37. These issues were the subject of a conference held at the South African Institute of International Affairs with the support of the Australian High Commission and Chilean embassy, 11–12 November 1997, "Looking Sideways: The Specifics of South-South Co-operation."

38. The navies of southern Africa have already held initial talks about a joint shipbuilding programme focussing on patrol vessels to complement the planned patrol corvettes of the SAN and on smaller strike craft to replace those in service with other navies of the region. See "Southern Africa Discusses Joint Shipbuilding," *Jane's Defence Weekly*, 26 November 1997.

39. Robert C. Simpson-Anderson [VAdm., SAN], "The South African Navy as Part of the African Renaissance: Setting the Pace for the Future," paper given at a conference on "The South African Navy and African Renaissance," Simon's Town, 23 October 1997.

40. It is not clear how many of these vessels are serviceable. "Ships" are defined here as oceangoing vessels, usually over a thousand tonnes. See *The Military Balance* (London: ISS/Oxford Univ. Press) and *Jane's Fighting Ships 1997*.

41. Embryonic defence technology cooperation in the Indian Ocean region could expand upon the ties already created through the Australian Specialised Vehicle Systems, known as the Taipan, in which the South African company Reunert is a shareholder. Such collaboration might, for example, in the future link purchases of South African artillery and helicopters to wider (regional) technological and production cooperation. Wider bilateral Australian–South African defence ties could also potentially involve mine-clearance systems and peace support training.

Ψ

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Commercial Satellites
Future Threats or Allies?

Lieutenant Commander J. Todd Black, U.S. Navy

TODAY, OF THE OVER 2,400 satellites in Earth orbit, only about one hundred are operated by nongovernmental organizations or private companies.[1] That situation is changing: in the next ten years as many as a thousand more commercial communication satellites will be placed into orbit.[2] These systems will provide on-demand, worldwide telecommunications. Commercial imagery satellites are being planned and launched that provide resolutions equivalent to those of state-operated imagery satellites.[3] Restrictions on the Global Positioning System's most accurate locating information are to be removed within ten years.[4] In short, commercially available satellite products, with capabilities rivaling those of U.S. military systems, are becoming widely available to anyone who can pay for them.

As these systems mature, the U.S. military must consider how to deal with their effect. For example, commercially available satellite imagery is used in some situations by the U.S. Air Force to support tactical mission planning and battle damage assessment.[5] In fact, the United States pledged itself in its 1996 space policy statement to use commercial satellite technology to augment its own capabilities as much as possible.[6] If the U.S. military can use commercial systems to augment its capabilities, so can an adversary with access to similar systems.

The purpose of this article is to provide an overview of commercial space endeavors having military applications, address current international law regarding the military use of commercial satellite systems, and offer some options

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and general considerations regarding how the military could approach commercial space-based systems.

The Commercial Potential

Commercial satellite imagery, communication, and navigation services will have an impact on the ability of the United States to conduct military operations over the next twenty years. In order to prepare for this impact, the nation needs to consider the strategic and operational potential such systems offer an adversary, as well as how—in broad terms—the United States could resist or counter hostile exploitation of commercial space capabilities. Then, the specific measures, techniques, and tactics that would be optimal to negate a commercial system in a deteriorating international environment could be devised and implemented. But first we must be clear about "the big picture."[7]

Imagery. Satellites can collect useful images of the Earth's surface through many means, active and passive, and in much of the electromagnetic spectrum, from shorter-than-ultraviolet wavelengths through thermal infrared and reflected radar waves. Many features may be considered in characterizing the usefulness of a satellite imaging system (inclination, revisit time, spectral sensitivity, and imaging capacity, for instance), but resolution is one of the most commonly invoked. Discussions of resolution can quickly become highly complex; for present purposes, however, it can be understood as the minimum separation between two similar objects needed for an imaging system to distinguish the objects as two rather than one. Presidential Directive 23 (PDD 23), issued in 1994, states that dissemination of imagery with resolution of one meter or less might be harmful to U.S. national security.[8]

In the past, the principal consumer of high-resolution imagery has been the military. While most of that imagery has been provided by national satellite assets, commercial imagery systems are now also being used. Much has been written about the U.S. military's use of commercial imagery during the Persian Gulf War.[9] Commercial systems have also provided detailed computer maps for flight crew training for Sarajevo, Bosnia-Herzegovina.[10] Even corps-level headquarters now have the ability to produce maps locally using satellite imagery.[11]

Commercial satellite imagery providers are intent on providing the highest-resolution images that money and technology allow.[12] They are rapidly driving their systems to one-meter resolution, but the reason they need such fine resolution is unclear. A case in point is the SPOT Earth Observation System, designed by the Centre National d'Etudes Spatiales (CNES), which already advertises ten-meter resolution—though its capability has been described as "actually closer to five meters than to the declared ten."[13] CNES lists a multitude of purposes for which one might want high-resolution images, including studies

of deforestation, erosion, desertification, urban zones, and the planning of telecommunication systems.[14] When the Clinton administration announced in 1994 the easing of restrictions on the sale and export of commercial remote-sensing images, it presented a similar list of potential uses for high-resolution imagery.[15] Neither the French CNES nor the U.S. administration, however, discussed why one-meter resolution might be needed instead of the fifty-meter resolution that such systems as Landsat routinely provide. Do large-scale observations of areas for environmental study need to define individual trees to be useful? Urban planning might benefit from detailed photos, but it would be far more cost-effective to use conventional aerial methods to obtain them. Given the expense involved, there are only two reasons one might insist on high-resolution satellite photos: first, that one does not have access to the target area, and second, that one wants to obtain information without the knowledge of the area's owners. Otherwise, if traditional land-survey means are available, space-based high-resolution imagery does not make sense.

Nonetheless, as technology improves, the number of high-resolution imagery systems available increases. The resolution of systems being designed or tested today ranges between one and ten meters. The Russian KVR-1000 can provide less than five-meter resolution, while the Israeli EROS (previously a military system, now commercial) boasts a one-meter resolution in some applications.[16] Others planned for launch in the next few years will be operated by French, U.S., and Japanese companies.

With more systems becoming available that meet the U.S. definition of high-resolution, governments have begun to place controls on remote sensing. PDD 23 declares that the United States reserves the right to limit the collection and distribution of high-resolution imagery that might damage national security.[17] The directive applies to systems licensed for operation in the United States. France has taken a slightly stronger position, limiting the sale of high-resolution imagery from the French owned Helios-1 satellite to friendly governments and stipulating that the French government has the option of shutting down the system in case of a national emergency.[18] Not all nations have similar policies; for example, Israel is reportedly prepared to consider launching additional EROS-1 satellites and providing customers 100 percent control within a geographic region.[19]

Communications. Commercial communication satellite systems are the most successful space industry. The potential market is huge; investors and developers hope to open up China for mobile satellite telephone systems.[20] The U.S. military already uses leased "space" on commercial communication satellites to augment its own resources. For instance, the Leasat program leases bandwidth on a commercial system to handle low-priority communications.[21] Many U.S.

Navy warships are equipped with the Inmarsat commercial communication system, allowing voice communications nearly anywhere on the globe.[22]

The U.S. military is becoming increasingly dependent on commercial satellite communications to support operations and mission planning. For example, during the Gulf War, 20 percent of the total satellite communication capacity was obtained from commercial satellite providers.[23] More recently, commercial providers have set up secure, two-way voice and video communications in Bosnia. This experiment, called "Information Dominance for JOINT ENDEAVOR," uses a commercial broadcast satellite to provide weather, television, and imagery to field commanders. It also provides high-bandwidth, secure communications to set up an intranet (local Internet) for exchange of e-mail and video between headquarters and field commands.[24] The innovative use of commercial communication satellites has fueled the military's appetite for them. One observer noted that during the Gulf War the military was so dependent upon communication satellites that "every time a new bird [satellite] came on line, it was used up. It was an experience familiar to drivers in Los Angeles, where new highways never seem to relieve traffic congestion."[25]

The cost of deploying satellite communication systems has resulted in some interesting approaches to raising capital. At one time states pooled resources. The Inmarsat system, while commercial in nature, was initiated in 1979 by an international convention that established satellite communication operating procedures for mariners in distress. The Inmarsat Corporation is run by a council on which are representatives from the eighteen signatories having the largest investment stakes in the operation.[26]

A more recent approach is that of the Iridium communications system. Iridium is operated by a consortium of companies, including Motorola Corporation. The satellites are being launched by U.S. Delta II, Russian Proton, and Chinese Long March 2C/SD boosters.[27] Russia is also interested in a piece of the market for itself; in an attempt to attract U.S. investors, Russia is developing the Signal satellite communication system.[28]

These initiatives in worldwide satellite communication systems are being aided by relaxed national regulations. The Federal Communications Commission announced in 1997 that the United States would allow non-U.S.-licensed communication satellites to provide services in the United States, in accordance with the World Trade Organization's Agreement on Basic Telecommunications Services.[29] In order to gain access to growing markets in the United States, foreign governments are willing to allow U.S. companies to operate overseas, in exchange for reciprocity in the United States. This easing of regulations will most likely result in expanded capacity throughout the world as markets open to competition.

Navigation. The U.S. Global Positioning System (GPS) and the Russian Global Navigation System (GLONASS) have brought new meaning to the idea of

knowing one's location. GPS became "indispensable" during the Persian Gulf War, allowing the U.S. Air Force to target Iraqi facilities with high accuracy.[30] The U.S. military has made "precision engagement," using GPS, one of its guiding operational concepts.[31] GPS has also increasingly become indispensable to the commercial market. Receivers are inexpensive; users range from shipping companies to airlines.[32]

One complaint about GPS has been that unofficial users cannot receive the extremely accurate locating data available to the U.S. military. Its "Selective Availability" feature introduces an error signal to prevent them from receiving the full benefit of the system; with the error signals, commercial users receive locating data with hundred-meter accuracy instead of the sixteen-meter (or better) performance of which GPS is capable.[33]

Law and Policy

Treaty law has little to say about space. The so-called "Outer Space Treaty" of 1967 provides that weapons of mass destruction may not be placed in orbit around the Earth or on celestial bodies.[34] The agreement does not ban the military use of space. In 1979, the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies attempted to expand limitations by declaring that space was to be used for "exclusively peaceful purposes."[35] This document was approved by acclamation in the UN General Assembly, but the only major space-faring nation to sign it has been France.[36]

The other significant instrument of space law is the Convention on Registration of Objects Launched into Outer Space, which came into force in 1976.[37] This short document established a registry and requires states that launch objects into Earth orbit or beyond to provide basic information to it through the UN Secretary-General. To date, there are twenty-five signatories and forty parties to the convention, including the United States, the European Space Agency, and the European Organization for the Exploration of Meteorological Satellites.[38]

Overflight by satellite systems, particularly imagery systems, has an interesting history in international law. As attempts to control the use and spread of nuclear weapons grew in the 1960s and 1970s, overflight by imagery satellites was considered necessary to verify treaties. The term "national technical means" and pledges not to interfere with them were included in such arms control agreements as the Anti-Ballistic Missile Treaty.

Commercial access to satellite images, however, was more complicated. During the Cold War, the Western nations argued that free access to and distribution of images from remote-sensing satellites should be allowed for all countries. The Soviet Union argued that this should be allowed only with the consent of the overflown country. By the mid 1980s, consensus had been

reached that collection and distribution of remote imagery should not be restricted but that "sensed" nations should be guaranteed access.[39]

With improvements in the resolution of commercially available imagery, the line between remote sensing for economic and resource-management purposes and high-resolution imagery for military ends has blurred. It is unclear where the law is tending on the topic. As mentioned, some states are attempting to legislate controls on companies involved in imagery, but there is no unanimity.

Another legal problem is that there is no agreement on the definition of "space," at least with respect to where it begins. None of the treaties mentioned above defines it; space appears to be one of those concepts that everyone knows when they see it but none can characterize precisely. Not even the U.S. military can define space: the Department of Defense Joint Dictionary does not even attempt to do so.[40]

One treaty has tried to be specific in other ways, namely how space is to be used. The Inmarsat Treaty, which establishes the international corporation operating the Inmarsat system, provides that its governing organization is to act "exclusively for peaceful purposes."[41] The Inmarsat satellite system started service in 1982; over the years, it has become a prototype for worldwide telecommunications systems. It has been conspicuous in military operations, such as the Falklands War, though some believed that the Inmarsat convention was violated during those operations.[42] The Inmarsat governing organization commented on the matter in 1988:

> Looking at the ordinary meaning of the words "exclusively for peaceful purposes," . . . [Inmarsat] took the view that "peaceful purposes" are those which do not relate to armed conflict, acknowledging that "military uses" *per se* are not incompatible with peaceful purposes, but excluding uses in armed conflict or for self-defense pursuant to the UN Charter, Article 51, even though such uses may be deemed "non-aggressive."[43]

Despite this interpretation, Inmarsat's governing body did not attempt to deny military access to the system during the Persian Gulf War or during UN operations in Somalia and the former Yugoslavia. As a result, a former general counsel for Inmarsat has concluded that

> use of Inmarsat by armed forces (military use) not involved in armed conflict or any threat to or breach of the peace is consistent with [the Inmarsat] Convention, Article 3(3). Use of Inmarsat by UN peacekeeping or peacemaking forces acting under the auspices of the UN in implementation of a UN Security Council decision in order to maintain or restore international peace and security may be construed as consistent with Convention, Article 3(3), irrespective of such UN forces becoming involved in armed conflict in the accomplishment of their UN

> mission. Involvement in armed conflict is a possibility implicit in the maintenance or restoration of international peace and security by UN forces.[44]

Although this interpretation applies specifically to the Inmarsat system, it is possible that this logic will be applied to future concerns over military use of commercial satellite systems, and to the Outer Space Treaty.

As regards policy, the United States has been cautious. PDD 23, which placed limits on dissemination of high-resolution imagery from commercial sources, was eventually incorporated into law, in the 1992 Landsat Act. In 1997 the United States promulgated a national space policy; although parts are classified, it provides for "separate national security and civil space systems *where differing needs dictate.*"[45] The Department of Defense was appointed the lead agency to coordinate government space activities and to coordinate with commercial providers. The Defense Department was also tasked to ensure that a hostile force cannot frustrate U.S. use of space and that the United States can counter space systems used for hostile purposes.[46]

Space is still a generally unregulated area. Little agreement has been reached on just what space is, how it can and cannot be used, and who will enforce whatever law exists. Real regulation of space use is just now emerging at the national level. As long as the future is to be driven by the technology of commercial satellites, conflicts over access rights, overflights, and military uses are sure to continue.

Approaches

There are essentially three ways, from the military point of view, to deal with commercial satellites. They have been articulated in the debate over commercial imagery satellites, but the options apply to communication and navigation systems as well: "to promote the free flow of information; to attempt to negotiate agreed restraints; or to take direct countermeasures against satellites or their data-gathering."[47] Along with these three approaches are a number of other factors and considerations.

The Free Flow, or Free Market, Approach: The free market approach—to let sellers and buyers determine capabilities and access—is the option that the commercial satellite communications and navigation industries have taken. As noted earlier, the Federal Communications Commission recently opened U.S. mobile satellite communications to foreign competitors, provided they abide by World Trade Organization standards. The hope is that American firms will be able to gain greater market share overseas.

This general approach certainly results in a proliferation of systems available to the consumer and the military, which should thus be able to continue

contracting for the communication capacity it needs. However, while the allure of additional bandwidth is considerable, there is no guarantee that the U.S. military will be able to use a system as it desires. For example, Iridium does not have the ability to provide priority service;[48] in other words, it operates on a first-come, first-serve basis. If the U.S. military were to rely on such a system during a crisis, it might find itself competing with CNN or even its adversary for use of the limited number of access channels. Market forces will probably drive providers to ensure all subscribers to a system have an equal chance at access. Giving priority service to any one subscriber, even if that user can pay for the luxury, would drive other customers away. Businesses would be reluctant to pay for a service that could be withdrawn at any moment in favor of a military client.

On the other hand, free access to the GPS system is now a given; if one has the appropriate receiver, one can obtain the locating data. In 1996 the Clinton administration announced its intention to discontinue Selective Availability by 2006.[49] This would allow anyone to obtain the very accurate locating information presently provided only to the military and certain other authorized users.

Of course, the free market encompasses a classic mechanism for restricting access to goods: that is, price. The U.S. government pays for the Global Positioning System and, having provided the data without charge up to now, enjoys a total command of the market; as a monopolist it could charge for the service and set rates high, or limit access to exclude rogue nations and nonstate actors. This is only a theoretical option, however; it is hard to imagine the United States cutting off free GPS operation. In any case, how could the United States assess charges, especially for ships, airliners, and even personal automobiles that have receivers (themselves inexpensive) already installed? It may be too late; the Western world is already addicted to Global Positioning, and the United States may have no choice but to keep it a no-charge proposition.

Free market imagery is a much more complex subject. While nations such as the United States and France agree that controls are needed on high-resolution images, the problem has been complicated by private high-resolution imagery satellites. For example, the SPOT imagery system was developed with not only French but also Swedish and Belgian capital.[50] Who owns it? Similarly, the stocks of the multinational corporations developing Iridium, for example, are widely traded, and the system's satellites have been launched from three different countries. The market has led satellite system entrepreneurs, such as Iridium, to seek any available launch facility in order to speed up deployment. The overall situation is analogous to the merchant marine: often ships are registered in one country, owned by a multinational corporation, crewed by nationals of several various countries, and operated in regions not under the jurisdiction of any one nation—that is, in international waters.

Space law has not caught up with the legal issues. For instance, exactly what "registry" of a satellite means—beyond who reports the launch to the UN registry—has not been defined. While parallels to ship registry have been suggested, the idea of "flag nations" has not been established for satellites. If it were, a country could approach the nation of registration to discuss possible restrictions on commercial services to a hostile power. Unfortunately, today's free market approach does not provide this avenue for such a request.

Ironically, the commercial satellite market itself might be used to control access. If an adversary were known to be using a commercial system to its advantage, one could attempt to deny access to the system by making the operator a better offer. For example, if the United States wanted to prevent a particular type of imagery from reaching an adversary, it could offer substantially more money for the exclusive access to that imagery during a crisis. Likewise, a satellite communication system that an adversary was using could (if the operator allowed) be "bought out" by the U.S. government, precluding hostile use through saturation.

One drawback to this approach is obvious: if there is a profit to be made, the market will react. If the United States were to buy up all the satellite imagery or use all the satellite communication capacity of a system, other providers certainly would enter the market. This type of market proliferation will become more likely as more commercial systems are fielded.

Another drawback to the free market approach to inhibiting or precluding an adversary's use of commercial satellite capabilities is that it requires very deep pockets. If a crisis were to continue for a great length of time, the free market exclusive-access option would become very expensive indeed. Finally, commercial providers might see an opportunity to increase profits by offering similar exclusive use to an adversary who has the ability to pay for it—inciting a "bidding war" to accompany a "shooting war."

Negotiate Restraints. If the free market seems too open, perhaps restraints could be implemented. Negotiated restraints would be desirable from the military point of view, provided the negotiated measures do not themselves jeopardize national security. Having some means of controlling access to satellite products, whether imagery or data, could keep them from an adversary during a crisis. The obvious problem is that the satellite "genie" is already out of the bottle. The United States has long held that no nation has the right to require prior consent for satellite overflight.[51]

If a country wanted to place restrictions on satellite imagery, one way would be to require that commercial satellite operators obtain permission (and presumably pay a fee) to fly their satellites over it. That nation would have to possess means to enforce overflight restrictions. Preventing a satellite from passing over, however, is no trivial matter. A more modest approach would be to place

restrictions on the products that commercial satellite systems provide. But how? Tariffs on communication systems and GPS receivers might control satellite system access within a country, but nowhere else. Control of distribution and access to systems beyond one's own border would be extremely difficult if not impossible.

There is simply no impetus that brings commercial satellite system operators to the negotiating table; governments have neither a carrot nor a stick. If an oligopoly of commercial operators emerged in the satellite service market, nations might have a reason to restrict their operations; it is far more likely, however, that in such a case steps would be taken to keep open the market, with few restrictions, to prevent the price of services from rising.

Direct Action. Another option to control access to commercial satellite products would be to take direct action against the systems themselves, perhaps with antisatellite (ASAT) weapons, by jamming or spoofing signals from satellites, or by disrupting ground stations. Each method has consequences that need to be considered fully.

As far as any nation will admit, none has a deployed ASAT capability, though several have tested them. While the U.S. space shuttle could "grab" a low-Earth-orbit, low-inclination satellite out of orbit, it is hard to believe that, short of total war, the shuttle would be used that way.[52] As for shooting down a satellite, the problem is retaliation. If the United States declared it had an ASAT system and would use it, arms dealers would probably soon be dusting off their Cold War test platforms to provide a retaliatory option for potential victims.

Even if an active ASAT system exists, satellite systems typically involve whole constellations of units in orbit; shooting down enough satellites to cripple a system becomes difficult. If one were to shoot down all the low-Earth-orbit imagery satellites a company was using to survey one's territory, the resulting debris might interfere with or damage other satellites in similar orbits. An entire orbital plane could be temporarily made useless not only to potentially hostile systems but also to friendly ones. ASAT weapons using lasers or kinetic devices could eliminate a satellite without producing much debris, but they have yet to be fielded.

Another kind of direct action, one that was considered during the Cold War, is the idea of space "choke points." The concept takes advantage of the fact that a satellite being launched from the Earth must pass over a point on the opposite side of the planet from the launch facility on the way into orbit.[53] A ship in the South Pacific Ocean equipped with an ASAT system, for example, could have blockaded all Soviet launch facilities.[54] Today, however, the idea of space choke points has become less useful. As the number of commercial launch facilities grows, the number of locations needed to control them in this way grows. Russia, in a joint business venture with Boeing, Hughes, and Loral corporations, has

even developed a floating launch site.[55] This mobile launch facility, called Sea Launch Mir, is designed to exploit the technical advantages of equatorial launches (allowing heavier payload lift) and make Russia able to launch commercial payloads with relatively small, inexpensive boosters. If the United States decides to pursue a seaborne ASAT capability as a direct-action option, it would have to deal with the possibility of these mobile sites, and thus moving choke points.

Jamming (the blocking of a transmitted signal by overpowering it with noise) and spoofing (the deliberate alteration or replacement of a signal with a false one) could be more readily available means of direct attack, but each has limitations. Ground station signals to satellites can be jammed, and the jamming might even be made to seem innocent interference. Preventing satellite signals from reaching ground stations or receivers is feasible, but effectiveness depends on the type of signal involved. For example, a GPS receiver obtains simultaneous signals from several satellites at once; jamming the signal from only one satellite would be insufficient—at best, one would lessen the accuracy of a fix. Jamming would have to be applied against all satellites in a GPS constellation "visible" to a receiver on or above the Earth—generally seven.[56] The advantage seems minimal when one considers that jamming GPS in an area denies the system not only to the adversary but also to friendly forces.

A more subtle possibility is to spoof the telemetry, tracking, and control (TT&C) signals from a ground station. These signals tell satellites when to turn on and off, when to conduct maintenance routines, and how to position themselves. A commercial satellite system could be rendered inoperative by simply manipulating the TT&C signal so as to instruct all satellites in a system to disable themselves.[57] Spoofing a satellite signal, however, can also be a low-payoff proposition, as shown once again by GPS, which is a special case in this respect. Commercial GPS is already, in effect, spoofed—that is, by Selective Availability, which deliberately produces a less accurate signal—but countermeasures are already available. A commercial system known as Differential GPS determines the induced error by reference to a known position on the Earth and transmits a correction to subscribers.[58] It is not likely that even a technologically unsophisticated adversary, already dependent on satellite positioning, would long be susceptible to the spoofing of a GPS signal.

Commercial imagery and communication signals are more likely to be susceptible to jamming and spoofing, but not wholly. Such systems are not designed to be resistant to jamming, but they must be flexible enough to avoid natural interference. While not "frequency agile" in the military sense, they are able to shift frequencies and store information if other signals are causing problems. Also, commercial communication satellite systems have to know who is calling in order to know whom to bill, and to be able to distinguish a paying user's signal from a false one; to that extent they are spoof resistant. Of course,

however, localized jamming of communications and imagery downloads might be possible if one knows where to jam.

Imagery is susceptible to weather. Most imagery satellites use optical sensors that require fairly clear air to obtain usable images. Weather interference can be overcome by radar imaging, but such an alternative is costly and not always suitable.[59] Since launching and maintaining a commercial imagery system is still very expensive, the emphasis has been on systems that can provide a low-cost product. Accordingly, simple deception can lower the utility of commercial imagery. It can be made useless by effective camouflage, or smoke, or by moving activities underground; these traditional options are available to anyone wanting to avoid the gaze of a commercial or national imagery satellite. Additionally, an adversary using commercial imagery satellites to observe military activity needs the technical ability to interpret and evaluate the images received. Without that ability, all the images in the world are of no benefit.

Disruption of ground stations could be the most effective means of direct action against commercial satellite systems. The most straightforward way to disrupt ground stations is simply to destroy them. All satellite systems require some degree of control from the ground. Satellite positions must be determined, systems must be monitored, and maintenance routines must be conducted. Commercial systems generally use base stations to transfer data between the satellite and the customer; for example, communication satellite firms need a tie-in to local telephone systems. If these stations are destroyed, a system becomes useless—how quickly depends upon system design. A less ambitious method of disrupting ground stations, however, might be simply to cut power to the station.

Destroying ground stations controlling commercial satellites has obvious drawbacks. For instance, many newer systems use a single, centralized, and easily identifiable control station, and that station may be in the territory of a third, neutral party. A crisis could rapidly widen if one side decides to strike a third nation's territory to stop an adversary's access to a satellite system.

Other Factors and Considerations

Decision makers can, of course, simply ignore the impact of commercial satellite systems—at the risk of offering adversaries a way to counter directly the U.S. aim of "information dominance," that is, "knowing everything about an adversary while keeping the adversary from knowing much about oneself."[60] Ignoring the possibility that an adversary may be using the widespread capabilities of commercial satellite imagery, locating data, and communications would be reckless.

If ignoring the threats arising from an adversary's use of commercial satellite systems would be foolish, overestimating those threats might be equally so. Military thinkers tend to "build" an enemy that has a perfect ability to exploit all

the advantages that might be available to it. This mindset is useful when imagining all the courses of action possible for an enemy, but rarely if ever can an enemy actually do each and every conceivable action. Thus, with regard to commercial satellite systems, although they can certainly provide substantial capabilities, an adversary must be able to exploit them. First of all, and obviously, an adversary must be able to afford the information available on the market. Specific imagery is expensive, and commercial mobile satellite communications are not free.

Next, if access can be obtained, an adversary must be able to interpret the product. Separating important military information from a mass of high-resolution imagery is highly arcane work. Long-range wireless communications, for their part, imply a suitable command and control system. Finally, precise locating data is of no use if one cannot get the information to a weapon that is able to strike the desired target before it moves outside the weapon's acquisition or kill radius.

Not all commercial systems are well suited to military applications. High-resolution imagery is not put on the market in real time. Some systems take weeks to overfly a desired target area, and then the weather might not be clear. A crisis may tax satellite communication capacity, as media, nongovernmental organizations, and others focus on an area. As has been pointed out with respect to the United States, an adversary reliant on satellites for command and control of military forces but without reliable access is likely to suffer. It may even be to the U.S. military's *advantage* for its adversary to have access to commercial satellite systems. One element of "Joint Vision 2010" is to convince an adversary that continued military action is futile.[61] Without reliable commercial satellite products the adversary may be denied the data necessary to reach that conclusion.

Nonetheless, even crude applications of commercial satellite technology may produce disproportionate, asymmetric advantages. Nation-states are not the only groups that can gain access to satellite systems. Terrorists can use satellite-based cellular phones to coordinate activities, and they can use even "time late" images to plan attacks. Inexpensive GPS receivers can be used to navigate through such areas as desert terrain to make an attack.

* * *

Commercial satellite systems have affected and will continue to affect U.S. military planning. These systems must be considered in order to exploit their capabilities and guard against their pitfalls. Their capability is growing at a rapid pace, and access is open to anyone who can pay for it. International law is lagging far behind their market-driven technological leaps. Issues of ownership,

military use, and regulation are unresolved. In some cases, nations are backing away from regulation and controls on commercial satellite systems in order to expand quickly market share and access.

The U.S. military must take a serious look at the products provided by commercial satellite systems. Many of these products, from imagery to communications, are excellent and cost-effective tools a military—one's own or a potential adversary's—can use. Consequently, U.S. military planners must evaluate commercial satellite systems not only in terms of their capabilities for U.S. and allied forces, but also in terms of their value to an adversary. Once it is determined that an opponent has not only access to but also the ability to exploit a satellite product, the possibility of denying access arises. Any direct-action options against commercial satellite systems should be weighed against the practical ability of an enemy to use the product, what can be gained from it, and one's own reliance on it. Commercial satellite systems are quickly becoming indispensable to the U.S. military, and they are almost certainly growing more useful to potential enemy military, paramilitary, terrorist, and other unconventional forces.

This raises a final point that must be considered: the risks one's own dependence on commercial satellite systems presents. The U.S. military has pledged itself to use commercial satellite technology to augment its own resources capabilities as much as possible.[62] Can that reliance provide an advantage to an adversary? Has the U.S. military's reliance on theater Internet, broadcast intelligence, operational planning via video teleconference, and GPS fixes made it susceptible to direct counteraction? The U.S. military must be cautious about becoming dependent upon these capabilities. True, commercial satellite systems provide responsive imagery, worldwide communications, and the ability to exercise "precision engagement." U.S. commanders must anticipate that these systems will be denied to them in a crisis and begin now to develop effective responses at the strategic, operational, and tactical levels of war.

Planners must be specifically aware of and look for the Achilles' heel in their use of commercial satellite systems. They must not allow a single attack on a key ground station, satellite system, or communications link to cripple flexibility. They must be prepared, conceptually and procedurally, to function despite a skilled foe's purposeful degradation of friendly uses of commercial satellite capabilities.

As other militaries see the advantages these systems provide, more users are sure to follow. As the demand expands, capabilities are likely to expand. In the near future two camps will emerge: one that uses commercial satellite systems to augment their militaries, and one that works on ways to deny that advantage to adversaries. These camps may coexist, or they may diverge. The prudent planner will properly consider both arenas to make sure that commercial satellite systems are assets rather than threats.

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Ψ

IN MY VIEW . . .

"Redefining U.S. Hemispheric Interests" Another Point of View

Sir:

The Summer 1998 *Naval War College Review* contained an article entitled "Redefining U.S. Hemispheric Interests: A Bold Naval Agenda for the Twenty-First Century." Though I enjoyed reading this article, I am cognizant of the prominent circulation of the *Review* and feel that it may, if left unchallenged, skew its readers' appreciation of the South American perspective.

I offer my personal view to redress the balance:

(1) *Proposed navies classification:* Cdr. González's article seems to demand U.S. attention to Latin America and assumes that the United States will wish to invest in Latin American navies because of confidence in a particular country's alignment rather than U.S. vital interests with respect to defense issues.

Noting the classification on page 50, it is difficult to understand the basis for the assessment of Argentina, whether it be based on "confidence" for U.S. support or on its own military capability. If it is based on confidence, then surely the United States must have every confidence in Argentina if she was recognized in 1997 as an "extra-NATO ally" and was applauded for her performance in peacekeeping operations by a U.S. general (Lt. Gen. Martin R. Steele, USMC, Deputy Chief of Staff for Plans, Policy and Operations, in a lecture during the Current Strategy Forum at the Naval War College, Newport, R.I., on June 17, 1998). If it is based on capability, then Argentina's participation in multinational coalitions in the Persian Gulf, Haiti, and Central America (ONUCA)

contradict the author's definition of "green water." These operations spanned several years and were very far from Argentina's neighboring seas.

Furthermore, the Center of Naval Analyses also differs with such a classification (see Thomas Hirschfeld, *Multinational Cooperation Options: Final Report*, CNA, Washington, D.C., Table 1, p. 6).

(2) *Geopolitical vision:* The author's vision of the geopolitical situation on page 39 is rather simplistic. He says, "South America is a geopolitical triangle, with the smallest side represented by Argentina (1,620 nautical miles of coastline in the Atlantic), a second side by Chile (2,610 nautical miles of coast in the Pacific), and the longest by Brazil (4,000 nautical miles of coast in the Atlantic)." Position and international voice do not relate to length of coastline. For example, Germany has a much smaller coastline than Norway but a much larger navy. Alternatively, Germany has a smaller navy and coastline than the United Kingdom but has a much larger economy.

(3) *The Falkland/Malvinas conflict:* The U.K./Argentinean dispute over the Malvinas/Falklands is taken out of context. It was caused not through lack of maritime position but a historical claim dating from 1833. Despite U.S./Argentinean friendship, there was little that could undermine the enduring U.S./U.K. pact.

Finally, while I agree with the author that the United States must pay greater attention to Latin America, we as Latin American people must recognize that there are bigger fish on the U.S. agenda. Latin America is important but not essential for the United States.

Jorge H. Recio
Captain, Argentine Navy

Coastal Navies

Sir:

The main premise of Commander Tim Sloth Joergensen, Royal Danish Navy, in his Spring 1998 article "U.S. Navy Operations in Littoral Waters: 2000 and Beyond" is that if one is going to take on a brown-water navy, then one is best served also to operate a brown-water navy. Commander Joergensen stated that "to be able to understand and counter a threat one should be able to pose the threat oneself."

The commander wrote professionally about the coastal threats which a blue-water navy with aspirations to impose its will in the littoral battle space would face once it approached the area of operations. After reading of the threats posed by small, quiet submarines, mines, fast patrol boats (FPBs), coastal batteries, and attack aircraft, I am compelled to ask Commander Joergensen, does the U.S. Navy really need to operate the same kinds of platforms, whether

owned or "leased," to validate the threats it long ago recognized as intrinsic to these systems? Is doing so the only way to effect a counter? As an example to one specific threat, does the U.S. Navy really have to reintroduce the FPB as part of its plan to fight in littoral waters? Granted, FPBs are very serious threats, as is anything that is capable of launching high explosives. Years ago, U.S. hydrofoil boats could hide behind rocks in the Virgin Passage and simulate Harpoon launches against high-value units. But one knows that, if given the opportunity, they will do that. I don't believe the U.S. Navy needs to field patrol craft that would have to be forward deployed, as they would hinder the movement of task forces across blue water, and if I were the commander in chief, I would not rely on the certainty that allied navies that specialize in coastal warfare will provide support. Global markets plus national politics is a formula that sometimes precludes allied participation.

Would not precursor operations (not unlike the precursor operations to eliminate the submarine threat prior to putting aircraft carriers into the Vestfjorden) conducted from the amphibious ready group (ARG), carrier battle group (CVBG), and submarines be viable without FPBs? Would not sending forth patrol boats and helicopters equipped for surface warfare be a *mano-a-mano* game of attrition warfare? Would we expect a task force commander to wait out this precursor operation, hoping his brave FPB skippers are victorious before sending in the main strike force? Commander Joergensen stated the FPB has "poor ability to counter several threats at the same time." Why then does this threat need to be met by a like threat? Why not cruise missiles, air-launched Harpoons, or attack air from the ARG or the CVBG in harmony with attack submarines—the appropriate mix depending on theater constraints? Why can't a blue-water navy find within its past operations and adaptable hardware the means to counter the coastal threats from the current inventory of big decks and nuclear submarines?

As for mines, they are problematic, but they are not show-stoppers. Commander Joergensen stated they are "a very effective weapon, as was shown in the Persian Gulf between 1987 and 1991, when Iranian and Iraqi mines inflicted $125 million damage on three U.S. warships." Note the number is only three. Arguably, the weapon is an irritant vice "very effective." I state this because the incidents referred to did not prevent the U.S. from continuing its mission and seeking national goals, nor do I suspect they will in the future. The weapon did not induce the U.S. Navy to depart the Persian Gulf. Until the "magic lance" comes along, avoid them as best one can and in the meantime, use the LCAC and field the V-22 Osprey and AAAV to avoid them and to lessen the risk of influence detonation.

Forgive me for saying so, but the article reads to me like a marketing brochure selling the wares of a company which is trying to convince the potential

buyer of a need that doesn't necessarily exist. I would advise the United States naval service to be prepared to go it alone, and go intelligently with what it has.

Nelson Hines
Commander, U.S. Navy (Ret.)
Peace Dale, R.I.

The Coast Guard in Vietnam

Sir:

When I read Jonathan S. Wiarda's "The Coast Guard in Vietnam: Achieving Success in a Difficult War" (*Naval War College Review*, Spring 1998, pp. 30–45), I was surprised to see on page 39 a sentence beginning: "Not being a permanent branch of the armed forces, the Coast Guard. . . ." Because the authority cited in the note at the end of this sentence is my history of the Coast Guard, *Guardians of the Sea*, I wish to state unequivocally that the Coast Guard *is* a permanent branch of the nation's armed forces. Had Mr. Wiarda read my work carefully, he would know that the act of Congress that created the Coast Guard in 1915 specified that the service "shall constitute a part of the military forces of the United States." To be sure, the Coast Guard was not transferred to the Department of Defense during the Vietnam conflict and many of its vessels and aircraft are not armed; nonetheless, it is the nation's fifth armed force.

Some other errors appear in the article as well. None of the high endurance cutters that served off Vietnam had helicopter pads except the new 378-footers, six of which constituted a part of Squadron 3 beginning in 1969. The twenty-four smaller ships all had to rely on underway replenishment during their lengthy patrols. Nor did any have 40 mm mounts; these had been removed from the 255-footers earlier, while the older 327-footers and the 311-foot cutters (built as Navy AVPs) seem never have been so armed after World War II. The WHECs that formed Squadron 3 had only some .50-caliber machine guns and a pair of 81 mm mortars to supplement their single 5-inch/38-caliber guns. None had a complement even approaching 215—they were generally manned by 140–155 officers and men.

While I have never sailed in the South China Sea or the Gulf of Thailand, I cannot believe that "the rough waters off Vietnam were much worse than those around the United States," as Mr. Wiarda asserts on page 39. He should be aware that "Winter-North Atlantic" signifies the lightest lading on a freighter's Plimsoll mark, while the North Pacific in winter can be literally ferocious. No doubt rough water interfered with boarding Vietnamese junks, but to imply that this was something to which the crews of eighty-two-foot WPBs were unaccustomed simply is not true.

Finally, Mr. Wiarda does injustice to the Coast Guardsmen who served in Vietnam in capacities other than manning WPBs or WHECs by never mentioning their contributions. Tending aids to navigation, establishing and manning Loran stations, port security, dealing with merchant marine personnel, and especially the explosive loading detachments were fully as important as participation in MARKET TIME patrols—indeed, the last may have been the most valuable contribution their service made to the war in Vietnam.

I am sorry to have to find fault with a young scholar's efforts, especially when he has an M.A. in military history from the University of Alabama, from which I retired in 1993 after having helped to establish the program. But perhaps he can benefit from these remarks, which at least are not accompanied by a low grade.

Robert E. Johnson
Professor Emeritus
Tuscaloosa, Ala.

Ψ

Statement of Ownership
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Pelham G. Boyer, Managing Editor

SET AND DRIFT

Orbital Dynamics for the Compleat Idiot

Alan R. Washburn

ACTUALLY, A *COMPLETE* IDIOT would have trouble with this tutorial. The real intended audience is scientifically oriented and pressed for time. The objective is to provide an acquaintance with the technology and terminology relevant to Earth-orbiting satellites. In spite of this mild ambition, however, the vocabulary expansion that follows is nontrivial. Terms that are used in a special sense—twenty four of them—are italicized when first defined. There is even a formula.

Reference System

The coordinate system used in this tutorial has its origin at the center of Earth. In this coordinate system the Sun goes around the earth, contrary to what you may have heard. There is actually no harm in this viewpoint, since the origin of coordinates can always be whatever is convenient. It is true that Earth would be an awkward origin if we were interested in the motion of other

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planets (since they have complicated orbits in Earth-centered coordinates), but the planets do not sensibly affect Earth satellites, the subject of interest here, so the center at Earth will do fine.

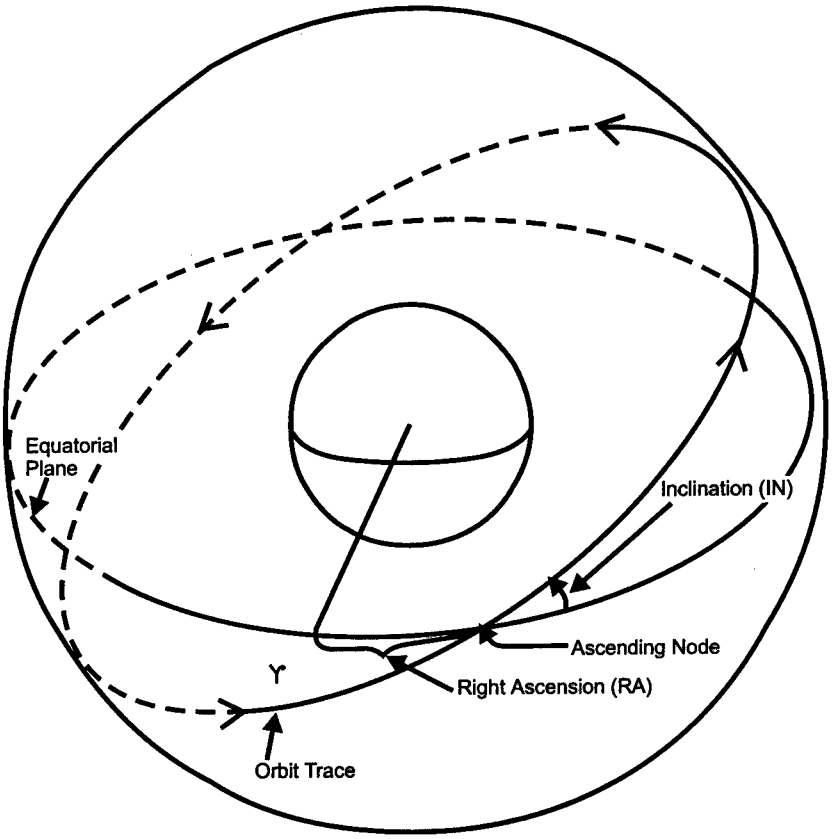
The problem is how to orient the x, y, and z axes. The z axis is easy; it will point to the North Pole along Earth's axis of rotation. We want to have a direction for the x axis that does not rotate with Earth, so that an observer could cling to the axis frame and see all the stars other than the Sun as stationary—an inertial frame of reference. There are many such directions. The convention is to orient the x axis in the direction of the *vernal equinox* (♈), which is by definition the direction to the Sun on the day in spring when day and night have the same length. Any time you can see the constellation Pleiades, you are looking approximately in the direction ♈. Since ♈ is in Earth's equatorial plane, there is a right angle between the x and z axes. Now orient the y axis to be perpendicular to them both, and you have our coordinate system. You might wish to imagine a transparent sphere centered on these coordinates, with every star other than the Sun fixed to it. This is the *celestial sphere.* If you sit on top of this sphere and look down at Earth, you will see it rotating counterclockwise on its z axis.

The beauty of this coordinate system is that (neglecting small perturbations that will be described below) the orbit of any satellite is a fixed ellipse. The satellite moves around the ellipse, but the ellipse itself remains stationary. It takes six numbers to describe such an orbit. The six could be simply position (three numbers) and velocity (three numbers) at some reference time, but a different set is used in practice and is worth getting used to. Two numbers describe the plane and direction of rotation. A satellite's *ascending node* is the direction from the origin to the satellite when it ascends through the equatorial plane going north. The *right ascension* (RA) of the ascending node is an angle measured counterclockwise (as viewed from the North Pole) from the x axis to the ascending node, an angle between 0 and 360 degrees. The other number is the angle in degrees between the equatorial plane and the plane of rotation, the orbit's *inclination* (IN). For *prograde* (counterclockwise) orbits, $0 \leq IN < 90$. For *retrograde* (clockwise) orbits, $90 < IN \leq 180$. All orbits that go over the North Pole are *polar* and have IN=90. Orbits with IN=0 or IN=180 are all *equatorial*, but the first is prograde and the second retrograde. Figure 1 illustrates RA and IN for a circular, prograde orbit. In this Earth-centered coordinate system, the Sun's orbit is nearly circular and prograde, with IN=23.5 and RA=0.

Kepler's Laws

As Johannes Kepler discovered and Isaac Newton first showed in 1685, the solution of the two-body problem is that the path of body A with respect to body B is a conic section. When the conic section is a parabola or hyperbola, body A "escapes" and never returns; otherwise, body A (the satellite) repeatedly

Figure 1



Celestial Sphere with a Circular, Prograde Orbit,
Showing the Orbit's Ascension (RA) and Inclination (IN)

Joseph R. Nunes, Jr.

travels around an ellipse with one focus at body B (Earth, in the present application). This is Kepler's first law. Three additional numbers are required to determine this ellipse within the plane already determined by RA and IN. Systems for doing this vary (the details are not important for the moment). The sixth and last number locates the satellite on the ellipse at some standard time. After the satellite is located on the ellipse, physics takes over, and the satellite rotates round and round the earth indefinitely.

Kepler's second law states that the time required to go from one orbital position to another is proportional to the area of the circular wedge formed by the line between the earth and the satellite. When the line is long, the satellite

moves slowly. Therefore a satellite moves fastest at *perigee* (closest point to Earth) and slowest at *apogee* (farthest point).

Kepler's third law states that the *period* (T) of the orbit is related to its size in that T^2 is proportional to r^3, where r is the *semimajor axis* of the ellipse (half its largest diameter). For satellites whose mass is negligible compared to that of Earth, the exact relationship is:

$$T = 2\pi\sqrt{\frac{r^3}{gR^2}},$$

where g = gravitational attraction at Earth's surface (.00981 km/sec^2)
R = radius of Earth (6378 km).

For satellites in circular orbit, r is the radius of the orbit. For example, a satellite in circular orbit 570 km above Earth would have r=6948 km and T=5760 seconds (ninety-six minutes). If atmospheric interactions are ignored, a satellite with r=R would be feasible and would have a period of eighty-four minutes (it would also have a speed of 7.9 km/sec, providing a real thrill to observers as it skims Earth's surface). In practice most satellites stay at least 200 km above the earth to avoid the atmosphere, so think of an hour and a half as a lower bound on any satellite's period. The satellite's mass does not affect the orbit as long as it is small compared to Earth—the formula also works for the Moon, but not for the Sun.

The earth rotates on its axis once every 23 hours and 56 minutes, the length of a *sidereal day*. Remember that the Sun is moving around the earth in a prograde orbit, and that a (solar) day is the length of time required to have the Sun again overhead at a given point on Earth. After the earth has rotated counterclockwise once, it still needs another 365th of a day (about 4 minutes) to catch up to the Sun. A prograde orbit with a period of one sidereal day (circular or not) is *geosynchronous*; that is, the satellite's Earth track will be the same every day. Circular, geosynchronous orbits have a radius of about 42,164 km.

A circular, geosynchronous orbit with inclination IN=0 will appear to hover above a point on the equator. These orbits are *geostationary*. Specifying the fixed point on the equator completely defines the location of a geostationary satellite for all time, so there can be only one geostationary orbit for every longitude. Geostationary orbits are popular for communication satellites because the corresponding ground antennas do not have to move much. Fortunately, since the circumference of the geostationary orbit is 267,000 km, there is room for quite a few satellites. From its position at 5.6 Earth radii above the surface, a single geostationary satellite can see as far as 81 degrees north or south latitude—almost a complete hemisphere. Three or four carefully spaced satellites can

cover most of the earth; the missing parts are the polar or ocean regions, where very few people live. This is all very convenient. (On Jupiter, the corresponding orbit would be only 1.25 radii above the surface, and consequently a satellite would not be visible beyond a latitude of 64 degrees. On our sister planet Venus, which hardly rotates, the orbit would be inconveniently far away at a radius of 1.5 million km [244 radii]. In yet another way, the earth turns out to be a good place for the human race.)

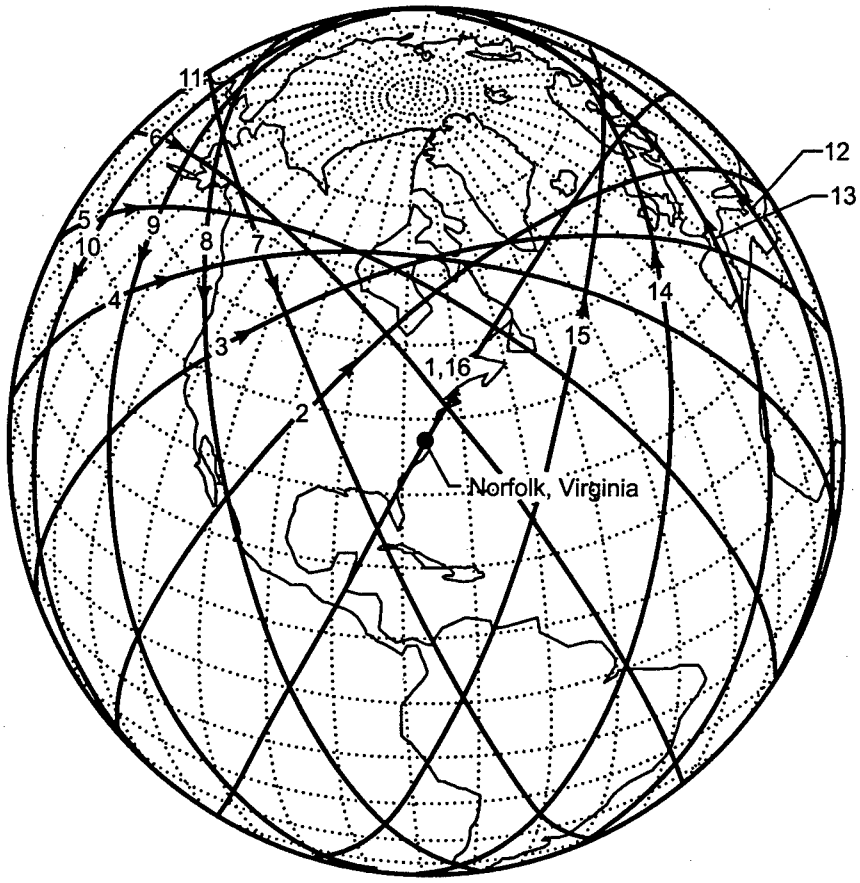
Nevertheless, while a satellite can indeed "hover" above a point on the equator and "see" much of the earth's hemisphere below—a feature ideal for receiving and transmitting radio, telephone, and television signals and for viewing major weather formations—the orbital distance of nearly 170,000 miles precludes tactical imaging or electronic intercept locating. These require low Earth orbits.

Effects of Earth's Rotation

Of the six satellite parameters, only RA and IN would be of much use if the earth did not rotate. These two alone would determine the track of the satellite on Earth, with the other four parameters affecting only revisit time and the velocity and altitude of the satellite as it passes over. This would have the advantage of conceptual simplicity—most satellite coverage problems could be investigated with a globe and some means of drawing great circles on it. But the operational disadvantages of a nonrotating Earth would be immense, even putting aside the fact that all life would die out. There would not be any geostationary orbits, for example, since one could not count on the earth to expose itself by rotating under the satellite. In spite of the conceptual complications, Earth's rotation is basically a Good Thing.

The coverage pattern achieved by a satellite on a rotating Earth depends on the relationship between the satellite's period T and Earth's sidereal period E. The ratio $Q \equiv E/T$ is the *repetition factor.* The orbit is synchronous if $Q=1$. If $Q=2$, as in the Global Positioning System, each satellite makes two complete orbits in one sidereal day. A satellite with $Q=14/3$ would repeat its ground track—the trace of points on the earth's surface directly below the satellite—every 3 sidereal days, after fourteen revolutions. The ground track of a circular satellite with $Q=15$ and $IN=63$ is shown in Figure 2. This satellite appears to weave a kind of "basket" upon the earth in the process of making its fifteen daily orbits, revisiting Norfolk and every other point on its track once a day. Because of the earth's rotation, a single satellite can come reasonably close to every point on Earth once a day, within the latitudes that its orbit is designed to cover. If the mesh of the basket is too coarse, use a second satellite offset by $360/(15x2)=12$ degrees of RA. If the revisit time is too large, put multiple satellites in the same orbit.

Figure 2



Ground Track of a Satellite with Repetition Factor Q=15 and Inclination IN=63. Norfolk is Viewed Once a Day

Joseph R. Nunes, Jr.

Figure 3

Ground Track of a Circular Synchronous Orbit with IN = 45°

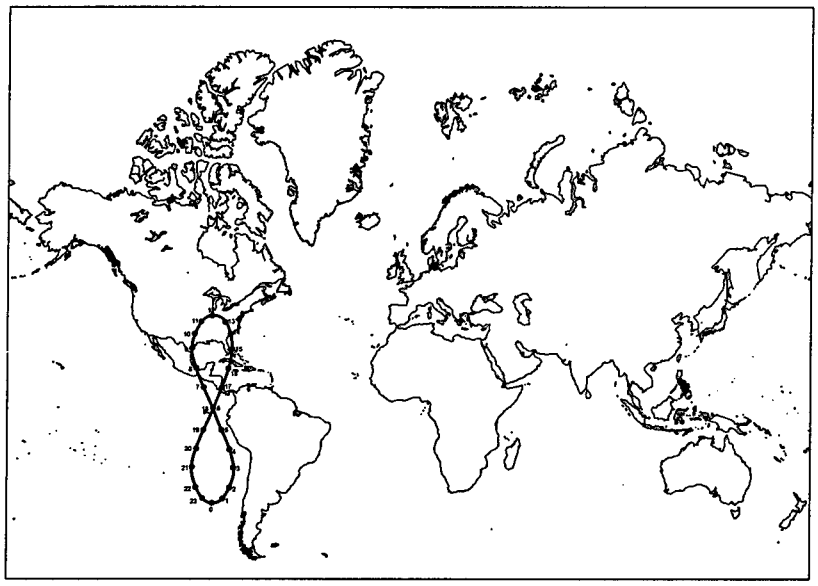
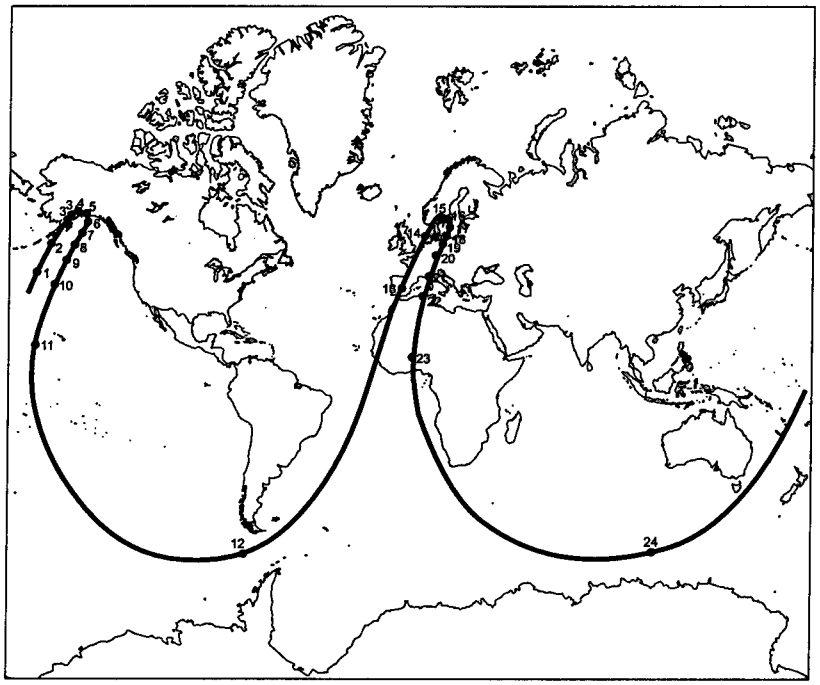


Figure 4

Ground Track of an Elliptical Orbit with Repetition Factor Q=2



Joseph R. Nunes, Jr.

If Q is an irrational number, then the ground track never repeats! Even when the ground track repeats, some remarkably odd shapes are possible. Figure 3 shows the track of a circular synchronous satellite with IN=45. The track is confined to the predictable latitudes but moves around in a figure-eight pattern. Figure 4 shows the track of an elliptic orbit with Q=2. In Figure 4, apogee occurs twice a day at the two northern cusps; the closeness of the hourly hashmarks means that there the satellite is moving slowly, as is always true in elliptical orbits. There are many Russian Molniya satellites with orbits of this type.

Perturbations

Due to its rotation, Earth is a bit fat around its equator. As a result, the motion of a satellite is perturbed from what it would be if Earth were a perfect sphere. The effect is the same one that applies to a spinning top when Earth's gravity tries to make the axis of spin horizontal. Instead of falling down, the axis of the top's rotation precesses about the vertical. Basically a satellite is just a big top, and the bulge at the equator continually tries to move the satellite's axis of rotation into the equatorial plane. The satellite's reaction is that its axis of rotation precesses about the North Pole—the inclination of the orbit remains constant, but the right ascension (RA) changes slowly with time. RA decreases for prograde orbits and increases for retrograde orbits, with polar orbits unaffected. The magnitude of the RA drift is approximately several degrees per day, depending on the altitude and inclination of the satellite, so the effect on Earth coverage can be substantial over only a few days. Satellite tracking programs invariably account for it.

Orbit precession is an analytic annoyance, but a clever orbit designer can put even this phenomenon to use. Recall that a synchronous orbit passes over the same point on Earth once every sidereal day. If that point is in sunlight at one time, it will be in darkness six months later, because of the Sun's orbit around Earth. This can be awkward if photography is involved; it would be better if the satellite could pass over a given point at the same time(s) every day. Precession can make that happen. If the satellite is in a retrograde orbit, then its axis of rotation will move counterclockwise around the North Pole, just like the Sun. If the axis makes exactly one rotation per year, then the orbit will be *Sun-synchronous*, the desired effect. Satellites in near-polar retrograde orbits are usually put there with this in mind. They are likely to be in low orbits, since the precession effect dies out quickly with altitude.

Another perturbation that must be allowed for is the inexorable effect of friction, particularly for satellites in low orbit. Sooner or later, every satellite will spiral inward, and if it is not burned up in the atmosphere it will finally crash to Earth. In the meantime, the six parameters of the orbit that approximates the satellite's actual track must be periodically adjusted.

Statistics about Satellites

Satellite databases always include RA, IN, three elliptical parameters, one parameter to locate the satellite on the ellipse, and possibly other information. The three elliptical parameters are:

- *Eccentricity* (EC): half the ratio of the distance between foci to the semi-major axis. Necessarily $0 \leq EC < 1$. EC is zero for a circular orbit. As EC approaches 1, a small perturbation could turn the ellipse into a parabola, in which case the satellite would leave its Earth orbit and become a deep-space probe.
- *Argument of perigee* (AP): the angle from the ascending node to the perigee, measured in degrees within the plane of rotation. Thus $0 \leq AP \leq 360$.
- *Mean motion* (MM): the number of revolutions per day. MM is 1.0027 for a synchronous satellite. The reciprocal of MM is the period T in days.

The sixth parameter locates the satellite on the ellipse at some reference time. The *true anomaly* is the angle from perigee to the satellite (satellite terminology has inherited terms like "argument" and "anomaly" from the ancient science of astronomy—both are names for angles). The *mean anomaly* (MA) is the angle from perigee to where the satellite would be if it moved around its orbit at a constant angular rate (which it does not). MA is essentially a measure of time since perigee (it is used in preference to true anomaly in spite of its odd definition).

In theory a single reference time (for example, 1957) would do for all satellites, but in practice each satellite has its own *epoch* (EP), a time, ideally in the recent past, at which the other six parameters are asserted to have been accurate. Of the six parameters in theory, only MA should depend on EP. In practice the other five also have a slight dependence, because of perturbations.

The most common satellite database format is NASA (or NORAD) format, where each satellite gets three lines. In that format EP is in the second line, along with other data that includes the last two digits of the year of launch (YR). The third line includes IN, RA, EC, AP, MA, and MM, in that order, except that EC is given as an integer that should be multiplied by 10^{-7}. NASA format is invariably called two-line format, apparently with the idea that the first line, which contains only the satellite's name, should not be counted. The six lines below describe TELEDESIC 1 and SPOT 4:

```
TELEDESIC 1
1 25234U 98012B  98254.15120785  .00007458 00000-0  53265-3 0  1151
2 25234  97.7299 146.7419 0032757 28.1699   332.1290 15.04362321 29606
SPOT 4
1 25260U 98017A  98254.19809564 - .00000044 00000-0  00000-0 0  1496
2 25260  98.7291 327.6528 0000917 87.5494   272.5789 14.20020821 24297
```

Lines labelled 1 and 2 have the following format: (elements defined above are shown in square brackets):

Column	Description of elements in line labelled 1
01-01	Line Number of Element Data
03-07	Satellite Number
10-11	International Designator (launch year) [YR]
12-14	International Designator (launch number of the year)
15-17	International Designator (piece of launch)
19-20	Epoch Year (last two digits of year) [EP]
21-32	Epoch (Julian day and fractional portion) [EP]
34-43	First Time Derivative of the Mean Motion divided by 2 or Ballistic Coefficient (depending on ephemeris type)
45-52	Second Time Derivative of Mean Motion divided by 6.
54-61	BSTAR drag term if GP4 perturbation theory was used; otherwise, radiation pressure coefficient
63-63	Ephemeris Type
65-68	Element Number (counts the number of updates)
69-69	Check Sum (Modulo 10)

Column	Description of elements in line labelled 2
01-01	Line Number of Element Data
03-07	Satellite Number
09-16	Inclination [IN]
18-25	Right Ascension of the Ascending Node [RA]
27-33	Eccentricity (times 10^7) [EC]
35-42	Argument of Perigee [AP]
44-51	Mean Anomaly [MA]
53-63	Mean Motion [MM]
64-68	Revolution number at epoch
69-69	Check Sum (Modulo 10)

NASA format does not include a field for the satellite's purpose, owner, or launcher, but such information can be found in other databases. The key field is the satellite number that is shown on both lines in the two-line format. Every satellite has a unique number, and it never changes. The numbering is sequential, so it is correct to conclude that over 25,000 satellites or other pieces of space debris had already been launched when SPOT 4 went up in 1998.

For further information, try T. S. Kelso's web page at http://celestrak.com/. The Federation of American Scientists (http://www.fas.org/) also contains an interesting space policy link.

BOOK REVIEWS

"A New Way of War?"

Hoffman, F. G. *Decisive Force: The New American Way of War.* Westport, Conn.: Praeger, 1996. 150pp. $52.95

BY INSISTING THAT ANY U.S. MILITARY ACTION must employ decisive force, American military leaders have come to believe in the past two decades that they have established a new American way of war that precludes repetition of the frustrations of Vietnam. Yet it is the loud and clear message of F. G. Hoffman that any such conclusion is almost certainly wrong. The strategy of decisive force will usually prove inappropriate to the kinds of scenarios requiring military intervention that the United States will actually confront. An American military strategy for the post–Cold War world has yet to be formulated. The nation still has to rethink its strategy anew. Hoffman, who published the book while Historian, Studies and Analysis Division, Marine Corps Development Command, offers a sharp critique of where America is and has been in its strategic thought, and some valuable suggestions about where to go, and especially where not to go.

Hoffman's book skillfully blends history with rigorous strategic and policy analysis. He accepts the conventional view of the old American way of war, that through 1945 U.S. history has conditioned its citizens, especially the military, into believing that the natural object of war is the absolute defeat of the enemy and that the appropriate means whereby a power as rich and mighty as the United States should seek that object is decisive force. After World War II, however, and particularly in Vietnam, political constraints prevented applications of the concept, thwarting both the pursuit of absolute victory and the invocation of decisive force.

Reviewing in detail the Vietnam War, the intervention in Lebanon between 1981 and 1984, the invasion of Panama in 1989, and the Persian Gulf War of 1990–1991, Hoffman argues that the perceived failures of the two former events and the apparent successes of the latter two shaped the current accepted principles of decisive force. To prevent repetition of failures, we have concluded that American military actions must be guided by clearly defined objectives. To repeat recent successes, we must return, even when the defined objectives are limited, to employing force on a scale so overwhelming as to assure its decisiveness.

Hoffman's analysis of his four critical events, however, disputes the lessons commonly drawn from them, thus laying the foundation for his critique of the decisive force concept drawn from the generally accepted lessons. His book is so tightly reasoned that a summary is even less able than usual to do more than scratch the surface of the analysis. With that caveat, nevertheless, it can be stated that as for Vietnam, Hoffman does not accept that a failure to define objectives lay at the root of U.S. problems: the purpose of creating a viable noncommunist Vietnamese state was a sufficiently clear military and political objective. Similarly, in the Lebanon fiasco the Ronald Reagan administration had an objective that was clearly enough defined: "A sovereign and peaceful Lebanon, secure within its own borders, without either civil war or foreign forces, was the objective." Conversely, in neither of the perceived successes was the objective so clearly defined as those who laud operations JUST CAUSE (Panama) and DESERT STORM allege. In Panama, bewilderment about how to complete the mission of creating a democracy was symbolized by blatantly installing a new government under U.S. auspices, with American colors and military personnel conspicuously on the scene—a sure recipe for Panamanian disaffection.

In the last hours of DESERT STORM the confusion about how to deal with the Republican Guard and with the stop-lines for the advance undercuts the notion that we had clearly decided what we intended to accomplish.

The real difference between Vietnam and Lebanon on the one hand and Panama and the Persian Gulf on the other, Hoffman contends, is not in clarity or objectives but in the civilian administration's having given military leaders a virtually free hand to conduct the latter two actions as they chose—that is the true reason for the military's satisfaction with JUST CAUSE and DESERT STORM. Hoffman's implication is that if we look instead to the clarity-of-purpose myth, we are unlikely to draw the appropriate conclusions; further, he finds the military insistence on a free hand unpromising for future problems.

Civil-military relations were outwardly correct during the four events on which he focuses, but Hoffman finds those relations nevertheless fundamentally unsound, because of the wide gap between civil and military perceptions that has existed since World War II. Both sides must share the blame, Hoffman believes, but when the military complained about the conduct of the Vietnam War, it refused to accept opportunities given it to try better options. In Lebanon there was military foot-dragging, ostensibly because of the unclear-objectives bogey but actually because the forcible measures employed were not what the military leadership wanted. Only the autonomy of Panama and the Gulf satisfied the military. The complex post–Cold War world is unlikely to present many scenarios in which such autonomy will be possible.

In all these circumstances Hoffman finds walking the ghost of the nineteenth-century military intellectual Emory Upton. Almost complete autonomy

from civilian control is what Upton insisted the military must always have, and the author believes that Upton's influence has been so lasting that there has been a certain illusory quality to the apparently harmonious civil-military relations of the post–World War II era.

It is indicative of Hoffman's strong historical sense that he links Upton's ideas, which emphasized military administration, with strategy and policy—a connection not often recognized. That same historical sense, combined with strategic insight, warns Hoffman that the supposedly new American way of war is too much like the old way, in its unsubtle vision of the application of force, to be likely to serve much better than the old version did after 1945. We cannot separate military force from civilian policy. We will rarely be able to apply overwhelming force in politically ambiguous scenarios. The invocation of military force almost never comes without risks, including those of prolonged involvement, unanticipated political consequences, and casualties. This cautionary book is indispensable reading for military professionals.

Russell F. Weigley
Temple University

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Khalilzad, Zalmay M., and David A. Ochmanek, eds. *Strategy and Defense Planning for the 21st Century: Strategic Appraisal 1997.* Santa Monica, Calif.: RAND, 1997. 377pp. $20

This is the second in what is intended to be an annual series of books published by RAND to provide current insights into broad national security and defense planning issues. It was intentionally produced prior to the final reports of the Quadrennial Defense Review (QDR) and the National Defense Panel (NDP), with the hope of informing participants in those efforts.

The volume is a collection of nine essays covering a broad range of defense planning issues, with a primary focus on the development of force planning criteria in the post–Cold War era. The common point of departure for the collection is that the United States has entered a very challenging period that should call into question existing assumptions about long-term U.S. military sufficiency. At the very least, the declining force structure driven by defense budget reductions is seen to be incompatible with a U.S. national security strategy of forward engagement and global leadership. At worst, the book foresees the possible emergence of new types of threats that will require military capabilities very different from those that are now planned for the coming decades.

Both the QDR and NDP efforts sought to address these challenges, but the fact that their respective final reports came to diametrically opposed conclusions clearly indicates a continuing lack of consensus among senior

defense leaders regarding future military challenges for the United States, and regarding the adequacy of programmed forces to meet those challenges. *Strategic Appraisal 1997* will be valuable to the extent that it assists in choosing between the findings of the QDR and NDP, or makes a convincing case for some alternative course of action.

The editors profess that the book seeks not to provide answers but rather to identify the primary factors behind the critical issues in order to help decision makers make informed choices. For those who are not current on the parameters of the debate, the volume provides a useful overview of some of the most relevant issues. However, whether the essays serve to further the analytical basis for the promotion of major change to the current force structure remains to be seen. In general, this appraisal takes a "top down" approach to future military force structure planning; in other words, it moves from specific requirements to generic capabilities as the best way to position the military optimally for a broad range of potential missions. Despite its apparent logic, the difficulty with this approach is that major changes within military forces have in the past been driven not by top-down requirements for broad capabilities but by a common recognition of very narrowly defined and urgent operational problems—problems so compelling as to overcome the multitude of military, industrial, and congressional interests in maintaining the status quo. The argument in this book notwithstanding, the prospect of severe constraints on defense spending does not appear to be compelling enough to foster significant force changes; indeed, the inability to articulate a severe military problem seems to be the primary cause of the present defense drawdown. Thus one must be skeptical that the top-down strategy recommended in this collection will have any more impact on the defense planning process than has the similarly argued report of the NDP.

This is not to say that there are no indications of emergent problems serious enough to stimulate major force restructuring. The increasing risk to U.S. forward-presence and power-projection forces posed by the proliferation of precision guided weapons and associated targeting capabilities would seem to be such an issue. This issue of regional "denial" is raised in the book, but it tends to be lost in a vast catalog of challenges ranging across the broad spectrum of warfare—some very difficult, and some relatively trivial. Moreover, proposed responses to some of the most vexing military problems —such as reliance on dubious active missile-defense concepts to counter growing arsenals of theater ballistic missiles—seem remarkably linear for a volume that seeks to promote innovation and change. Indeed a questionable theme throughout the book is that future problems will require expensive new technologies to counter, and thus substantial dollar investments for U.S. force modernization that must be squeezed out of a static defense budget. However, before accepting this conclusion, one would like a convincing argument that new and innovative ways of operating with our existing systems will be unable to reduce

adequately the growing risks from these emerging threats.

In sum, *Strategic Appraisal 1997* offers a good benchmark of the state of the art of current thinking with regard to long-range defense issues in an era of great change. It is also indicative of how much intellectual work lies ahead if a compelling case is to be made for a radical restructuring of the U.S. military.

JAMES R. FITZSIMONDS
Captain, U.S. Navy

Ricks, Thomas E. *Making the Corps.* New York: Scribner's, 1997. 320pp. $24

"Now! Sit up straight. Get your eyes on me. Now, get off my bus. Let's go. Now. Move. Move! *Move!*"

Welcome to Marine Corps basic training.

In *Making the Corps*, Thomas E. Ricks follows the members of Platoon 3086 through the most difficult eleven weeks of their lives. Ricks, a Pentagon correspondent for the *Wall Street Journal*, is there when the recruits get off the bus and when, nearly three months later, most of them graduate. He then follows them onto active duty, showing how their personalities and performance in training relate to their ultimate success or failure in the Corps. Looking through the eyes of not only the recruits but also the drill instructors, the reader will watch as the culture of the Marine Corps is developed within its newest members.

Ricks accompanies the recruits through all phases of their training at Parris Island. In doing so he explains the Marine Corps culture and shows how new Marines are brought into the fold. The reader comes away understanding that unlike that of the other services, the Marine Corps' basic training is primarily designed to indoctrinate new members into the culture rather than to develop military skills; combat readiness comes later. Parris Island (and its counterpart in San Diego) forces new recruits into the Marine mold, through drill, weapons training, physical conditioning, and constant reminders of their heritage and obligations.

The discussion of Marine culture is a timely one. The other services seem to be going through an identity crisis as the world changes around them, and they appear to be looking to Marine culture as a template. The Army has created contingency forces, smaller and lighter than its main formations, ready to deploy rapidly, much as the Marines have always done. The Air Force is developing an Air and Space Basic Course for new officers that seeks to develop a common identity among lieutenants from all the commissioning sources, similar to what The Basic School does for new Marine officers. In *Making the Corps*, leaders from the other services are given the opportunity to see what it takes to create an organization like the Marine Corps; they may decide the cost of doing it right is too high. After all, if their soldiers, sailors, and airmen wanted to be Marines, they likely would have joined the Marine Corps in the first place.

What is it that makes a Marine? Ricks does not pull any punches. He portrays the recruits and their indoctrination honestly, using their words and

those of the drill instructors, as well as his own observations. To hear him talk, many of the recruits he knew were the dregs of society. "They are, with a few exceptions, denizens of the bottom half of the American economy, or on their way there—poor kids with lousy educations, and a few wealthier ones sliding off the professional tracks their parents had taken." There are university graduates and community college dropouts, pacifists and bullies, gang-bangers, and skinheads. Turning them into contributing members of society is tough enough; turning them into Marines is an especially daunting task, and Ricks does an excellent job of showing the transformation.

The author addresses more than just the culture of the Marines; he goes on to discuss the state of civil-military relations today. As the recruits become indoctrinated into Marine culture they shed their civilian values, at least on the surface. Most take on a holier-than-thou attitude, looking down on the civilian culture from which they came. The fact that many do not actually internalize these beliefs is reflected in the fact that out of 3,086 graduates, nearly 15 percent will not finish their first year in the Corps. It is also a little scary how some of these recruits come together: the gang member from Washington, D.C., and the skinhead from Alabama find their common bond in anti-Semitism. Ricks uses the recruits' harsh opinions of civilian society to demonstrate the perceived division between today's military and the population at large. It is here that the book's only real fault becomes glaringly evident: it is difficult to tell where the recruits' and the drill instructors' views end and the author's opinions begin. Is he merely explaining their perspective, or is he adding his own commentary on the subject? It is hard to be sure, but when examining the issue Ricks seems to fall into the social science trap of looking for views that support one's own while missing other important evidence.

That is not, however, a fatal flaw. This is an excellent book for anyone who is interested in how the Marine Corps turns young men and women into a force that, to paraphrase one sergeant major, can hold babies one day, kill the next, and know the difference between the two. Given the changes in the world, it is helpful to see how one small service has already addressed many of the challenges facing the larger services today. Conducting military operations other than war, operating as an expeditionary force, and getting by with limited resources are issues that have always been a part of the Marine Corps. *Making the Corps* will be an excellent stroll down memory lane for every Marine, and an excellent guidebook for everyone else.

WILLIAM C. THOMAS
Captain, U.S. Air Force

Zartman, I. William, and J. Lewis Rasmussen, eds. *Peacemaking in International Conflict: Methods and Techniques.* Washington, D.C.: United States Institute of Peace Press, 1997. 412pp. $19.95

William Zartman and Lewis Rasmussen have assembled a stable of contributors whose experience encompasses scholarship and field work in

international relations theory, international law, conflict resolution, diplomacy, and nongovernmental organization (NGO) operations. Zartman, a senior academic at the Johns Hopkins University's School of Advanced International Studies, brings thirty years of conflict resolution scholarship to the project. Rasmussen, a program officer at the United States Institute of Peace, has coauthored a study of Middle East conflict resolution. The qualifications of each of the other contributors are strong, reflecting extensive experience in each of their specialties. The articles are supplemented with lists of additional readings.

The book consists of four parts: "Mapping the Field" and "Approaches to Peacemaking" deal in theory, while "Practitioners" and "Training" discuss practical matters.

In Zartman's introduction, he notes the state's preeminence in world politics but observes that conflict transcends the state, pulling it into struggles with subgroups and embroiling it in regional contests.

In Part One, "Mapping the Field," Rasmussen's "Peacemaking in the 21st Century" summarizes the development of international relations theory since World War II. Louis Kriesberg, a professor of sociology, complements Rasmussen with his comprehensive essay, "The Development of the Conflict-Resolution Field."

Part Two, "Approaches to Peacemaking," explores various peacemaking possibilities, such as negotiation, mediation, adjudication, social-psychological techniques, "interactive conflict resolution," and religion. Daniel Druckman, a professor of conflict management, in his essay "Negotiating in the International Context" explains state-to-state negotiations as puzzle solving, bargaining, organization management, or diplomatic politics. Law professor Richard Bilder introduces "Adjudication: International Arbitral Tribunals and Courts." He explains them, discusses the differences between arbitration and judicial settlement, and points to the benefits of a strengthened international judicial system. In "The Social-Psychological Dimensions of International Conflict," Herbert Kelman, professor of social ethics, looks at human processes promoting hostility. Psychology professor Ronald Fisher describes "Interactive Conflict Resolution," which draws representatives of groups into problem-solving workshops, supplementing conventional diplomatic and governmental activities. "Religion and Peacebuilding" by Cynthia Sampson discusses the roles of lay and ecclesiastical figures who have become advocates, intermediaries, observers, and educators in the most intractable conflicts.

Part Three, "Practitioners," highlights diplomats and nongovernmental organizations. Cameron Hume, a senior member of the American United Nations mission, contributes "A Diplomat's View," discussing the relative decrease of the state's powers to contain conflicts, and pointing out their reliance on the executive agency of the Security Council. Experiences of nongovernmental organizations are presented by Andrew Natsios, vice president of World Vision U.S., in "An NGO Perspective." For military officers, his is one of the most useful chapters, addressing NGO strengths

(endurance in the community, commitment to long-term resolution) and weaknesses (lack of hierarchy, multiplicity of programs and doctrines, etc.).

In Part Four, "Training," Eileen Babbitt, an international politics professor, illuminates the topic of "Contributions of Training to International Conflict Resolution," describing training appropriate to specific conflicts and also the more general training of entry and midgrade foreign affairs professionals.

Peacemaking in International Conflict is not about international relations or the military's post–Cold War role. Rather, it concentrates on resolution of conflict by means other than force. Though couched in state-based terminology, it ignores the state itself as a political actor. One strength of this work is that it goes beyond state and national interests to focus on the socially confined arena where violent conflicts find their solutions. By explaining international relations theory; shortcomings in conflict resolution theory; subtleties in negotiation, adjudication, and mediation; and the part that religion plays, this book contributes to a richness of understanding in a complex world. Another strength of this work lies in its exposition of the character of many nonstate actors. Religious organizations and secular NGOs have assumed larger roles. The salience of diplomacy, tied to the sovereign state, continues to recede. This book helps the reader to understand why.

The major weakness of this book is the absence of the military. At this late date, its exclusion cannot be understood. Military organizations are routinely employed in the implementation of cease-fires, delivery of humanitarian assistance, and the assurance of confidence-building measures. Local commanders often find themselves involved in immediate and highly dangerous conflict resolution. A chapter by an experienced military source would have been welcome.

Nonetheless, this book is a valuable addition to the library of those whose careers will expose them to the conflict resolution process. Zartman is incorrect to refer to his latest volume as a "tool kit." Rather, it provides a rough map and a compass, and it indicates where additional maps may be found.

DANIEL H. ELSE
Reston, Virginia

McDougal, Walter A. *Promised Land, Crusader State: The American Encounter with the World since 1776.* New York: Houghton Mifflin, 1997. 286pp. $26

Walter A. McDougal's *Promised Land, Crusader State* is a necessity for those with an interest in foreign policy and America's future. A Pulitzer Prize–winning author and editor of *Orbis: A Journal of World Affairs,* McDougal here provides a survey based on his extensive historical studies of American diplomatic history. More importantly, he presents an original view of America as first a promised land and then a crusader state.

Rejecting the "sterile debate" over foreign policy doctrines following the post–Cold War era, and annoyed by the "flip" use of such terms as Wilsonianism and isolationism, McDougal

develops an alternative analytical structure built around a biblical analogy. Just as the Bible has an Old Testament and a New Testament, so too does American foreign policy, each covering about a century and divided into four "books" that are focused on a foreign policy tradition. In the foreign policy "old testament," these books are liberty, unilateralism, the American system of states, and expansionism.

McDougal begins his study with the realization by the first generation of American leadership that American liberty was being made meaningless by the interference of foreign powers. As the weaker nation encountering foreign colonial powers in North America in its expansion across the continent, it saw the need for freedom of action. McDougal postulates that the old testament books flow logically one into the next—liberty at home, unilateral action abroad, an American system of states for the Americas, and territorial and commercial expansion—all reinforcing each other and serving the interests of an agricultural nation. It was a realistic view of America's place in the world.

The "new testament" of the twentieth century includes progressive imperialism, Wilsonianism, containment, and meliorism. The end of the nineteenth century ushered in a transitional period: as America reached parity with other powers across both oceans, it had an opportunity and a need to alter its conduct. The social progressivism seen at home in the early twentieth century merged with a desire to transmit those policy goals into U.S. relations with others. McDougal sees progressive imperialism as consistent with expansionism beyond our shores to preserve freedom of action; first with Wilsonianism and then with global meliorism during the Vietnam era, America sought goals beyond balances of power, through democratic institutions, Third World development, and human rights. Containment was consistent with an understanding of the balances of power, but McDougal clearly is uncomfortable with the willingness of some to fashion national security goals in terms of melioristic interests.

He forcefully argues that while all of the traditions purported to serve liberty, Wilsonianism and global meliorism sought to expand that purpose beyond America's shores, to serve others' interests in liberty rather than our own. He sees the "old testament" traditions as acknowledging and working within a balance-of-power system and argues that in the end, liberty for America requires a balance of power in the world. As to the future, McDougal's hypothesis clearly implies that the United States must craft a foreign policy based on a realistic projection of that balance, in light of a solid definition of its interests, and should not subordinate these interests to an overarching global desire to improve world conditions.

Missing, though, is a strong recommendation as to where the United States should go in the future. McDougal makes a good argument for limiting the scope of his work, saying that there need be no overarching foreign policy like containment to follow in the post–Cold War world. Where the author shines is in providing a unique analytical framework, grounded in historical inquiry, through which one

may view America's place in the world. Also, his extensive bibliography is a wonderful resource. Not only an original analysis, *Promised Land, Crusader State* is fine historical writing.

As we reach the millennium, the debate over foreign policy rages on a wide range of issues, from Bosnia to Nato and NAFTA to China. McDougal provides a historical framework from which readers, rather than the author, must draw their own conclusions.

JEFFREY J. SCHUELER
Gaithersburg, Maryland

Evans, G. Russell. *Death Knell of the Panama Canal?*. Fairfax, Va.: National Security Center, 1997. 237pp. $4.95 (paperback)

On 31 December 1999 the Panama Canal and all its installations are scheduled to revert to the Republic of Panama, in accordance with the 1977 treaty between the United States and Panama. This book, published by the National Security Center, was written by G. Russell Evans, a retired United States Coast Guard captain who is a student of the U.S.-Panama interplay on the canal. Evans argues for a treaty revision and a partnership of mutual benefit for both countries to take the place of what he calls the present "illegal" treaty. That the introduction was written by the greatly respected Admiral Thomas H. Moorer, former Chairman of the Joint Chiefs of Staff, requires that Evans's arguments be heard and considered.

The book undeniably raises an alarm about a strategic issue of vital security to the United States—the canal's future. Unfortunately, the author's presentation of the events leading to the approval of the canal treaty and of its subsequent governmental examinations is offered in parochial, passionate, and inflammatory language that mars the often laudable critiques offered.

The canal's completion in 1914 was in the interest of every seagoing nation, providing easy passage between the Atlantic and Pacific oceans. The canal was also smack in the middle of every military logistician's calculations on strategy. There it has remained, although with the passage of time and the concurrent changes in military technology, estimates of the canal's utility to the United States and its vulnerability to terrorism have waxed and waned. Regrettably, these issues have been assessed in a cavalier and erroneous manner by many U.S. strategists, whose thinking has been befuddled by the issues of aircraft carriers too wide to make passage, the threat of long-range offensive missiles, and the possibility that locks could be disabled by explosives.

The reality is that the canal could be defended against missiles by U.S. Army Patriot missiles or the impending Navy theater missile defense system. Surveillance techniques, now well practiced, could counter the transportable explosives threat. Regarding the canal's military utility, slim-hulled naval combatants now have great offensive lethality and accuracy in their missile systems, such as the Tomahawk missile. Meanwhile, the role of supporting military actions with beans, bullets, and oil is undiminished. Thus the book could be more effective if it offered a

substantial defense of the canal's strategic use by the United States, measured against present-day military scenarios. It would be an examination worthy of a naval war college. The canal represents an obvious, incontestable, and enduring fact: the saving of fifteen to twenty days' sailing time between the Atlantic and the Pacific. No thinking politician or military strategist can deny the vital importance of *time* as a factor in any crisis, large or small.

It is probably safe to say that neither military utility nor the canal's so-called vulnerability are dominant considerations in a peacetime environment where the United States is seen as the superpower. International relations and even domestic political issues weigh more heavily today in considering what the United States should do in the short time before the treaty is enacted. Unfortunately, the Evans book fails to consider what impact, if any, a reconsideration of the canal treaty might have on the U.S. position in Latin America or elsewhere. Recent interest by China and Japan in the canal is, however, noted and commented on.

As it now stands, the book offers only an accusation against the many who negotiated and approved an "illegal" treaty in 1977. The plea for a U.S. review that would salvage a position of partnership for the United States is buttressed only by complaints concerning the prospects of inadequate maintenance, and loss of drug-monitoring sites and physical property. A measure of partnership based on sound military interest is a good cause. Unfortunately, the game is already in play, and the voice of diplomacy seems to be muttering "going . . . going. . . ." Can this book's impact thwart the last word? Gone?

RAYMOND A. KOMOROWSKI
Captain, U.S. Navy, Retired
Falls Church, Virginia

Lowry, Robert. *The Armed Forces of Indonesia.* St. Leonards, Australia: Allen & Unwin, 1996. 282pp. $29.95

Robert Lowry is an Australian graduate of Indonesia's Army Staff and Command College, and his book is one of a series produced by the Strategic and Defence Studies Centre at the Australian National University. The Centre has a distinguished array of volumes on the region and its problems. Although published in 1996, this book is still relevant to the present situation in Indonesia, even after the transfer of power from the hands of Suharto to his protégé Dr. B. J. Habibie. Many of the players, institutions, and philosophical, political, and cultural beliefs are still in place. Lowry's views are endorsed in the book's foreword by General L. B. ("Bernie") Murdani, who, according to the *Far Eastern Economic Review*, is the former head of Kopkamtib (an intelligence and coordinating arm) and the officer in charge of the invasion of East Timor. Presently, Murdani is director of a Jakarta international relations "think tank."

Basically, Indonesia sees threats from several sources. First, it views many areas as potential internal threats—that is, areas that may seek possible separation, at the extreme, or readjustment of terms between the central government and local control, at the minimum. The

chief areas posing such threats are Aceh, Timor, and West Irian. Next, China is perceived as a future problem. Recent riots and revelations of sexual assaults against the Chinese during those riots have once again shown that the Chinese have never been accepted in the Indonesian midst. The possibility of China acting as a "big brother" and intervening worries the military. Lastly, there is a myriad of maritime problems facing the nation. A short list would include piracy, smuggling, and illegal fishing. Lowry examines them all.

This book lays out the command and control structure of the Indonesian armed forces, called the ABRI. The descriptions address strategical and geographical needs, as the Indonesians perceive them. Good use of Indonesia's history is interwoven in the telling, and examples are frequently used to illustrate key points.

The descriptions of the Navy are outweighed by those of the Army. It becomes obvious that Lowry feels compelled to be circumspect. He provides some examination of just what works and what is in bad need of overhaul, but without being too specific. To the author's credit, he points out the shortcomings of many units of the Army. However, the same cannot be said about the descriptions of the police, a vital component of the ABRI and partner in providing internal security. In examining the Navy, Lowry is not as critical of Habibie's past role in the purchase of the bulk of the former East German navy as the Asian press has been. While these are criticisms of the book, they are minimal in light of its general value.

Recent revelations about the ABRI, the Chinese role in the Indonesian economy, and transfers of money to the United States for political contributions makes Lowry's section on the ABRI and business very important to understanding tensions that could develop if U.S. congressional and journalistic investigations are pursued. As Lowry correctly points out, the Indonesian officer corps is allowed, maybe even expected, to augment its income by associating with the Chinese business interests; the encouragement continues into retirement. In this way not only do individuals receive income but the ABRI profits. So one sees the Indonesian Navy receiving, like any stockholder, its share of the profits of such entities as the Admiral Lines (shipping, what else!) and Bank Bahari. While this reduces the dependence on the treasury for funding (Indonesia requires less public money for its armed forces than others in the region), it can be problematic. The ABRI is close to the business community, many of whose members are overseas Chinese. Because it was felt that closeness would reduce dislike or even hatred, key Indonesians were brought into the Chinese business groupings. One of these entities, the Lippo Group, has been making political donations in the United States.

These revelations have not helped the ABRI image. They are too recent for Lowry's work, but the book is nevertheless a good foundation for understanding the monied overseas Chinese in Indonesia and the ABRI connection.

PETER CHARLES UNSINGER
San Jose University

Oberdorfer, Don. *The Two Koreas: A Contemporary History*. Reading, Mass.: Addison-Wesley, 1997. 480pp. $30

By most measures, the Korean Peninsula remains one of the most volatile places on earth—a place where three of the world's largest armies stand poised for war across a misnamed Demilitarized Zone (DMZ). The thirty-seven thousand American troops currently stationed in the Republic of Korea would certainly be immediately involved in any hostilities with the communist North Korean regime. The preservation of peace and the deterrence of war on the Korean Peninsula remain a central objective of U.S. foreign policy in East Asia.

While the Cold War ended for all practical purposes in the early 1990s, its existence is still firmly entrenched on the Peninsula, where forces of "good" and "evil" battle for supremacy. In some strategic sense the Peninsula is a land frozen in time. This situation (little has changed since the end of the Korean War in 1953) makes Don Oberdorfer's account of contemporary Korean history an important read for policy makers, East Asia hands, and even the casual reader of international affairs. His book provides outstanding background on events that have shaped the Peninsula since the early 1970s—many of them witnessed personally by Oberdorfer while he was a *Washington Post* journalist and bureau chief covering the Far East.

Considered by many to be one of the finest American journalists on the Northeast Asian beat, Oberdorfer is often called "the dean of American reporters on East Asia." An award-winning writer and a veteran of military service in Korea, the author conducted hundreds of interviews during the course of writing *The Two Koreas*. All the big names are here, including past secretaries of state, national security advisors, senior field commanders, and current policy makers. While academics might be disappointed with the references and documentation for further study, Oberdorfer's effort to interview all the main players and retain a balanced perspective is laudable. This book is likely to be the standard against which other books on modern Korea will be judged.

The Two Koreas chronicles the trials and tribulations of the Korean people as they struggle to deal with the challenges they have faced and that have divided their land over the past twenty-five years. It explains the tensions—and intrigues—which have surrounded the "Hermit Kingdom," including secret efforts at reconciliation and peace between the North and South, classic Cold War espionage, violence along the DMZ, and the assassination of senior political leaders, including a South Korean president. Most interesting perhaps for the American reader is the role (sometimes ineffective) that the United States has played in shaping contemporary Korean history.

A particularly important aspect of this book is the section on the nuclear question of the 1990s and how the United States and North Korea slid "precipitously" toward war over P'yongyang's brinkmanship in the spring of 1994. Many informed Korea observers believe that the likelihood of armed conflict at that time was misjudged and greatly overstated by the

Clinton administration. To his credit, the author acknowledges the differences of opinion over the threat and laments that it will be years before we learn just how close the Korean Peninsula came to war—again.

North Korea's aspirations to become a nuclear power have not been completely resolved, and the give-and-take over the 1994 Agreed Framework to "denuclearize" North Korea is likely to be a major issue in American foreign policy toward Northeast Asia for the foreseeable future. The history of the agreement, as detailed by Oberdorfer, will give readers an informed perspective on the complexity of the politics of the Peninsula and likely scenarios for the future as the present Asian financial crisis stresses the implementation of the pact.

Oberdorfer has made a significant contribution to our general knowledge of modern Korea over the last twenty-five years. In fact, it may be the best account yet of the current history of this tragically divided land. This book will help the layman to understand the dynamics of current events on the Korean Peninsula as well as assist policy makers and their staffs make better-informed decisions regarding the unique challenges it will continue to present to Washington and East Asia.

PETER T. R. BROOKES
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Mandelbaum, Michael, ed. *Post-Communism: Four Perspectives*. New York: Council on Foreign Relations, 1996. 208pp. $17.95

After seventy-two years, in 1989 communism dissolved before the astonished eyes of the world. Within two years a total of twenty-seven sovereign states emerged from the former Second World. These states have embarked on a journey with a clear destination: the Western club of nations, with their advanced free-market economies, liberal democratic political processes, and international institutions.

Michael Mandelbaum, a Council on Foreign Relations fellow and a professor at the Johns Hopkins School of Advanced International Studies, brings together the perspectives of four leading economists and political scientists in this valuable work. The book offers insights into what is arguably the most important social, political, and economic development of the past several decades: the demise of the Soviet bloc and of communism in Eastern Europe.

Mandelbaum provides a good overview of the transition process and the effect of regional differences on the speed and form of this process. Stephen Holmes and Robert Skidelsky argue that success depends on the adoption of certain policies that will allow a strong central state to arise at the same time as economic markets are developing. John Mueller and Charles Gati, on the other hand, believe that the transition has already completed its initial phase and is in fact essentially complete, although they differ on the result of that transformation.

One underlying factor in the success of the transition within a particular country is the legitimacy, rather than the effectiveness, of a state regime. This

becomes most apparent when using a regional filter. The three regions of concern—western, eastern, and southern—may have shared recent history, but they have markedly dissimilar pasts. The West (what we call Central Europe) was Habsburg, Catholic, and most susceptible to Western European influences. The East, on the other hand, was Romanov and Orthodox and less affected by such Western movements as the Enlightenment and the Reformation. The South was Ottoman and most removed from the social and cultural influences that affected the other regions. The states most successful in their transition to Western democracies and free economies are those closest geographically, culturally, and historically to the region from whence the definition of success comes. As Mandelbaum puts it, "In the political geography of post-communist Eurasia . . . the countries of the West are struggling to establish effective states while those of the South face the task of creating legitimate ones. The pathology that besets the first group is crime and corruption, the second is plagued by civil war."

Stephen Holmes argues that the overused term "transition" should be done away with, because it implies that the states involved somehow know where they are headed. That is not the case, he says; the concepts of chaos and fluidity better describe Eastern Europe today. Old habits and mentalities die hard, and these cultural legacies impede progress toward the creation of viable democratic and market institutions.

Holmes remains an optimist, however, and points out the relative lack of extremist political parties in the post-1989 picture, in contrast to Weimar Germany in a similarly unsettled period. Nevertheless, the administrative decay of state governments combined with the rise in criminal activity make prospects for successful democratic or market institutions problematic. As he puts it, "The Hobbesian problem has to be solved before the Lockean solution looks attractive." The crisis of ungovernability is the universal and central problem of postcommunist regimes. Liberal pluralism requires a strong state. Only when a government has achieved performance legitimacy by providing basic services and guaranteed liberal civic rights to its populace will its people gain confidence and optimism about the future necessary for a working free-market economy to develop and thrive.

Robert Skidelsky's chapter focuses on the economic transition from communism to capitalism in Russia. Skidelsky believes that the key to ensuring a successful transformation is first to create the legal and political institutions necessary for a capitalist market economy. This state-building exercise is more important than sequencing particular economic policies in the new states. The problem facing Moscow is that the state effectively lost control of nearly all its revenues, money now going to the various autonomous republics and provinces as well as the informal economy. Communism collapsed, he believes, because the state no longer had the will to enforce the command economy. This loss of centralized economic power is what we really mean when we describe the collapse of the Soviet Union.

John Mueller's central theme is that the new states of Eastern Europe and central Eurasia have completed their transitions to democracy and free market economies. What they have now is probably as close as they are going to get to the Western ideal. The most optimistic writer in this group, he argues that transforming a society is really quite simple, because people are naturally inclined to democracy and markets. They are prevented from achieving those systems only when blocked from doing so by authoritarian power. As Mueller puts it, "Democracy is fundamentally about leaving people free to complain and capitalism is fundamentally about leaving people free to be greedy." The prospects for continued evolution toward these goals are quite good, he suggests.

Charles Gati conducts a tour of new postcommunist societies, rank-ordering the states according to their success in transitioning to democracy and capitalism. His conclusion differs sharply from Mueller's, in that he does not believe many of the new states have achieved either of these goals. The dominant trend of the mid-1990s has been at least partial retrenchment, and most of these states face a future of neither totalitarianism nor democracy but something as yet undefined. The first goal of the revolution, sovereignty, has been largely achieved. The other two goals, however—political pluralism and a market economy—are less certain. Only a few states in Central Europe (and perhaps the Baltics) are likely to succeed in achieving democracy. Governments must deliver the economic goods if they expect to survive and thrive. By this criteria, most people in the postcommunist world feel cheated. The revolution has not delivered their dreams. Gati provides poll data that shows "discontent so acute and so pervasive as to invite comparison with public sentiments that prevailed prior to the fall of communism. As vast majorities consider the postcommunist course to be a failure, they are bent on checking its direction and arresting its development."

The book's contributors all bring authoritative views to their chapters, and the four perspectives together are a valuable contribution to European area studies. One comes away from this work with a sense of modest pessimism about the future of Russia and many of the other former Soviet states, particularly if one started reading with a preconceived belief that these states will achieve success only if they move to a nation-state system with a democratic, capitalist society much like our own. Such cultural biases are identified and questioned by the authors. At the end, one realizes that perhaps it is not the role of the West, or of the United States, to attempt to push these societies too quickly or with too many demands in the direction of our preconceived notions. A supportive but reactive policy may result in a better international situation than will interventionism.

JEFFREY A. LARSEN
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Blackwell, Robert D., and Michael Strummer, eds. *Allies Divided: Transatlantic*

Policies for the Greater Middle East. Cambridge, Mass.: MIT Press, 1997. 305pp. $22.50

Allies Divided is a book about alliances, interests, and priorities. It is also about consensus, and the dangers and opportunity costs to allies who fail to achieve one. Given the current situation in the Middle East, the book is important for two reasons. First, it presents a well balanced, insightful, and timely treatment of problems stemming from the increasingly divergent policies followed by America and Europe in what its editors call the "Greater Middle East." Second, it addresses these problems in a refreshingly broad context of geography, strategic issues, and time. Breaking as it does the sometimes narrow bounds of Middle East analysis and focusing on long-term political, economic, and military effects of current policy options, the book has a utility far beyond the narrow focus of today's headlines.

The editors are Ambassador Robert D. Blackwell of Harvard and Michael Strummer of the Stiftung Wissenschaft und Politik, Ebenhausen, Germany. They define the "Greater Middle East" as the area from the Maghreb through Egypt, Turkey, and the Persian Gulf to the Muslim republics of the Caspian basin. Both take a broad view of the region and of changing interrelationships and issues stemming from the end of the Cold War. Even with that broad definition, Russia, Afghanistan, and Greece loom large as major players in the analysis of regional problems and opportunities. Relationships with America and Europe are, of course, also central to the discussion. Key issues concerning the United States are the changing nature of American leadership in the post–Cold War era, the decisive role of domestic politics in foreign policy formulation, and a growing imbalance between the United States and allied military capabilities. The European connection covers these same points, but from two perspectives—of Europe as a political entity and of Europe as a collection of sovereign states with divergent attitudes and interests. Watching how both views sometimes play simultaneously is one of the more interesting aspects of this work.

Blackwell and Strummer see a basic concurrence between U.S. and European interests in the region: continuing access to affordable oil, curbing proliferation of weapons of mass destruction, and avoiding the spread of Islamic extremism. The editors also see a number of issues that divide the allies. They include significant differences of opinion over the relative importance of Israeli versus Arab interests, preference for engagement versus confrontation with Iran, choosing between either unseating Saddam Hussein or trying to modify his behavior, Turkey's proper role in Europe and in the region, and attitudes toward coercion as policy and the ability of states to apply it. All of these issues, and others, are analyzed and debated in a series of twelve articles written by noted area experts from both sides of the Atlantic. The essays cover a host of political, economic, and military issues, to include Nato and Western European Union expansion, Nato operations in Bosnia, a foundering Arab-Israeli peace process, renewed provocations by Iraq, growing domestic pressure by ethnic interest groups,

and growing tension between the United States and its allies over the wisdom of embargoes and sanctions. The essays are well researched and well written, and they provide keen analysis and practical suggestions for policy improvement. They are also interactive, in that the authors comment on each other's work throughout—a useful technique for highlighting points of agreement and differences of opinion.

In their final analysis the editors suggest that a decade of regional tranquillity would render moot the many diverging transatlantic interests and policies that bedevil regional politics today.

Unfortunately, they see little chance that the next decade will bring tranquillity or stability. That leaves the United States and its allies at odds over a series of serious problems, which none can solve unilaterally. The editors' bottom line is that neither the United States nor Europe can go it alone in the Middle East. A failure on the part of the allies to get their collective act together, however, will lead to damaged interests for all in the region, with the added threat of collateral political damage in Europe, Central Asia, and other dimensions of the transatlantic partnership.

THOMAS E. SEAL
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Sharkansky, Ira. *Policy Making in Israel.* Penna.: Univ. of Pittsburgh Press, 1997. 216pp. $19.95

At a time when government policies in Israel seem to be encouraging "war" between Jew and Jew, or between Israel and the diaspora, it is useful to come across a short work that attempts to explain the "routines for simple problems and coping with the complex." At the outset, Ira Sharkansky of the Hebrew University warns us that while Israel is a Western-style democracy, it is "not truly egalitarian, [since it] proclaims itself a Jewish state . . . [and] the style of its democracy rewards aggressive activists, who know how to maneuver for opportunities outside the framework of formal rules." It is also interesting to find an Israeli writer who candidly discusses the issue of emigration, and equally, who uses the term "occupied" when referring to the "administered" territories.

The author reminds us of the dangers of too closely comparing Israel with other democracies, for it suffers from memories of the Holocaust as well as the effects of wars with its neighbors and sustained terrorist attacks. Moreover, Israel's circumstances require a financial outlay five to ten times greater than that of other democracies, while the needs for censorship and security-directed regulations—including "moderate physical pressure" when interrogating detainees—exceed what is acceptable elsewhere. It is also useful to be reminded that the "Arab-Israeli problem is a loosely related cluster of problems involving Israelis and Palestinians, Jews and Moslems, the government of Israel and several Arab states, and rival groups within the Israeli and Arab populations. No problem has an objective existence."

Insofar as the Middle East peace process is concerned, it is "multidimensional with numerous parties, each

having some claims against the other that may get in the way of the primary Arab-Israeli dispute. At times, Syria and Jordan, Syria and the Palestinians, and Syria and Lebanon have preferred to secure points against one another at the expense of progress in resolving their disputes with Israel. Many kinds of antagonism affect the peace bargaining. Negotiators must be patient in waiting for opportunities," recognizing that any Israeli government (not merely Benjamin Netanyahu's Likud administration) has internal problems to contend with as well, not the least of them the "Holy Land" contentions of the ultra religious.

Writing in 1997 not long after Netanyahu's election, Sharkansky commented that "it is too early to determine whether the differences in style from the Rabin-Peres governments signal differences in the substance of Israel's policy" regarding Mideast peace. By mid-1998 the answer had become clear, even if one restricts oneself to noting the manner in which the government no longer sought to prevent Jews from moving into what might be considered Arab areas of Jerusalem. Moreover, we may be inclined to question the political acumen of one who could honestly suggest that the "end of the Arab-Israeli conflicts, or at least the prospect of an end, has come with the collapse of the Soviet Union."

Is it only Arab activists who view Jerusalem as the locus of a military crusade by government-assisted fanatics who want to march on the holy city, slaughter the infidels, and restore religious purity, especially if one bears in mind that the three religions competing for it rely on "theological notions of monopoly and exclusivity"? Sharkansky suggests that one way out of the Jerusalem dilemma might be to recognize the dual meaning of that name, distinguishing the "holy city" from the municipality, enabling the sharing of the responsibilities of administration, granting control of the hole places to particular religions affected, recognizing Orient House as a Palestinian government centre, devolving control over local services, and giving the city's inhabitants the "opportunity to choose which national entity they want to associate with. The status of Jerusalem's Palestinian residents could resemble that of Israelis who are also citizens of the United States or other countries that permit dual citizenship." But does United States nationality law recognize dual citizenship? It is irrelevant that Israeli law may do so.

Another problem facing Israel is the desire of large segments of its population to proclaim the need to abide by the words of the Torah, while others cling to the nation's position as it was in 1948, and yet others remind the authorities that the world does not stand still and that accommodation to meet political and technological changes and developments is essential (a situation perhaps similar to U.S. Supreme Court judgments made when interpreting modern legislation in light of the eighteenth-century Constitution). In other words, Israel must "cope," as does every other country, and "the elemental requirements of coping are to avoid impossible aspirations and to continue with the theme of accommodations where they already

show signs of evolving. Since 1967 things could have been much worse, but they can be made better." It is for this reason, Sharkansky suggests, while conceding that Israel has special problems, that the manner in which it seeks to cope with them is "useful for understanding other places as well. The treatment of each problem examined in this book has parallels elsewhere."

LESLIE C. GREEN
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Levison, Jeffrey L., and Randy L. Edwards. *Missile Inbound: The Attack on the **Stark** in the Persian Gulf.* Annapolis, Md.: Naval Institute Press, 1997. 160pp. $28.95

In 1987, while patrolling the Persian Gulf in international waters, USS *Stark* (FFG 31) was attacked by an Iraqi F-1 aircraft with two Exocet missiles. Although *Stark* had correctly identified and tracked the aircraft, the ship did not fire a shot in self-defense, and it was struck by both missiles. *Missile Inbound* comprehensively documents the attack, the damage control effort, and the subsequent investigation. The story is both an inspiring tale of heroism and a stern warning of how well-intentioned people can fail with disastrous consequences.

Damage control, though not the main focus of the book, deserves special mention. The second chapter contains an exciting account; it reads like a Tom Clancy novel but has the advantage of being true. Although the inevitable use of Navy terminology may make it difficult for some readers, anyone who has ever participated in a shipboard fire drill will enjoy this section. Useful diagrams are included that illustrate the challenge faced by the crew of the *Stark*.

However, the book does contain some flaws. The heart of *Missile Inbound* is devoted to the investigation of the attack. Most of the information presented is taken directly from testimony given during the investigation and is thoroughly documented. However, the choice of quotes seems to display a bias in favor of the executive officer and tactical action officer (TAO) and against the commanding officer. For example, Levison and Edwards severely criticize the commanding officer of the *Stark*, Commander G. R. Brindel, for not having accepted full responsibility for the incident at the investigation—possibly shielding subordinate officers from punishment. They speculate that Commander Brindel did this on the advice of counsel, but they seem not to have attempted to ask either person if that was actually the case. In contrast, the TAO's attorney is quoted extensively. Randy Edwards himself represented the executive officer. The absence of input from either Commander Brindel or his counsel makes the discussion unbalanced.

The chapters on the investigation also fail to clarify two important points. First, the *Stark* apparently never detected the incoming missiles on radar, but the text is unclear as to whether or not it should have expected to detect them. Secondly, there is extensive discussion about at what point *Stark* should have issued UHF radio warnings to the Iraqi aircraft, whereas in the

last chapter the authors state that the aircraft did not even have a UHF radio. If this is the case, then the question should have been why U.S. forces did not know that planes flown by our "allies" did not have UHF capability.

Both authors are attorneys, and the chapters describing the investigation and legal proceedings benefit greatly from their expertise. Edwards has over twenty years of military experience in the active and reserve Marine Corps, as is clearly evident in his ability to place events in their proper context. All legal terms are clearly explained so that a layman may follow the proceedings without difficulty. Levison and Edwards also spell out every Navy acronym. Unfortunately, in many cases the words behind the acronyms are not enough to convey to someone without recent Navy experience what the term means. A glossary would have made the book accessible to a wider range of readers.

Missile Inbound presents its story in a manner sympathetic to the officers of the *Stark* while maintaining overall loyalty to the concept of accountability. The authors question whether any other ship would have done better in the same circumstances. The *Stark* incident challenges anyone interested in national security: how well will units untested in actual combat perform in the first minutes of battle? How do we know when training has been sufficient? In peacetime, how does one choose officers who will be effective in combat? While *Missile Inbound* does not answer these questions, it provides interesting material for the debate.

LILLIAN A. BURKE
Lieutenant, U.S. Navy

(We note with sadness Lieutenant Burke's passing on 2 May 1998.)

Hynes, Samuel. *The Soldiers' Tale: Bearing Witness to Modern War.* New York: Penguin, 1997. 318pp. $24.95

Based on a series of lectures given by Samuel Hynes at the University of Toronto in 1994, this book is an extended rumination on twentieth-century war memoirs. The author's stated purpose is to understand what war is actually like by studying the stories of veterans about their wartime experiences. He contends that because wars exact such great costs from society, it has been deemed necessary to surround them with "myths." These myths are not untruths, he writes, but rather simplified narratives that have evolved from war to give it meaning. There are "bad," "good," and "necessary" wars; nonetheless, and however politically necessary they may be in justifying war's terrible costs, these myths obscure its grim realities—realities found only in personal narratives. Hynes believes that by setting these personal narratives against the myths of war we can learn the whole story, not just what is politically acceptable.

However, in his search to discover what war is really like (not just the "war in the head" we imagine), the author faced considerable obstacles. For one, he concedes that war narratives are ultimately contradictory. Indeed, some say that war is an unmitigated disaster, others that it is an experience not to be missed. Another problem is that most veterans are emphatic that the experience cannot be communicated—if you

were not there, you cannot understand. (There is, of course, an element of irony in this stance; why write about an event that cannot be communicated?) Yet despite the lack of agreement about the nature of wartime experience and the consensus that the experience, in any case, cannot be communicated, Hynes maintains that reading such works are indispensable, because they bring us closer to understanding what war is really like.

Hynes brings impressive credentials to the book, as a Marine pilot in World War II, the author of a number of books on war and literature, and a former professor of literature at Swarthmore College, Northwestern University, and Princeton University. His military experience affords him an insider's insight into war, while his scholarly background equips him to judge the literary merits of war narratives and to render his judgments in a fine prose style. In short, Hynes possesses a sharp eye for detail, a good ear for authenticity, and the ability to communicate in an authoritative and engaging fashion.

The book's six chapters examine, in order: World Wars I and II, "which made modern war global and technological and democratic"; Vietnam, "which changed the way Americans thought about their nation in the world"; and what Hynes considers the undeclared war waged in this century against the weak—prisoners of war, victims of the Holocaust, and Japanese civilians in Hiroshima during the atomic bomb attack. According to Hynes, each of the above is a myth-making conflict that has shaped our understanding of the meaning of war.

The book begins slowly. Despite Hynes's knowledge of World War I, his treatment of that war is relatively uninspired. There are few memorable lines, save for the quotes, and his examination is more descriptive than analytical. Given the historical richness and complexity of World War I and Hynes's considerable credentials, his handling of it is somewhat disappointing.

Fortunately, the book picks up steam as it goes along; each chapter is better than the one preceding it. Hynes's writing becomes more passionate and his analysis cuts deeper.

In the chapter on the Second World War, Hynes argues that the men who fought in it had read, and were powerfully influenced by, the canonical literature of World War I. Ironically, the "antiwar" myth created by that literature had fostered among its readers a new kind of romanticism about war. As a result, the World War II generation of soldiers was as enamored of, as much as appalled by, the carnage described in these books. Hynes argues that deep down these men, who were coming into manhood in the late 1930s, longed to fight their own war rather than experience it vicariously.

The chapter on the Vietnam War is perhaps the most emotionally charged in the book. Hynes clearly has strong feelings about it and makes no attempt to hide them. He states that Vietnam brought new voices to the genre of war literature. In previous wars of the twentieth century the most notable memoirs had been written by members of the middle class. Vietnam broke this pattern. This war was largely fought and recorded by America's poor, unemployed, urban youth. Culturally and

socially distinct from earlier generations of soldiers, Vietnam veterans changed the vocabulary of war memoirs. They introduced into the genre a more prominent role for sex and a coarseness of language heretofore mostly absent. Hynes also notes the direct influence of music on U.S. soldiers in Vietnam. Rock and roll was the voice of this generation of soldiers, and their music's defiant antiestablishment, and often antiwar, stance is a constant undercurrent throughout most of the narratives. Indeed, Hynes finds that Vietnam memoirs are uniquely filled with bitterness and humiliation.

An unexpected treat is the chapter on victims of war who are routinely forgotten in standard histories of armed conflict. The author makes a compelling case that these individuals' experiences are just as valuable to our understanding of war as those of soldiers in the thick of battle. We learn in their writings much, for example, about the psychology of prisoners of war: how they view themselves, how they view each other, and how they are viewed by their captors. The sections on the survivors of the Holocaust and of the atomic bomb at Hiroshima are also fascinating. They offer gripping accounts of merely surviving in the face of unbelievable horrors.

One useful category of individuals left out of the book is war correspondents. The members of the Fourth Estate make a brief appearance in the chapter on Vietnam, but only to illustrate America's growing disillusionment with the conflict. Their absence from the book is unfortunate. They are distinct from the other groups represented here, as noncombatants who voluntarily place themselves on the frontlines; yet like the groups represented in the book, journalists have experienced the blasts of war, and many have lost their lives as a result of it (the legendary Ernie Pyle comes to mind). Their inclusion would have offered the perspective of trained observers duty bound to report events as accurately as possible.

Another shortcoming of the book, albeit minor, is the lack of subheadings. The text moves through various topics with no breaks, save for additional space between certain paragraphs. Had the author instead used more prominent visual clues and made more of an effort to divide the chapters into sections, he would have imposed greater order on the text and made it easier to read and understand.

The book's positives far outweigh its negatives. Hynes has sifted through a large set of war memoirs and come up with a gem of a book. *The Soldiers' Tale* is a judicious, entertaining, and sure-handed examination of wartime experience through the prism of twentieth-century war narratives. This book deserves the attention of those who wish to understand war beyond tactics, battles, campaigns, and high policy by confronting the voice of raw experience.

MICHAEL CRESWELL
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Knott, Richard A. *A Heritage of Wings: An Illustrated History of Naval Aviation.* Annapolis, Md.: Naval Institute Press, 1997. 339pp. $49.95

Interesting and informative, this book offers a well written introduction to

U.S. naval aviation for those new to the subject. It also offers an appealing compendium of facts and anecdotes for the aviation devotee. Dick Knott's book is easy to read and provides well organized summaries of the principal actors and key events in the history of aviation in the maritime service. The subject lends itself to the visual sense, and reader appeal is enhanced by roughly two hundred photographs of notables, aircraft, and incidents, and by helpful diagrams and charts. The illustrations provide the reader with a link to the humanity of the history, to the sometimes obscure and occasionally larger-than-life men about whom the book is written, and to their legacy.

Knott begins by tracing the general evolution of nascent military aviation but soon abandons parallel developments of U.S. Army and European aviation to focus on the United States Navy. For the rest of the book the center of attention, except for an occasional foray to the Marine Corps, is on the Navy and its people. Rich detail is plentiful in the early chapters, less so in the chapters on more recent years—probably reflecting the greater number of primary sources from earlier in this century. The author recounts many hair-raising adventures of the early aviation pioneers, and he details the bureaucratic trials and tribulations of those laboring to establish aviation in a service not noted for easy adaptation to change. All branches of aviation development receive their due: seaplanes, lighter-than-air machines, rotary and fixed-wing aircraft, and naval astronauts in space. The evolution of the aircraft carrier and of its aircraft and the principal role they have played in U.S. naval history are discussed in detail. The author's background in maritime patrol aviation is evident in frequent references to milestones in land-based naval air. Early aircraft and related equipment designs are chronicled and highlighted as "dry holes" or as winners. The impact of combat, the world wars in particular, and the interesting boost to fledging carrier aviation provided by the 1922 Washington Naval Treaty make good reading.

Knott delivers his punch line midway in the book, at the end of an excellent section on World War II: "Naval aviation was no longer a question mark. . . . The old myth put forth by Billy Mitchell and others that carrier aircraft could not operate against land-based aviation had been debunked repeatedly. . . . The stalwart advocates of naval aviation in general, and carrier aviation in particular, had been fully vindicated."

I concur with the author's assessment in a later chapter that the misapplication of U.S. air power during the Vietnam War presaged eventual defeat for the United States. Knott outlines the errors of civilian leadership and policy in those years, injecting numerous anecdotes highlighting the courage and sacrifice by naval aviators in Southeast Asia, but he fails to hold naval or other U.S. military leaders accountable for not speaking out publicly or exposing the flawed policies.

The most recent two decades of Navy aviation history are examined in less depth than the previous seven, but overall the book provides a good, encapsulated, and visually stimulating history. I found only a few errors regarding units and numbers with which

I am personally familiar, and I give the author high marks for accuracy.

In conclusion, it was a pleasure for this former midshipman fourth class to read, and an honor to review, this book written by Richard C. Knott, his first naval science instructor at the Villanova University Naval Reserve Officer Training Corps (NROTC) Unit. No doubt the author's admiration and enthusiasm for, and advocation of, naval aviation thirty-five years ago had some influence on the future career path of this reviewer. It is a proud heritage of wings.

WILLIAM J. FALLON
Vice Admiral, U.S. Navy

Poolman, Kenneth. *The Winning Edge: Naval Technology in Action, 1939–1945*. Annapolis, Md.: Naval Institute Press, 1997. 256pp. $32.95

In this study on the impact of technology on World War II's naval campaigns, Kenneth Poolman describes the development of a variety of naval sensor and weapon systems and analyzes their use during the war at sea. Poolman, a World War II veteran of the Royal Navy, is a prolific writer on naval combat, and his book demonstrates his mastery of naval technology.

The author begins by describing how Allied navies turned to new technology—including Asdic (sonar), radar, high-frequency direction finding, antisubmarine mortars, and rockets—in response to Germany's naval campaign against Allied supply lines. He also describes how the Germans fielded acoustic torpedoes, the *Schnörkel*, and radio-controlled bombs to strengthen their blockade. While the author gives greatest emphasis to the Battle of the Atlantic, he also devotes considerable attention to the war in the Pacific, examining the development of carrier aviation, surface-search and fire-control radar, and cryptanalysis by the U.S. Navy.

Given the breadth of his subject and the brevity of the volume, the author's description of naval technology is occasionally terse to the point of confusion. Even the technologically proficient reader is likely to stumble, for example, over the author's discussion of the evolution of sonar systems. The book also contains a number of mistakes. Poolman argues that the German air force dropped its plans to develop a heavy bomber because such an aircraft was unnecessary; in fact, the Luftwaffe canceled its heavy-bomber programs—the Do-19 and Ju-89—in 1937 because of slow progress in developing engines for the aircraft and resource constraints as much as the low priority of the aircraft in a continental war.

While the book's title makes it "the winning edge," naval technology is at best a partial explanation of tactical success and failure. At the outbreak of World War II the Japanese navy possessed the world's best fighter aircraft, the Mitsubishi A6N Zeke (or Zero), as well as the world's most highly trained aviators. In the end, the United States beat Japan not by fielding its own superior technology but by developing tactics to counter superior Japanese aircraft technology. Similarly, the U.S. Navy took a pounding during the Guadalcanal campaign despite its substantial lead in naval radar. Technology clearly

played a role in the Japanese navy's effectiveness; the Japanese possessed the Type 93 (Long Lance) oxygen-propelled torpedo, a weapon with range, speed, and payload much greater than those of contemporary American and British weapons. Here again, however, technology is at best a partial explanation: the Japanese navy inflicted considerable losses upon Allied naval forces off Guadalcanal because it had developed a coherent tactical system for conducting night combat, one that included operational concepts and organizations allowing it to employ its technology (much of it seeming today decidedly "low-tech," such as high-quality optics) to maximum effect. These examples suggest that while technology is an important element of victory, it does not by itself offer a winning edge.

THOMAS MAHNKEN
Naval War College

Stevens, David, ed. *The Royal Australian Navy in World War II.* Allen & Unwin, 1996. 212pp. (approximately $23 U.S.)

This book represents the outcome of a conference titled "The Royal Australian Navy in World War II," which was held in Australia in 1995 as part of a nationwide program, sponsored by the Australian federal government, called "Australia Remembers 1945–95." The book is an edited collection of papers presented at that conference, and as such it is quite different from many of the more traditional histories with which many of us are familiar.

I was immediately struck by the diversity of subjects covered, which range from analysis of strategic and policy considerations, through commentary on selected operations, to discussion of industrial and demographic influences. Indeed it would be fair to say that there is something for everyone in this collection, which is well edited and presents a readable and coherent account of its subjects.

The contributors to the book are as diverse as its topics, including both professional and part-time historians, as well as people who were actually involved in the events discussed. This adds a unique dimension to the book, and the mixture of backgrounds and treatments generally works well.

The book contains an excellent summary chapter by Frank Broeze, and for many readers this might be a very good place to start; it will serve to focus consideration of the individual chapters. Because of its nature, this publication does not attempt to address any topic in great depth; however, enough detail of events is provided to support the commentary and analysis. What this does is invite the reader to conduct further reading and research.

Many chapters represent only a first step in examining issues that have in the past received scant attention. Typical of this are the chapters on the industry perspective by Chris Coulthard-Clark, the role of women by Kathryn Spurling, and social and demographic issues by Jason Sears. As a surface warfare specialist, I was particularly interested in Bruce Loxton's account of the loss of HMAS *Canberra* in the battle of Savo Island. The author was serving in *Canberra* at the time and has made a

detailed, long-term study of that battle to support his conclusion that the ship was lost to friendly fire, in the form of torpedoes from a U.S. destroyer. His chapter inspires one to read his more complete work on the battle.

There is one chapter, however, that left me wondering at its inclusion: "The Forgotten Bases: The Royal Navies in the Pacific, 1945." This contribution by David Brown has an almost total Royal Navy focus and is not in harmony with the remainder of the book.

Those who had the vision to organize the conference from which this collection of papers was derived deserve particular praise. The result has quite significantly improved our understanding of the history of the Royal Australian Navy during the Second World War. We are all products of history, and the way we operate and continue to develop into the future is heavily influenced by that history. This book points to why the Royal Australian Navy has developed the way it has since the end of World War II. There is much more history to be written and evaluated. This volume sets a firm foundation for that work.

GEOFF MORTON
Australian Naval Attache
Embassy of Australia

Walker, Mark. *Nazi Science: Myth, Truth, and the German Atomic Bomb.* New York: Plenum Press, 1995. 325pp. $28.95

Among the many books to have come to press concerning the behavior of German scientists in the environment created by Hitler, *Nazi Science* presents the most balanced view. The popular conception of German scientists, especially nuclear physicists, in that era is that they easily fit into three distinct categories, Nazi, anti-Nazi, and neither one nor the other. This trichotomy is too simplistic a categorization of the mixed motivations that existed and induced individual behavior. For most scientists then, day-to-day realities made them behave in a complex and inconsistent manner.

Mark Walker presents a coherent view of German science and dispels the myths presented to us by proponents with varying agendas. The selective disclosure of excerpts of the Farm Hall recordings by Leslie Groves in *Now It Can Be Told* (2nd ed., Da Capo, 1983); Samuel A. Goudsmit's *Alsos* (2nd ed., Tomash, 1983); self-serving revisionism by Carl Friedrich von Weizsacker and Werner Heisenberg, propagated by Robert Jungk's 1958 bestseller *Brighter than a Thousand Suns* (Harcourt, Brace) and by Thomas Powers's *Heisenberg's War: The Secret History of the German Bomb* (Knopf, 1993) are all placed into context in this well documented history. Walker shows how one of Hitler's first and most loyal followers, the Nobel laureate Johannes Stark, was rejected in the end by the Third Reich establishment in favor of "White Jews," like Werner Heisenberg. Science under National Socialism remains controversial, fascinating, and disturbing, because it is the history of scientists as *fellow travelers*, adjusting their behavior and what they said to avoid difficulty with authorities. This pattern abetted opportunistic individuals who

rode the party bandwagon for the purpose of self-aggrandizement.

Nazi Science is recommended reading for the student of history who appreciates the complexities of human motivations and who can accept a world containing many shades of gray. In order best to appreciate Mark Walker's book, one is encouraged to read beforehand at least one of the many books about the era, such as *Lise Meitner: A Life in Physics*, by Ruth Lewin Sime (Univ. of California Press, 1996), or *Hitler's Uranium Club: The Secret Recordings at Farm Hall*, by Jeremy Bernstein and David Cassidy (American Institute of Physics, 1995), or one of the books mentioned above. With some prior knowledge of the Nazi nuclear effort, the reader should be able to comprehend and appreciate the nuances exposed here.

If there is a shortcoming in this book, it is perhaps in the title. *Nazi Science* pertains almost exclusively to Nazi nuclear science and neglects the other subfields of physics, let alone the disciplines of genetics, anthropology, biology, and so on. These fields were perhaps more adversely affected than was nuclear science.

XAVIER K. MARUYAMA
U.S. Naval Postgraduate School

Vause, Jordan. *Wolf: U-Boat Commanders in World War II.* Annapolis, Md.: Naval Institute Press, 1997. 249pp. $29.95

Jordan Vause captures the history and tradition of Germany's submarine service through an exemplary analysis of its commanders. Determined to find common threads of character and personality, he begins his narrative with imperial Germany's World War I strategy of unlimited submarine warfare, continues through the murderously effective World War II wolf pack, and concludes with a relevant postmortem on the ultimate tragedy of that war's destructive aftermath. Ironically, rather than proving the existence of a common *anima* of personal and professional behavior, in the end the author finds that "the man [U-boat commander] was stubborn in eluding any image at all." Nonetheless, the richness of Jordan's research and his comfortable manner of narration perfectly complement the considerable historical value of this book.

Wolf is not a sympathetic treatment of the often relentlessly effective German submarine service (U-Bootwaffe). Vause's success lies in his development of a personal, understanding, and yet incisive portrayal of Germany's World War II U-Bootwaffe commanders—uniform, and yet individually unique. Attempting to construct the persona of the Reichmarine's undersea service, Vause functions as a forensic pathologist, largely disproving a propagandist view of savagely efficient automatons bent on mindless slaughter at sea. He lays open to critical review the professional zeal and individual élan of the U-boat commanders, who sank millions of tons of Allied shipping at a cost of thousands of lives—actions that came perilously close to bringing Great Britain to its knees. Carefully fitting personalities over the stick-figure caricatures, he allows individual U-boat commanders to emerge as crafted

images subside. Of particular interest is Vause's treatment of Karl Dönitz—paternalistic submarine force commander, commander in chief of the German navy, National Socialist sympathizer, Führer, and ultimately convicted war criminal.

Wolf is an excellent book, highly recommended for both the casual reader and the serious student of military history. An extract from the foreword by Jürgen Oesten, commander of U-61, U-106, and U-861 and recipient of the Knight's Cross, is fitting: "In the beginning, a war is exciting; toward the end, it is a bloody gamble in which you try to achieve the maximum result with an acceptable risk so as to have at least some chance of staying alive. If the U-boat commander had the ability to detach himself from the actual situation, if he had been able to look at himself as though on a movie screen and judge on that basis, his decisions might have been better. You, the reader, have that ability. Please judge fairly."

SAVERIO DE RUGGIERO
Newport, Rhode Island

Sondhaus, Lawrence. *Preparing for Weltpolitik: German Sea Power before the Tirpitz Era.* Annapolis, Md.: Naval Institute Press, 1997. 344pp. $39.95

As Lawrence Sondhaus tells us, for a long time the North German coastal kingdoms and independent city-states got along without a navy. It was not until 1848 that the idea of a navy arose seriously. This was when, despite the wishes of their German populations, the king of Denmark decided to incorporate into his realm the adjacent duchies of Schleswig and Holstein. After the Danish army defeated the king's opponents, Prussia and other neighbors sprang to the rescue. In response, the Danish navy blockaded the German ports, strangled their trade, and thus forced a stalemate.

It was this embarrassing condition that led to the sentiment among Germans for a navy of their own. What they got was slow in coming, uncertain of purpose, and—while the German armies were winning wars against Denmark (1864), Austria (1866), and France (1870)—barren of accomplishment.

Commanded for years by a succession of Prussian generals, after the unification of Germany the navy (now called the Imperial Navy) acquired enough new ships for the work it attempted, though for long those ships and their engines, armor, and weapons came from foreign builders. Though the generals saw the navy's politico-military value, they ensured that its budget never grew so large as to affect that of the army. Each winter most of the ships went into hibernation and the sailors learned infantry tactics. Perhaps as a consequence, German seamanship was abominable, German accidents were numerous, and German naval tactics hardly existed.

It was not until 1888, many years after its beginning, that the German navy came under the command of an admiral. Even so, it was a service with little to boast about. In 1892, of Europe's six great navies it was fifth in size, just behind that of Italy and just ahead of Austria-Hungary's.

But change was coming. In 1890 Rear Admiral Alfred Tirpitz took command of the Baltic station. Tirpitz saw that there was no connection between a shore-bound admiral's sparse operational plans (focused on fighting Russia, France, or both together) and the fleet's tactical abilities to carry out such plans. Tirpitz "argued that the best tactics were worthless if the captains and crews of the fleet could not execute simple maneuvers." Officers and crews had to be able to "operate individual ships competently, as a prerequisite to maneuvering with other ships in a squadron." (This new emphasis on shiphandling and tactics was to last; at Jutland in 1916 the High Seas Fleet demonstrated both fine individual ship skills and excellent large-formation tactics.)

Not because he was well liked, nor because he was a man of principle (he was neither), but because he was brighter and more forceful than any of the kaiser's other admirals, in 1897 Tirpitz became state secretary of the Imperial Navy Office and the most influential officer of his time. Sondhaus tells us that his political victories in the Reichstag in 1898 and 1900 "set Tirpitz on a course to become the most successful political figure in the history of the Second Reich, after Bismarck."

Adept as he was at both political and naval tactics, Tirpitz was not a strategist of any sort, diplomatic, military, or naval. But his vigorous activities in those lines pleased his emperor, the unsuitable Wilhelm II, and made the admiral world famous. As Sondhaus illustrates, Tirpitz's naval strategic thought was that of a child, his diplomatic strategic thought that of a lunatic. Though it is just beyond the scope of this book, between them Tirpitz and the kaiser built in German shipyards, with German engines, armor, and weapons, a great fleet. They also created out of a once-friendly Great Britain an even greater enemy, an achievement that made their great fleet unemployable.

Sondhaus brings these people and events (most of them unknown in the United States) to our attention in this handy-sized book, a book written clearly, concisely, and interestingly. Moreover, he has made sure that his publisher provided both sufficient illustrations of the people, ships, and events of which he writes and enough maps of the areas that his readers will need to know. Together Sondhaus and the Naval Institute Press have given us an excellent book.

FRANK UHLIG, JR.
Naval War College

Martin, James Kirby. *Benedict Arnold, Revolutionary Hero: An American Warrior Reconsidered.* New York: New York Univ. Press, 1997. 540pp. $34.95

No military officer has received such universal condemnation as Benedict Arnold, the Continental general who sought to deliver George Washington and Fortress West Point to the British in 1780. Arnold has attracted his share of biographers in recent years, including Clare Brandt (*The Man in the Mirror*) and Willard Sterne Randall (*Benedict Arnold: Patriot and Traitor*). Adding his name to this list is James Kirby Martin,

a professor of history at the University of Houston and author of *A Respectable Army*, who succeeds admirably in presenting the most comprehensive view of his controversial subject.

Martin seeks not to remodel our perception of Arnold but to place Arnold in the context of historical realism, as part of his overall objective of reconsidering all the evidence and avoiding facile judgments. Too frequently, Martin posits, our perception of Arnold has been shaped by the retrospective prism of his treason. To comprehend Arnold more completely, the author reckons properly with Arnold's times. Arnold was hardly the only patriot who returned his allegiance to the crown, but the magnitude of his contributions to the revolutionary effort made his treason all the more reprehensible. What Martin does effectively is restore balance to our study of Arnold and explain Arnold's subsequent treason.

The beginning of Arnold is not 1780, the year of his treason, but 1741, that of his birth. Detailing his troubled childhood and his ascent to social and economic prominence as a New Haven merchant, Martin chronicles Arnold's emergence as the finest tactical commander in the Continental Army during the initial years of the Revolution. Along with Ethan Allen and his "Green Mountain boys," Arnold participated in the capture of Fort Ticonderoga in May 1775 and later commanded a wing of the American army that invaded Canada. Though he was wounded in the unsuccessful assault on Quebec, Arnold returned to a hero's welcome.

Promoted to brigadier general, he enhanced his martial reputation by destroying a British flotilla on Lake Champlain in 1776. Though denied a promotion that he felt he deserved, Arnold put personal bitterness aside to rout the right wing of "Gentleman Johnny" Burgoyne's army at the crucial battle of Saratoga. Had Arnold been among the slain at Saratoga, he would have been remembered as an American Hannibal. Instead, Martin's Arnold is an embittered officer, smarting from congressional bickering and favoritism that repeatedly led to promotion of officers far junior to him and far less conspicuous in battle.

It is with Saratoga that the reader begins to see the darker side of Arnold's character. By Arnold's standards Congress was corrupting the ideals of the Revolution, as evidenced not by his personal humiliation but the near deification of Horatio Gates as the "hero of Saratoga." Whereas Gates obtained a gold medal to commemorate the victory, Arnold sustained a debilitating would that left him a cripple and "defamed his personal honor."

Arnold's post-Saratoga career validated his worst conceptions of the Continental Congress. By the spring of 1778, Arnold had evolved into a disenchanted patriot. Given command of Philadelphia after the British evacuation of the American capital in June, he again ran afoul of Congress when several delegates accused him of improprieties and demanded a court-martial. Though he was exonerated on all but two minor charges, Arnold's disillusionment was complete. In the eyes of this officer, who had put aside personal prosperity and family obligations to serve the Continental cause, Congress had abandoned its principles.

His final descent into treachery was problematic and needs little scrutiny here. Indeed Martin reserves but a few pages to address the actual betrayal at West Point. By 1780 the Revolution had reached its nadir, and Arnold himself had discarded its ideals. With his commitment to virtuous service completely eroded, he forsook the cause to which he had dedicated so much energy. Therein lies the true tragedy of Benedict Arnold.

COLE C. KINGSEED
Colonel, U.S. Army

Shenk, David. *Data Smog: Surviving the Information Glut.* San Francisco, Calif.: Harper Edge, 1997. 250pp. $24

For most of history, the quest for knowledge and its component, information, promised to improve the quality of people's lives. In this century many in the national security community have come to believe that more information will increase the quality of policy makers' decisions. But is information *power*? Shenk argues that technology has increased the amount of information available to such an extent that very little of it is of any use. Scholars, researchers, and decision makers can become stricken with "analysis paralysis"—either swamped in too much information that is of too little use, or forever waiting for the next piece of information to come in before taking action or making a decision. Shenk is not antitechnology but rather a techno-skeptic: technology allows us to do what we do faster and in more abundance, but not always better. Technology does not fix systemic organizational problems; applying it as a cure-all increases implementation costs and does not lead to solutions of management difficulties. Moreover, it is not a substitute for sound thinking and good policy.

For the first time in history, then, increasing the amount of information is not the automatic solution to a problem. While this book is written for a general, almost "pop," audience, it should be of interest to crisis decision makers and the intelligence community in particular. It is written in easy-to-understand, conversational language, which makes the author's points easy to generalize to other contexts.

What the book lacks, however, is a satisfactory suggestion for dealing with today's increase of information. The author suggests limiting our overload by decreasing our use of technology (the Internet, e-mail, faxes, etc.) to gather information, and increasing the amount of time set aside for reflection about a *reasonable* amount of data. This is a good start, but what is needed to deal with "data smog" is more rigorous thinking *about* the information and where a given piece of information "fits." In short, we need better theory and policy regarding what is being observed, sought, and so on. Pieces of information are like grains of sand—you should not need to see each grain to know that you are on a beach, and you should not need to see each grain to know that there will be high and low tides on that beach. We can know these things because we have a general theory of the sea. The result is the development of "rules of thumb," or shortcuts to information, which speed up its evaluation and interpretation and

thus prevent analysis paralysis. Policy makers and commanders in the field do not need all the information that technology affords them, because, as Shenk points out, beyond a certain level of information the quality of the decision product diminishes. Increasing information results in a need for better frameworks for evaluating that information. *Data Smog* provides little insight toward developing them; nonetheless, it is a helpful book for identifying information overload and its consequences, as well as an important first step toward solving the problem.

BRENT STUART GOODWIN
Brown University

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Recent Books

Packard, Wyman H. *A Century of U.S. Naval Intelligence*. Washington, D.C.: Dept. of the Navy, 1996. 455pp. $42

Packard explains that his book "is designed for use as a reference work, a topical chronology." It is by far the most comprehensive such record available, chronicling the evolution of American naval intelligence since its birth in 1882. Following a useful General Summary, the book dissects naval intelligence topic by topic: phases of intelligence (collection and production), means of collection (HUMINT, PHOTINT, ACINT, and ELINT), the methods employed (attachés, reconnaissance from air, surface, and submarine platforms), and numerous subsidiary topics, such as the use of reservists and the long relationship of the Office of Naval Intelligence (ONI) with the Naval War College. The author heavily emphasizes World War II, both because of his intimate personal knowledge of the time and the fact that it was the period when naval intelligence truly came into its own.

While this book has the staid aura of an "official" publication, it is nevertheless enormously useful for any student of ONI's development. Perhaps most helpful is Packard's work on the less-well-documented aspects of ONI's history, including counterintelligence, censorship, foreign disclosure, and the interrogation of prisoners of war. As an organizational history, this book reflects the author's three decades of research and writing. Whether the student is interested in OPERATION PAPERCLIP or the training and subsequent career development of each naval intelligence officer who studied in Japan, this will be the definitive reference for some time to come.

Rasor, Eugene L. *The Southwest Pacific Campaign, 1941–1945: Historiography and Annotated Bibliography*. Westport, Conn.: Greenwood, 1996. 304pp. $75

Number 19 of Greenwood's "Bibliographies of Battles and Leaders" takes up the entire course of one sector of the Pacific War, from the disastrous "ABDA" campaign through the operations of General Douglas MacArthur's Southwest Pacific Area command. Adapting the familiar series format, Rasor follows a brief historical overview with a description of the relevant research facilities and of the available documentary resources: by type (surveys, manuscripts, atlases, etc.); by subject (land, sea, air, strategy, tactics, personalities, logistics, and a lengthy section on intelligence); and in alphabetical order (a numbered listing to which the previous sections refer). As with other books in the series, a chapter is devoted to nontraditional sources, for instance, oral history, film, fiction, even computer games. Throughout, and especially in two final chapters, there

can be found evaluations of the usefulness of sources and facilities, and suggestions for further research. Eugene Rasor, who has contributed several titles to the series, teaches history at Emory and Henry College. (Author and subject indices.)

Ψ

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Ψ

The Chief of Naval Operations Announces . . .

"The 'New' Naval War College"

"On 24 July, I inaugurated the 'new' Naval War College, headed by Vice Admiral Art Cebrowski. This is the first step in focusing strategic inquiry, visionary innovation, and conceptualization of doctrine in Newport, with the goal of staying well ahead of the 21st century threats to our nation and Navy. . . .

"Pursuant to this goal, I have expanded the responsibilities and authority of the President of the Naval War College. Reporting to Vice Admiral Cebrowski will be a new organization, the Navy Warfare Development Command (NWDC), which will champion warfare concept development, design and lead the fleet battle experiment program, and synchronize and standardize Navy doctrine. As such, the NWDC will complement, coordinate, and reinforce on-going fleet efforts. The NWDC will also leverage academic studies and research being accomplished by resident Naval War College faculty and students as well as war games and decision support exercises.

"My total commitment to this undertaking is reflected in the superb officers chosen to lead it. . . . Reporting to Vice Admiral Cebrowski will be Rear Admiral Bernie Smith, as Commander of the NWDC, and Rear Admiral Pete Long, as Provost of the Naval War College. . . .

"I am very excited about the future of our Naval War College, especially the potential for innovation that will result from the alliance we will form between Newport and the fleet. . . . [The] key to ultimate success will reside in the ideas, concepts, and experiments derived from—and submitted by—fleet sailors. Our goal is to harvest . . . ideas, develop . . . insights, and provide a vehicle for change which guarantees tomorrow's maritime supremacy. . . ."

Jay L. Johnson
Admiral, U.S. Navy
NAVADMIN 174/98, 10 August 1998