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Review Essays

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Review Essays

From *Parameters*, Summer 1996, pp. 130-157.

James Kievit and Steven Metz, "[The Internet Strategist: An Assessment of On-line Resources](#)." pp. 130-45.

Antulio J. Echevarria II, "[Anticipating the Future: New Perspectives on Prussian and Austrian War Planning](#)." pp. 146-51.

Charles R. Shrader, "[Logistics in Peace Operations and Humanitarian Assistance](#)." pp. 151-57.

The Internet Strategist: An Assessment of On-line Resources

JAMES KIEVIT and STEVEN METZ

[An [updated version](#) of this essay is to be maintained at the Internet site of the [US Army Strategic Studies Institute](#). --
Editor]

Information has always been the lifeblood of strategic analysis. Once it was difficult to acquire enough information to assess the security environment, monitor changing events (especially those far from the major media centers), and draw reasonable conclusions. Today, technology has changed things--analysts now have access to a virtual torrent of information. But while the quantity of information is no longer a problem, assuring its timeliness and quality can be. For strategic analysts, the ability to collect information rapidly and to evaluate its relevance and validity is now a crucial skill.

To a large extent, the computer has become the tool of choice for strategic research. By allowing the nearly instantaneous transfer of information, computers certainly help assure it is timely. But computer-based research has its own set of problems. Analysts trained in library, archive, and word-of-mouth research must learn where to look for salient electronic information. The **Internet** offers a partial solution to this problem. (Terms in bold in this essay are defined in the [glossary](#) at the end of this essay.) Through the Internet, nearly everyone with a microcomputer and a modem can easily access millions of documents and files on a vast range of topics. But the Internet is not a panacea for the problems of strategic analysis. To make maximum use of it, researchers must understand its strengths and weaknesses.

An Internet Primer

The Internet is a network of millions of linked computers around the world. These can range from the simplest PC to supercomputers owned by universities and governments. The Internet is not centrally managed or controlled. No one establishes rules for the type of material it contains. Anyone with a computer and some relatively simple software can establish a **site**, a location of information that other Internet users can examine, download, or print. A few sites are "pay for use" or require a password, but the vast majority are open. This anarchy and fluidity leads to great variation in the quality of information on the Internet, ranging from the useless and the banal to the indispensable and the astute. It takes some skill to distinguish quickly the two, particularly since many of the most visually appealing and interesting sites are intellectually shallow while some of the most important sources of information are, to put it bluntly, rather boring to look at. Style presently has the edge over substance--the Internet contains many glossy magazines and slick brochures, but only a few weighty tomes.

In addition, the Internet is an extraordinarily fluid medium, literally changing by the minute. New sites appear at a breathtaking rate--one of the major on-line Internet catalogs receives 22,000 new listings every day. At the same time,

many sites go away. Because it only takes a few minutes at a computer to change a site, they change regularly. This means that mastery of Internet information is extremely perishable. A researcher away for a few months will find a massive amount of new information during his next visit, but may also find that older data is no longer available. The Internet is less like a library where the holdings remain relatively constant than a public bulletin board whose information has a brief lifespan.

On top of the vast amount of new material entering the Internet, its structure and essence are also changing. The Internet was initially built by governments and universities as a research tool to allow the rapid exchange of data among scientists. Today, most of its phenomenal expansion is fueled by commercial firms selling on-line access or marketing goods and services. Advertising and "pay for use" sites have appeared. The look of the Internet also has changed dramatically. Text-only **gopher** sites are being replaced by graphics-laden and sometimes beautiful **web pages**. This transformation will continue for some time. The Internet of the year 2000 will be as different from the Internet of 1996 as Disney World is from a scientific conference. This is a mixed blessing. More of value is available on the Internet every day, but there are also more distractions to wade through while getting to it.

Three Internet features are most relevant for strategic analysts: the world-wide web, news groups, and electronic mail (**email**). Email is a means of interpersonal communication that falls somewhere between the immediacy of a phone conversation and the more thoughtful but slower exchange of ideas previously done by writing letters and memos. The specifics of using it vary greatly according to the mail software being used. **News groups** are collections of individuals interested in a particular topic who post messages, questions, problems, or issues on the Internet and reply to those left by others. The messages can be stored at an Internet site that participants access using **web browser** software like Netscape, or they can be distributed by email. News groups are, in effect, electronic discussions and debates. While there are thousands of them dealing with every conceivable topic, most of those focusing on strategic, political, and military issues are relatively unsophisticated, making them of limited value for serious research. There is great potential, though, for limited-access news groups restricted to true experts. This is probably one wave of the future.

The **world-wide web** (also known simply as "the web"), which is based on **home pages** combining text, graphics, links to related sites, and, increasingly, audio and video, has become the most popular and rapidly expanding element of the Internet. In a sense, the world-wide web is the Internet's library and can be a powerful source of timely information. But there are no librarians monitoring either the categories or the quality of information available on the world-wide web. More than any other part of the Internet, the world-wide web requires researchers to develop effective, personalized techniques for rapidly finding appropriate data and assessing its quality. This is not an easy task for busy national security specialists and strategic analysts. To guide the way, the rest of this essay will offer an introductory roadmap of the web, suggesting sites of current value and noting others with the potential to become important resources.

Catalogs and Search Engines

Since one of the major challenges for users of the world-wide web is locating appropriate material, many of the most useful sites do not provide actual data but instead offer ways to find and connect to other sites. These are the Internet's catalogs or **gateways**. Their greatest value is that they provide collections of **links**. Links are pictures or special text (usually colored differently from the rest of the text and underlined) which automatically transfer the user to another Internet site when they are clicked with a mouse. For instance, while connected to computers in Switzerland or Australia, clicking on a link to the Strategic Studies Institute will temporarily disconnect the user from the overseas computer and connect him to the one at Carlisle Barracks, Pennsylvania, where the Strategic Studies Institute home page is kept.

Among the most extensive and powerful catalogs is *Yahoo*. (The names of specific Internet sites are shown in italics. The [Internet address](#)--or **URL**, which stands for "uniform resource locator"--used to access each site is listed at the end of the article.) Originally the project of computer scientists at Stanford University, *Yahoo* is now a commercial firm and is a well-maintained site. *Yahoo* provides a brief description of and electronic link to thousands of Internet sites on every conceivable topic, including many political, economic, and military ones. It also offers links to news groups and has recently added the Reuters news wire service. *EiNet Galaxy* is an equally slick and powerful general gateway to Internet sites.

While *Yahoo* has its own search tool, some of the dedicated Internet **search engines** are even more powerful and flexible. Most will scour the web using parameters provided by the user and then identify sites that meet the stated conditions. The user can access the sites located through the search by clicking on them in the report provided by the search engine. *InfoSeek* is an example of a search engine for finding web sites and news groups. While it offers limited (but still valuable) free access, a subscription is inexpensive and includes many useful features, such as the ability to construct a personal news wire. *WebCrawler*, *Inktomi*, *Magellan*, *Excite*, *Alta Vista*, *Open Text*, and *Lycos* provide similar functions. Increasingly, "meta search" services like *Starting Point* can be used to connect to all the major search engines, thus making it unnecessary to access each one individually. Some other sites, such as the *Internet Sleuth*, search on-line databases.

Many of the catalogs, including *Yahoo*, provide a list of new Internet sites. *Net Scout Services* offers even better ways to do this. It includes a weekly newsletter called the *Scout Report* that summarizes new Internet resources, and a daily service called *Net Happenings* that routinely identifies about 30 new sites. Both of these applications can be accessed directly over the world-wide web or received by email. Information on email subscriptions is available at the web sites. *Netsurfer Digest* is a similar weekly compilation of new sites delivered by email. *Internet Resources Newsletter* is not distributed by email and must be accessed at its web site, but it provides a wealth of information aimed at serious researchers rather than those seeking mostly entertainment on the Internet. This means that substance counts more than glitz. It is a British site, so British resources dominate the listings, but those from many other countries are also listed and assessed. Some other Internet sites such as *USA Today* and *Cable News Network* provide short lists of new sites, but their focus is more on home pages that are entertaining or popular than on those that provide research resources.

US Department of Defense Sites

Department of Defense organizations are extensively represented on the Internet, which is not surprising since the Internet can trace its evolution to the government's "survivable communications system" initiative. But despite the numbers and logical structures of most Department of Defense web sites, they tend to be simply electronic brochures offering a basic description of the organization, its mission, and location that offer no usable information for researchers. Examples include *TRADOC* (the US Army Training and Doctrine Command), the *Defense Intelligence Agency*, and *US Military Academy*. Only a few Department of Defense sites offer research material on national security strategy or policy or on military strategy.

DefenseLink is an entry point to Internet sites operated by the Office of the Secretary of Defense, the armed services, and related defense agencies. More important, *DefenseLink* provides a means to search and download Department of Defense directives, obtain transcripts of important speeches, and connect to other sites dealing with specific military operations (for example, *BosniaLink*). And, via *DefenseLink Locator*, it provides a rudimentary but usable database of other defense information sources. *DefenseLink* is hindered by the absence of a directory of key personnel in the Office of the Secretary of Defense. Two related sites, the *Joint Chiefs of Staff* and the *Unified Commands*, are not particularly useful, providing only biographical information and fact sheets on their organizations. All three have the potential to grow into key resources.

Each of the military services has a centralized directory of its Internet sites. *Army Link*, as its name suggests, is a **hotlist**, a listing of links, to the more than 400 Army home pages. Most of these are of little interest to a strategic analyst. The sites are indexed alphabetically and by subject area. One must be careful, however, when using the subject index. For example, the *Strategic Studies Institute* is the only entry under "strategic planning," but at the same time it is not listed under "studies." *AirForceLink* provides a searchable index to more than 170 Air Force sites. While some include a list of contacts, few of them offer email addresses or information for strategic research. *NavyOnLine* provides links to more than 80 Navy organizations. It is possible to look at recent Navy press releases on-line but, short of manipulating the page's computer source code, an entire document must be printed to obtain any part of it. Entering "strategy" into the *NavyOnLine* search index resulted in only one **hit** (which is to say, it located only one source), and this was the long-range plan for the development of the Naval Undersea Warfare Center. Finally, *MarineLink*, the revised US Marine Corps home page, offers public relations material, access to Marine-related publications, and a hotlist to more than 50 other USMC sites. Unfortunately for the strategic analyst, its most valuable resource--a "concepts and issues" document--is not particularly "user-friendly."

The *Defense Technical Information Web* is an alternative starting point for Department of Defense Internet sources and has a useful link locator page. The *Army Knowledge Network*, intended eventually to be a conduit of all Army electronic information, thus far merely identifies those developing the structure. One of its subordinates, the *Automated Historical Archives System*, "develops, maintains, and distributes on-line the Army's electronic, multimedia archives for post-Vietnam contingency operations and the peacetime preparation for war and planning for the future." This would appear to be an ideal source for the strategic analyst. Unfortunately, it currently includes very little information. At that, it is better than the *Battle Labs* site, which was last updated in April 1995, contains a "we're working on this database" message dated November 1994, and at present simply provides statistics on the number of individuals who have accessed it.

The *Marshall Center*, which is the Internet site of the United States European Command's George C. Marshall Center for Security Studies, is a state-of-the-art page that is well-organized and provides useful information about the center's staff. It also offers on-line access to some publications, documents, and conference reports dealing with European security. The Army's *Foreign Military Studies Office*, which is charged with assessing regional military and security issues through open-source media and direct contact with foreign military and security specialists, provides on-line access to its publications on geostrategic issues and military operations other than war, including a few translations of foreign publications. The *Army Research Laboratory* site has one worthwhile document, a "Strategic Plan" which outlines the Army's near-, mid-, and long-term technology goals. The page, however, contains lots of graphic "buttons," which makes it slow to load. And tapping its "phone book" link resulted only in "file not found" responses. The *Center For Army Lessons Learned* furnishes an index to some Army branch publications. These, while of only limited interest to the strategist, might be valuable for those more interested in the operational or tactical levels of warfare.

Though its name might not initially attract a strategic researcher's attention, *Force XXI* deserves a visit. It includes a searchable version of *FM 525-5: Force XXI Operations*, the Army's "conceptual foundations of War and Operations Other Than War in the early decades of the 21st Century." The search engine identified 19 references to "strategy." The site also includes a *Campaign Plan* for revising the Army's structure, *Commander's Conference* pages providing current and projected budget, personnel, and logistics information, and on-line access to numerous *Articles* relating to the future operational environment and changing the Army. And, although showy, the *Force XXI* pages seem well-designed and for the most part relatively quick to load.

Finally, one might expect the Internet sites of the high-level military colleges--the Department of Defense's academics--to prove more useful for research. This is not entirely true. The *National Defense University* (NDU) does provide a well-organized link page to its affiliated colleges and organizations. It is, though, a classic case of an Internet site whose developers were seduced by the temptation of elaborate graphics. These do not augment the value of the site, and they make it excruciatingly slow to load. This tendency to add glitz at the expense of usability is a recurring one on the Internet, especially in sites designed by commercial firms. The home pages of NDU's subordinate colleges and organizations vary in quality. The only items of use to researchers on the *Armed Forces Staff College* site are bibliographic listings from its library links. The rest is the sort of descriptive information on courses and departments found in any college catalog. Both the *National War College* and the *Armed Forces Staff College* have recently added faculty directories, including members' research expertise and contact information. Unfortunately, the NWC directory's font size is so small that the information is nearly unreadable. The *Industrial College of the Armed Forces* directory is organized alphabetically by department, but provides neither expertise nor contact information. It evidently intends to provide eventual access on-line to publications, since links are already included but are "under construction." The most valuable link from the *National Defense University* is to its *Institute for National Strategic Studies*. This well-organized page includes a searchable index (which provided 21 references to "roles and missions"), the ability to view the full text of published studies on-line, conference and symposia information, and a staff directory including biographical data and contact information.

Air University, while its graphics make it slow to load, is a major innovator in at least one area: it provides an interactive opportunity, via its link to 2025, to share and explore ideas on air and space capabilities for the future. Any individual can participate in this Air Force study by submitting thoughts on the entry forms provided. *Air University* is also valuable for its book and publications listings of airpower-related material. Currently the listings provide summary and bibliographic information only; there is no capability to obtain full text on-line, although hard-copy

ordering information is supplied. There is also both an author and title index to recent airpower publications. *Air University* also links to *Air Chronicles*. The graphics make this slow to load but the site does provide access to essays and articles via its "Contributor's Corner," including some with strategic relevance. The more recent, however, cannot be viewed with a normal browser but only with "Adobe Reader" software--which *Air Chronicles* provides via a downlink if you have sufficient free disk space. Others are very large, up to 1MB, so be prepared to wait for them to load. *Air Chronicles* also links to *Airpower Journal*. At this site, some recent articles and short essays can be viewed on-line and all can be downloaded.

Although expansion is under way, the existing Internet site of the *US Army War College* is limited. Its *Center for Strategic Leadership* and *Peacekeeping Institute* home pages, while well laid out, provide only organizational, biographical, and contact information. Its *Military History Institute* offers several photographic archives and some bibliographic material, but unfortunately there is not yet on-line access to even a small portion of the Institute's holdings. The *Strategic Studies Institute* does offer some research material. Modeled on the *Institute for National Strategic Studies* site, the *Strategic Studies Institute* site has the usual organizational material and publication catalog, but also provides full text of many of its analytical studies, conference and symposia information, a staff directory with biographical data, phone numbers, and email addresses, and a collection of links to other Internet sites of value for strategic research. Its major shortcoming is lack of a searchable index to its publications. A recent addition to the USAWC pages is *Parameters*, the Army's senior professional journal. This site provides a complete index of past articles (searchable if you are using Netscape), full text of selected articles and review essays from recent issues, and information on subscribing or submitting manuscripts for possible publication.

As yet, the US Naval War College has no presence on the net. The *Naval Postgraduate School* does have a site, but its focus is on the technological aspects of operations research and systems analysis. The school's Department of National Security Affairs is listed, but cannot be accessed. And the *Naval Postgraduate School* site suffers from the all-too-common lack of a faculty email directory.

Other US Government Information Sources

Many executive branch agencies have established world-wide web home pages with basic, brochure-level information about their organization and function, but as with the Department of Defense, few of these can serve as a resource for analysts or researchers. The *National Security Agency* and *Advanced Research Projects Agency (ARPA)* are typical, although the ARPA site does offer some press releases and testimony. Similarly, the *National Technical Information Service* site is a catalog of the agency's vast holdings of scientific, technical, and business-related information, but little of it can be read on-line, downloaded, or printed. If it were, researchers would gain greatly. The *White House* site is one of the most popular on the world-wide web. It is glitzy and fun, but offers no material of value to strategic analysts.

A few other executive branch sites do include important research material. The *World News Connection*, which provides news stories from around the world, is exceptionally valuable to regionalists dealing with areas overlooked by the mainstream media. Essentially it is an on-line version of the Foreign Broadcast Information Service (FBIS) reports. The downside is that users--even government ones--must pay for the service. However, the subscriptions are flexible, offering both short-time access for researchers involved in a single project and longer terms for individuals or organizations with a recurring need. The *Voice of America* site is especially frustrating. It is a potential gold mine, but its developers cannot seem to make the site work correctly. For a long time, it was a gopher site with broadcasts categorized only by date rather than topic and without a search engine; users had to know in advance precisely what they were looking for. Recently, *Voice of America* converted to a web site with a search engine. This seemed to be a tremendous step forward, but at the time this article was written, none of the links to sources found by the search engine worked. And, since the list did not provide broadcast dates, it was impossible to find any information.

The *Department of State* is one of the more frustrating locations on the web. For a strategic analyst dealing with US foreign policy, this site, which provides foreign policy news, speeches, statements, and reports, could be an extraordinarily useful tool for keeping abreast of official policy. But while it has been improved recently by the introduction of a web home page and a search engine, it remains awkward to use and difficult to access. To get a printed copy of a one-page story from the *Department of State Dispatch*, for instance, users must print the whole

document, which sometimes contains more than 50 pages. The *Library of Congress* web page also combines tremendous potential and serious shortcomings. It may eventually be the premier site on the Internet for researchers, but now it offers mostly basic information about the Library, a few links to other sites, and searchable catalogs. Once an analyst finds a citation from the catalogs, he or she must then go to a library to retrieve the material rather than having on-line access to it.

The United States Congress has both good and mediocre Internet sites. The *Senate Armed Services Committee* and the *House National Security Committee* sites simply list members and provide contact information. The *Congressional Email Directory* is a good, searchable resource. The general US Congress site--named "*Thomas*" after President Jefferson--is one of the most important pages on the Internet for Americans interested in political affairs. It provides full text of legislation, a searchable transcript of the Congressional Record, bill summaries and status reports, information on hot legislation organized by topic, a copy of the US Constitution, and a useful primer on the lawmaking process. It also includes links to other congressional sources, including senators and representatives with email or home pages. With improvements in its search engine, *Thomas* could move from a very good site to a truly superb one. In addition, *GPO Access* is an extremely well-designed site providing a powerful search tool for legislation and other congressional documents. Public access to documents is either from a Federal Depository Library or directly from the Government Printing Office. *CapWeb*, which is not affiliated with the government, is another source of congressional information.

Think-Tanks and Professional Journals

There are several gateways dealing specifically with think-tanks and research organizations focusing on world politics and security policy. *International Security Network* and *IANWeb* are good examples. In fact, the Swiss-based *International Security Network* is currently the single most useful site on the world-wide web for national security analysts and researchers. Its list of links to think-tanks, universities, government organizations, and news groups is as exhaustive as possible in such a fluid medium. It also provides a wealth of other information on the structure and lexicon of the Internet and a few documents that can be downloaded. The *Electronic Headquarters for the Acquisition of War Knowledge* (EHAWK) is an excellent gateway to Internet locations dealing with military history and news. It also includes links to military-oriented news groups and email discussion groups. *Bombs and Bullets* is a more limited attempt to do the same; this page needs renovation, however, as many of its links are invalid. *SACIS* is a truly outstanding site with links to the United Nations, various UN agencies, a range of other international organizations, databases of international law documents, and a few other international affairs pages. With the *United Nations Scholars' Workstation*, the *SACIS* site offers better ways to access United Nations material than the UN's own home page. Some useful links are also found in the *Stanford Center* (for International Security and Arms Control).

Another type of gateway is found in the *American Universities* and the *Colleges and Universities* sites, which provide links to many universities around the world. Most of these, in turn, have faculty email directories which can be used to contact experts in a variety of fields. The university home pages vary greatly in quality. Some, like Columbia University, make it easy to identify faculty experts in specific fields and send them email. Others, like the University of California at Berkeley, are difficult or impossible to use, either failing to list faculty expertise and email addresses, or requiring the user to go to two or three separate sections of the site to locate and contact experts.

As should be expected, many major think-tanks and organizations dealing with security and military issues approach the Internet as a marketing device rather than a research resource. Their sites are primarily on-line catalogs, offering a basic description of the organization and information on ordering and purchasing their products. An example is the *International Institute for Strategic Studies* (IISS), publisher of vital documents like *The Military Balance*, *Strategic Survey*, *Survival*, and the *Adelphi Papers*. Similar sites are the *Center for Strategic and International Studies* (CSIS), *Jane's Information Store*, *Stockholm International Peace Research Institute* (SIPRI), and *Association of the United States Army*. A few others such as *RAND*, *Brookings Institution*, *Stimson Center*, and the *Hoover Institution* (on War, Revolution, and Peace) offer a little more, including detailed information on their research programs and some archives. The *RAND* page also offers a basic information sheet on the Arroyo Center, its Army research division, and some other elements like the Center for Asia-Pacific Policy. Unfortunately, the site doesn't make it easy to contact specific researchers. The user who knows whom he or she is looking for from the start will do well. Others, however, must wade through the *RAND* pages to find the name of a specific researcher, and then go back to the beginning to

search an email directory. More advanced Internet pages provide a direct mail link from their directory of experts. In this regard, the *Brookings* site is even worse: it fails to provide an email directory for its analysts (or even a phone listing).

In contrast to sites like *RAND* and those maintained by CSIS and IISS that require Internet users to order their publications using email or other means, some University-affiliated think-tanks, such as the *Jaffe Center for Strategic Studies* and the New Zealand-based *Centre for Strategic Studies*, do offer actual on-line reports and studies. Unfortunately, there tends to be an inverse relationship between the influence of an organization and the amount of material it is willing to provide on-line. The more prestigious and important think-tanks like CSIS, *RAND*, *Brookings*, IISS, and SIPRI offer little usable material over the Internet, while less influential think-tanks often give more.

In an attempt to counterbalance the "military-industrial complex," some defense spending watchdog groups have established well-designed Internet sites. These include the *Center for Defense Spending* (which also offers the latest issue of their publication *Defense Monitor*) and the *Military Spending Working Group*. While these can be unabashedly critical of the defense establishment, they provide useful alternative perspectives from which a strategic analyst can gain a balanced understanding of the defense budget debates.

Other Internet sites provide information on a specific national security topic. These include *MILNET*, with open-source data on worldwide military and intelligence structures, weapons, and force strengths; the *Program on Peacekeeping Policy*, which includes news, reports, and links on peacekeeping; and the *Carter Center*, with information about the organization founded by the President Carter, and the involvement of the center in Third World democratization and development. Similarly, *IntelWeb* offers valuable descriptions of the intelligence communities of most nations; the *Center for Nonproliferation Studies* provides material on the spread of weapons of mass destruction and their associated technologies; *Democracy Net* covers the work done around the world by the National Endowment for Democracy; and the *United States Institute of Peace* gives a collection of links to sites, news groups, and other resources concerned with conflict resolution.

Among the "single issue" sites, the *Joint Services Conference on Professional Ethics* stands out. It provides a forum for military officers and academics to discuss ethical issues relevant to the military and includes a posting of a monthly ethical problem with comments and discussion from other participants. It also offers papers from an annual conference. This is not truly a strategic site--its greatest use is probably for cadets and junior officers still constructing a professional persona--but it is so well done that it vividly illustrates the potential of the Internet. On a different issue, the *Institute for the Advanced Study of Information Warfare* is a valuable attempt to provide basic information and links on a subject of rapidly increasing importance.

The Internet also provides strategic analysts a way to keep up with key academic journals covering world politics and security issues. A number of them have home pages providing subscription information, the contents of the most recent issue, and usually a few articles that can be read, downloaded, or printed. Examples include *Washington Quarterly*, *Foreign Affairs*, *Foreign Policy*, *Journal of Democracy*, *International Security*, *International Organizations*, *Political Science Quarterly*, *Fletcher Forum*, and *World Politics*. Some important journals of opinion which cover world politics and national security, such as *Atlantic Monthly*, *National Review*, and the *New Republic*, also provide on-line versions of the current issue and sometimes recent back issues as well.

International Organizations and Foreign Government Sites

A few foreign governments are moving rapidly to provide Internet access to information on their foreign and defense policies. There are virtually no government web sites of value in Latin America or the Middle East. Some governments in Eastern Europe appear interested in establishing Internet sites, but their pages are often difficult or impossible to access. In Sub-Saharan Africa, the *African National Congress* site is very good and provides South African news as well as policy statements, but is the sole representative from the region. Somewhat more surprisingly, the Japanese *Ministry of Foreign Affairs* page is one of the few official sites in the Asia-Pacific region that offers much for researchers. It includes summaries of current issues, press conferences, major speeches and articles, and the diplomatic blue book. Elsewhere, the *Australian Defence* and the Canadian *Department of National Defence* pages are good, but deal more with recent reorganizations than with strategy or world affairs. The Canadian Forces College provides a

solid collection of military links on its *Peace and Security* page.

Western European governments have established some very useful web sites, including the German Foreign Office's *Auswärtiges Amt* (which also includes a link to the English-language *German Information Center*), the Swiss *Zentralstelle für Gesamtverteidigung*, and the *France Defence* site. The British *Ministry of Defence* home page shows the potential of these types of resources. It contains a summary of the 1995 United Kingdom "White Paper," and the full text of the 1994 paper. In addition, this page contains comprehensive press release information, including access to the UK "Central Office of Information Internet Services," which provides a searchable listing of all press releases by all UK government organizations. *UK CALS NEWS*, another link on the *Ministry of Defence* page, provides information on the UK defense acquisition process and the current status of some materiel programs. The *Conflict Studies Research Centre* of the Royal Military Academy (formerly the Soviet Studies Research Centre) is an old-fashioned gopher site, but it provides access to a large number of excellent studies on military and security issues in the former Soviet Union.

A number of important international organizations also have Internet sites. The *World Bank* includes useful reports and documents on Third World development. The *United Nations* gopher is potentially invaluable but extraordinarily difficult to use. For example, Security Council or General Assembly resolutions are listed only by number and date rather than by subject, and the site has no search engine. Here again, a researcher must know in advance precisely what he or she is looking for. With the addition of a search engine and some other updating, this could be one of the most useful locations on the Internet for strategic analysts. As it stands, the UN's Internet site is like the organization itself: persistently struggling to keep pace with global change but never quite succeeding. The text of many treaties signed under the aegis of the United Nations can be found more easily at the *Multilateral Treaties* gopher of Cornell University. Many regional and specialized organizations, such as the *Organization of American States* and the *Organization for Economic Cooperation and Development*, have built web sites, most of which provide only basic information about the organization's structure and mission rather than the text of resolutions and other material of interest to an analyst.

Europa, the web site of the European Union, provides by far the most useful collection of information of any regional organization. It includes policies and agendas as well as basic organizational information. The newly opened *NATO* site is an absolute treasure trove, with texts of basic documents, communiqués, press releases, speeches, and studies. It also offers information on seminars and workshops, and has a large collection of documents on the Yugoslavia crisis, both from NATO itself and from the United Nations.

News and Regional Information

The availability of world news on the Internet is expanding. The Reuters news wire service is now provided in a number of spots including *Yahoo*, *Excite*, and commercial service providers such as America Online (AOL). AOL is particularly valuable because it gives the full Reuters wire rather than the selections offered by *Yahoo* and *Excite*. AOL provides information for research on areas of the world like Africa that do not receive much attention from the mainstream media. Using America Online for research, though, brings new headaches since, in the experience of one of the authors, on-line sessions frequently entail technical problems. The *Associated Press* is also available, but stories stay on line for only a short time and there is no archive. While coverage of world events is less comprehensive than on the full Reuters wire, it is comparable to the shortened version of Reuters found on *Yahoo* and *Excite*. The *Cable News Network* posts transcripts of many of its broadcasts as well as audio and video clips. The material covers many topics, but not in much depth. *National Public Radio* also provides transcripts of newscasts and some feature stories. The *USA Today* page provides a truncated version of the paper. The *New York Times* site includes the full newspaper.

Coverage of specific parts of the world varies by region. There is much material on Europe, including the excellent *OMRI (Open Media Research Institute) Daily Digest*, which covers the former Soviet Union, and there are some good Asian news sites. In Sub-Saharan Africa only the Republic of South Africa is well-covered on the Internet. *News Briefings from the ANC* publishes nearly a hundred news stories a day from the South African press. Coverage of Latin America and the Middle East is thin. The best way to find specific regional news sources is through the outstanding collection of links on the *World News Index*. *Yahoo* and the *International Security Network* also offer links to some regional news providers.

Conclusions

Is access to the world-wide web a necessity for contemporary strategic analysts? Probably not. The web is still in its infancy. The bulk of information remains brochure-level and most web sites are marketing devices rather than sources of data. Analysts wading into the Internet for the first time will find it a jungle. Not only is a small proportion of the available information truly useful, but that tends to be badly organized and difficult to use. Nearly all relevant information of value can be found elsewhere in printed form. In many ways, the web is for a national security professional as a microwave oven is for a cook. A cook with plenty of time and a well-stocked kitchen doesn't need a microwave; without them, a microwave may be essential. So too with the web. A strategist with few time pressures and access to a well-stocked library doesn't need the web. Strategists facing time pressure or who don't have a well-stocked library available will find it more useful.

Yet even this condition is changing rapidly. With the exception of a handful of electronic magazines ("e-zines" or "cyberzines"), contemporary providers of information see the web as a supplement to conventional publishing and distribution rather than a substitute for it. Eventually there may be information on the web that is not available in any other medium; today, however, the Internet is far from a mature resource. Users and information providers are still experimenting to find out what works and what doesn't. Change is extensive and rapid; new resources and methods appear and others fade away daily. Within a few years, though, an analyst's collection of Internet **bookmarks** will be as valuable as a Rolodex of personal contacts is now. The astute analyst will prepare for this opportunity. By exploring the web today and developing effective methods for finding and using electronic information, he or she will be ready when the Internet finally does make the leap from luxury to necessity.

An Internet Glossary . . .

Bookmark All software for accessing the world-wide web provides a way to place a *bookmark* at a site to make it easier to find in the future. Since the user may have followed many links to arrive at a site, it is wise to make a bookmark for those that may be of use. A well-organized collection of Internet bookmarks will become an increasingly valuable asset for strategic analysts.

Email Electronic mail. Messages sent between computer users over a network.

Gateway A web site that offers links to other web sites rather than providing information or data on a topic.

Gopher Predecessor of the world-wide web. A menu-driven system offering text only. Users of the world-wide web can access gopher sites and retrieve information; world-wide web sites cannot be accessed from a gopher.

Home page Usually the first body of information encountered when accessing a web site. Similar to entering the reception area of an office building with a receptionist offering directions to the desired locations. Provides basic information about the organization or individual creating the site and usually links to other information at that site or at related sites. Anyone with access to an Internet server can create a home page, so they range from personal pages providing information about the individual to those run by government agencies or major corporations.

Hit A source or link identified by a search.

Hotlist A list of active links to other sites.

Internet (the Net) A system connecting millions of computers around the world. It is not centrally managed or controlled.

Links Most web pages include graphics or *hypertext* (often displayed in a different color than the rest of the text and underlined) which, if clicked on, transfer the user to another body of information within the web page or connect them to another web page, sometimes in a different part of the world. By following such links, a user can find a variety of information sources. Following links is also known as *browsing* or *surfing the Net*.

News groups Discussion groups built around a particular topic. Some are managed, others are not. *Usenets* take two forms: email groups, where subscribers receive comments and postings from other users, or bulletin boards, which users access to read posted messages or to post their own.

Search Engine A computer program resident at a web site that searches for other web sites using parameters provided by the user.

Server A computer connected to the Internet. Users cannot directly dial-up the Internet using a modem, but must gain access through a server. Many government offices, universities, and large businesses provide access for their employees. For access at home, a user can either subscribe to one of the commercial on-line services such as America Online, CompuServe, and Prodigy, which provide Internet access in addition to their other features, or to one of the dedicated Internet server companies located in most cities.

Site A location of stored information, accessible over the Internet.

URL (uniform resource locator) The electronic *address* of an Internet site. World-wide web URLs begin *http://www*. . . . The first part of a URL indicates the type of access, the second part the name of the computer where the resource resides, and subsequent parts the actual document. Every character on a URL must be entered correctly to access a site. An American URL with an extension of *.edu* is an educational site, *.mil* is military, *.gov* is government, *.org* is a nonprofit organization, and *.com* is a commercial site. Outside the United States, the extension usually indicates the country. For instance, *.uk* is the United Kingdom and *.za* is South Africa. Most of the country extensions are fairly easy to figure out. For those that aren't, the International Security Network provides a full list.

Web browser A software program to access web sites. Netscape is the most popular; Mosaic is also widely used. The commercial on-line service providers such as America Online, CompuServe, and Prodigy have developed their own web browsers. Most browsers look similar and are easy to use without training or tutorials.

Web page An electronic *page* of information displayed at a site on the world-wide web.

World-wide web (also WWW or the web) The fastest growing element of the Internet. Offers graphics, easy connections to related sites (*links*), and, increasingly, video and audio.

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Hauben, Michael and Ronda. *Netizens: On the History and Impact of the Net*. April 1995.
<http://www.columbia.edu/~hauben/netbook/>

Zakon, Robert H. *Hobbes' Internet Timeline*. 1993-96. <http://info.isoc.org/guest/zakon/Internet/History/HIT.html>

INTERNET SITES

The method for accessing the Internet sites listed here will vary according to the web browser used. To open a site with Netscape, the most popular browser, either click on the "Open" button, pull down the "file" menu and select "open location," or hit control-O, and then type in the URL. One can also type the address in the "Location" window and then hit "enter" on the keyboard. The following URLs were valid at the time of review. URLs may change, however. For any that have changed, one hopes that the site manager will have left a forwarding address.

Of course, a site's inclusion on the following list or in this article does not imply our endorsement of any commercial products or services.

2025 <http://www.au.af.mil/2025/2025home.html>

Advanced Research Projects Agency <http://www.arpa.mil/>

African National Congress <http://www.anc.org.za/>

Air Chronicles <http://www.cdsar.af.mil/>

AirForceLink <http://www.dtic.dla.mil/airforcelink/>

Airpower Journal <http://www.cdsar.af.mil/apje.html>

Air University <http://www.au.af.mil/>

Alta Vista <http://altavista.digital.com/>

American Universities <http://www.clas.ufl.edu/CLAS/american-universities.html>

Armed Forces Staff College http://www.ndu.edu/ndu/afsc/afsc_top.html

Army Knowledge Network <http://leav-www.army.mil:80/akn/>

ArmyLink <http://www.army.mil/>

Army Research Laboratory <http://infor.arl.mil/>

Articles <http://204.7.227.67/force21/articles/art-toc.html>

Associated Press http://www1.trib.com/NEWS/f_listintro.html

Association of the United States Army <http://www.ausa.org/>

Atlantic Monthly <http://www2.theAtlantic.com/atlantic/>

Australian Defence <http://www.adfa.oz.au/DOD/dodhmpgn.html>

Auswärtiges Amt <http://www.auswaertiges-amt.government.de/>

Automated Historical Archives System <http://leav-www.army.mil/akn/ahas.htm>

Battle Labs (TRADOC) <http://157.185.5.3/DefaultBL.html>

Bombs & Bullets <http://www.aber.ac.uk/~ctj94/index.html>

Bosnia Link <http://www.dtic.dla.mil/bosnia/>

Brookings Institution <http://www.brook.edu/>

Cable News Network <http://www.cnn.com/>

Campaign Plan <http://204.7.227.67/f21camp.html>

CapWeb <http://policy.net/capweb/congress.html>

Carter Center <http://www.emory.edu/>

Center for Army Lessons Learned <http://call.army.mil:1100/call.html>

Center for Defense Information <http://www.cdi.org/>

Center for Nonproliferation Studies <http://cns.miis.edu/>

Center for Strategic and International Studies <http://www.csis.org/>

Center for Strategic Leadership <http://carlisle-www.army.mil/usacsl/>

Central Intelligence Agency <http://www.odci.gov/>

Centre for Strategic Studies <http://www.vuw.ac.nz/css/>

College and University Home Pages <http://www.mit.edu:8001/people/cdemello/univ.html>

Commander's Conference <http://204.7.227.67/force21/confrence/conf-toc.html>

Conflict Studies Research Centre <gopher://marvin.stc.nato.int:70/00/secdef/csrc/csrcmain.txt>

Congressional Email Directory <http://www.webslingerz.com:80/jhoffman/congress-email.html>

Defense Intelligence Agency <http://www.dia.mil/>

Defense Link <http://www.dtic.dla.mil:80/defenseink/>

Defense Technical Information Web <http://www.dtic.dla.mil/dtiw/>

Democracy Net <http://www.ned.org/>

Department of National Defence <http://ww.dnd.ca/dnd.htm>

Department of State <http://dosfan.lib.uic.edu:80/dosfan.html>

EiNet Galaxy <http://www.einet.net/>

Electronic Headquarters for the Acquisition of War Knowledge (EHAWK) <http://www.olcommerce.com/cadre/index.html>

Europa <http://www.cec.lu/>

Excite <http://www.excite.com/>

Fletcher Forum <http://www.tufts.edu/fletcher/forum.html>

FM525-5 <http://204.7.227.67/force21/tradoc525/525-5toc.html>

Force XXI <http://204.7.227.67/f21home.html>

Foreign Affairs http://www.eneews.com:80/magazines/foreign_affairs/

Foreign Military Studies Office <http://leav-www.army.mil/fmso/fmso.htm>

Foreign Policy http://www.eneews.com:80/magazines/foreign_policy/

France Defence <http://www.ensmp.fr/~scherer/adminet/min/def/>

German Information Center <http://langlab.uta.edu/langpages/GIC.html>

GPO (Government Printing Office) Access http://www.access.gpo.gov/su_docs/aces/aaces001.html

Hoover Institution <http://hoover.stanford.edu/>

House National Security Committee <http://policy.net/capweb/House/HComm/hns.html>

IANWeb <http://www.pitt.edu/~ian/>

Industrial College of the Armed Forces <http://www.ndu.edu/ndu/icaf/icafhp.html>

InfoSeek Net Search <http://www2.infoseek.com/>

Inktomi <http://inktomi.berkeley.edu/>

Institute for National Strategic Studies <http://www.ndu.edu/ndu/inss/insshp.html>

Institute for the Advanced Study of Information Warfare <http://www.psycom.net/iwar.1.html>

IntelWeb <http://www.awpi.com/IntelWeb/>

International Institute for Strategic Studies <http://www.fsk.ethz.ch/d-reok/fsk/iiss/iisshome.html>

International Organizations [gopher://gopher.enews.com/11/magazines/alphabetic/all/iorg](http://gopher.enews.com/11/magazines/alphabetic/all/iorg)

International Security [gopher://gopher.enews.com/11/magazines/alphabetic/all/int_security](http://gopher.enews.com/11/magazines/alphabetic/all/int_security)

International Security Network http://www.fsk.ethz.ch/d-reok/fsk/defs_hom.html

Internet Resources Newsletter <http://www.hw.ac.uk/libWWW/irn/irn.html>

Internet Sleuth <http://www.intbc.com/sleuth/>

Jaffe Center for Strategic Studies <http://www.tau.ac.il/jcss/>

Jane's Information Store <http://www.janes.com/janes.html>

Joint Chiefs of Staff <http://www.dtic.dla.mil:80/defenseink/jcs/>

Joint Services Conference on Professional Ethics <http://www.duke.edu/jscope/>

Journal of Democracy [gopher://gopher.enews.com/11/magazines/alphabetic/all/democracy](http://gopher.enews.com/11/magazines/alphabetic/all/democracy)

Library of Congress <http://www.loc.gov/>

Lycos <http://www.lycos.com/>

Magellan <http://mckinley.netcom.com/>

MarineLink <http://www.usmc.mil/>

Marshall Center <http://www.marshall.adsn.int/marshall.html>

Military Spending Working Group <http://www.clark.net/pub/gen/mswg/>

MILNET <http://www.onestep.com/milnet/>

Ministry of Defence <http://www.mod.uk/>

Ministry of Foreign Affairs <http://www.nttls.co.jp/infomofa/>

Multilateral Treaties [gopher://gopher.law.cornell.edu/11/foreign/fletcher](http://gopher.law.cornell.edu/11/foreign/fletcher)

National Defense University <http://www.ndu.edu/>

National Public Radio <http://www.npr.org/>

National Security Agency <http://www.fas.org/pub/gen/fas/irp/nsa/>

National Technical Information Service <http://www.fedworld.gov/ntis/ntishome.html>

National Review [gopher://gopher.eneews.com/11/magazines/alphabetic/all/Rnational_review](http://gopher.eneews.com/11/magazines/alphabetic/all/Rnational_review)

National War College <http://www.ndu.edu/ndu/nwc/nwchp.html>

NATO <http://www.nato.int/>

NavyOnLine <http://www.ncts.navy.mil/>

Naval Postgraduate School <http://www.nps.navy.mil/>

Net Happenings <http://www.mid.net:80/NET/>

Net Scout Services <http://rs.internic.net/scout/>

Net Surfer Digest <http://www.netsurf.com/nsd/>

New Republic <http://www.dc.eneews.com/magazines/tnr/>

New York Times <http://www.nytimes.com/>

News Briefings from the ANC <http://pantheon.cis.yale.edu/~jadwat/anc/>

OMRI (Open Media Research Institute) Daily Digest <http://www.omri.cz/Publications/Digests/DigestIndex.html>

Open Text <http://www.opentext.com/omw/f-omw.html>

Organization of American States <http://www.oas.org/>

Organization for Economic Cooperation and Development <http://cs1-hq.oecd.org/>

Parameters <http://carlisle-www.army.mil/usawc/Parameters/>

Peace and Security <http://www.cfcsc.dnd.ca/welcome.html>

Peacekeeping Institute <http://carlisle-www.army.mil/usacsl/pki/>

Political Science Quarterly http://www.eneews.com:80/magazines/polisci_quarterly/

Program on Peacekeeping Policy <http://ralph.gmu.edu/cfpa/peace/peace.html>

RAND Corporation <http://www.rand.org/>

SACIS <http://www.cam.org/~sac/SACIS.html>

Scout Report <http://rs.internic.net/scout/report/>

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Stanford Center <http://www-leland.stanford.edu/group/CISAC/>

Starting Point <http://www.stpt.com/>

Stimson Center <http://www.stimson.org/pub/stimson/index.htm>

Stockholm International Peace Research Institute (SIPRI) <http://www.sipri.se/>

Strategic Studies Institute <http://carlisle-www.army.mil/usassi/>

TRADOC <http://www-tradoc.army.mil/>

UK CALS News <http://www.mod.uk/pe/cals/home.htm>

Unified Commands <http://www.dtic.dla.mil:80/defenselink/unified.html>

United Nations <gopher://nywork1.undp.org:70/1>

United Nations Scholars' Workstation <http://www.library.yale.edu/un/unhome.htm>

United States Institute of Peace <http://witloof.sjsu.edu/peace/usip.html>

United States Military Academy <http://www.usma.edu/>

US Army Command and General Staff College <http://leav-www.army.mil/>

US Army War College and Carlisle Barracks <http://carlisle-www.army.mil/>

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USA Today <http://www.usatoday.com/>

Voice of America <http://www.niss.ac.uk/news/voiceofam.html>

Washington Quarterly <http://www-mitpress.mit.edu/jrnls-catalog/washington.html>

Web Crawler <http://webcrawler.com/>

White House <http://www.whitehouse.gov/>

World Bank <http://www.worldbank.org/html/Welcome.html>

World News Connection <http://wnc.fedworld.gov/>

World News Index <http://toad.stack.urc.tue.nl/~haroldkl/index.html>

World Politics http://www.dc.eneas.com/magazines/world_politics/

Yahoo <http://www.yahoo.com/>

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Review Essay

Anticipating the Future: New Perspectives on Prussian and Austrian War Planning

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In the course of the 19th century, war plans evolved from broadly outlined terrain sketches and march orders *à la* Napoleon into intricate movement tables, mobilization schedules, and supply and logistics forecasts. The war planning process itself came to include the element of "rehearsal" through the perennial practice of war games, staff rides, and large-scale maneuvers. No longer merely the working out of myriad details concerning the movement of troops and equipment over distances large or small, war planning in the modern age also required platforms for the conduct of joint and contingency planning. In addition, changes in the social, political, and economic landscape of Europe brought new and indispensable dimensions to the conduct of war. Effective war planning thus required armies to envision the modern battlefield as a rapidly changing, multidimensional totality.

Advances in military technology like the breechloader and machine gun changed visions of war almost as quickly as they appeared. If the railroad and needle gun altered the face of battle in 1864 and 1866, the *mitrailleuse* and *chassepot* did so again in 1870-71. Smokeless powder and third-generation rifles like the Lebel and the Lee Enfield forced another face-lift in the 1880s, while recoil mechanisms, wireless telegraphy, automobiles, submarines, and the Maxim gun altered it again in the 1890s. After the turn of the century, the airship and airplane offered still further possibilities and posed yet additional problems for the future conduct of battle. *Fin de siècle* war planners thus faced the unique task of attempting detailed, multi-echeloned planning even as their visions of future war, the foundations of their diligence, continued to transform beneath them (see Showalter, Brodie).

Late 19th-century Europe not only saw the face of battle evolve more rapidly than any previous era, it also witnessed accelerating developments that affected the socio-cultural, political, and economic dimensions of war. The growth of a prosperous middle class and the emergence of an industrial proletariat introduced new social structures that offered fertile soil for the rise of anti-war ideologies like socialism and pacifism. The intensification of nationalistic sentiments since the French Revolution made war more susceptible to populist impulses, thereby increasing its inherent risk and weakening the already dubious ability of states to control it. The progress of industrialization and the emergence of mass armies portended great social and economic catastrophes in the event of a general European conflict. In short, by the late 19th century, the cumulative breadth and pace of change had created a general crisis in warfighting that affected all levels of war.

The 25 years between 1890 and 1914 mark the first time in military history that war planners had to contend with

change on such a vast scale. However, conventional wisdom casts their efforts to do so in a decidedly negative light. The endless stalemate and slaughter of World War I have decisively (and perhaps unjustly) shaped the historical opinion of the pre-war era. The received view holds that turn-of-the-century armies acted merely to protect their own power, autonomy, and identity. In that view, issues related to warfighting possessed only secondary or tertiary importance--mere ploys to win budgetary battles or to preserve the prestige, self-image, and morale of the military establishment. The era's military thinkers seem backward-looking, opposed to innovation, and all too ready to refight the last war rather than take the necessary measures to win the next. Military leaders in general appear reactionary, anti-intellectual, and dismissive of complex situations. In the view of some authors, the military culture of the era seems shallow, resistant to reform, and utterly unequal to the task at hand (Demeter, Kitchen, Miller, Posen, Schulte, Snyder, and Storz). Given such abundant criticisms, it seems rather surprising that aside from a recent work on strategy-making, the attendant difficulties of war planning as a process, particularly at the turn of the century, have thus far received little attention (Murray, et al.).

Fortunately, two works recently appeared which offer the military historian and student of war new perspectives on late 19th-century war planning. Arden Bucholz's *Moltke, Schlieffen and Prussian War Planning* addresses the Prusso-German efforts to modernize the war planning process within the Great General Staff (GGS); and Scott W. Lackey's *The Rebirth of the Habsburg Army: Friedrich Beck and the Rise of the General Staff* chronicles those of the Austro-Hungarian army. Each study reveals how general staffs, the vehicles of war planning, evolved from instruments primarily responsible for campaign planning into institutions at least partially capable of envisioning future war. A third work, *Moltke and the Art of War: Selected Writings*, edited by Daniel J. Hughes, captures key documents written directly by or under the guidance of the elder Moltke and provides a useful companion to the other two. For Moltke's thoughts decisively influenced not only the Prusso-German army, but the Austro-Hungarian as well.

Bucholz's thorough study begins with the original inspiration for the Prussian general staff system, the series of memoranda written by Colonel Christian von Massenbach in the late 18th century. Massenbach's memoranda recommended reform along four basic themes: (1) the study of potential enemies and fields of conflict, which Bucholz calls "a knowledge-based deep-future orientation"; (2) contingency planning; (3) staff exercises (war gaming and historical study) designed to test specific cases; and (4) the marriage of theory and practice with the regular rotation of staff officers to line units. These themes later became the essence of the general staff tradition. The golden age of Prusso-German military success, the era of the elder Moltke, validated this tradition, while the great chief of staff himself refined it.

The remaining chapters of *Prussian War Planning* follow the evolution of the GGS, in particular its Railroad Section, as a war planning body. Between 1871 and 1891, Moltke reorganized and expanded the GGS in response to an increase in army size and to ever-growing mobilization demands. It became a full-fledged bureaucracy, nearly independent, and comparable in size and importance to any of the Reich's governmental offices. At the same time, Moltke's high standards, combined with the physical demands of modern war planning, created a staff ethos that prized precision, thoroughness, and a lifestyle of self-denial.

Under Schlieffen, this ethos wedded with Hutterian Pietism--a sense that a divine order and predestination prevailed over human affairs--resulting in an explicit link between military duty and personal destiny. Schlieffen perfected the use of the staff ride and the war game as instruments of war planning. The role of the Railroad Section grew immensely under his tutelage. Between 1897 and 1905, he developed the now infamous Schlieffen Plan which, whatever its faults, was the first war plan to become completely interwoven with a major component of modern infrastructure, the railroad. War planning became so interlinked with the Reich's railroad systems that mobilization became virtually inseparable from war. Paradoxically, it is in the growth of the GGS's Railroad Section and its eventual domination of the war planning process itself that Bucholz finds the most compelling evidence of the General Staff's future-war orientation. Paradoxically, he is correct. The all-too-thorough integration of railroad and mobilization schedules made the decision to go to war all but irreversible in 1914.

Readers will find little to fault in Bucholz's work. *Prussian War Planning* is as comprehensive and thorough as was its subject. One is reminded of the 16th-century political theorist Jean Bodin, whose famous *Method for the Easy Comprehension of History* earnestly sought to bring "all things together, arrange and define them." Critics of Bodin said that he was a man who had read too much. Bucholz, too, has read a great deal.

Scott Lackey's *Rebirth of the Habsburg Army* has rescued Lieutenant General Friedrich von Beck, father of the Austro-Hungarian general staff system, from an almost incomprehensible historical obscurity. In fact, Lackey portrays Beck as the Moltke of the Austro-Hungarian army, and rightly so. The author shows that the emergence of general staff systems, like other military institutions in the 19th century, depended a great deal on chance and personality. Between 1867-73, for example, the Austro-Hungarian general staff had nearly ceased to exist thanks to the ambitious efforts of War Minister Franz Freiherr Kuhn von Kunnfeld, who sought to arrogate power to himself by transferring the functions of the general staff to the War Ministry. Only the persistent efforts of Beck and the Habsburg army's Inspector General, Archduke Albrecht, combined perhaps with a *faux pas* or two on the part of Kuhn himself, prevented the "Kuhn System" from succeeding. The "Beck System" which took its place modeled itself after Moltke's and, as did its Prussian counterpart, effectively reformed the Habsburg army's war planning process.

The Austro-Hungarian general staff took only the best officers from a rigorous selection process which included attendance in the *Kriegsschule*--the Austrian equivalent of the *Kriegsakademie*. Its organization paralleled that of the Prussian general staff and included a directorate and operations, intelligence, mapping, railroad, and telegraph departments. As Lackey rightly points out, while the centralizing tendency of the general staff system fostered "like" or even "rigid" thinking among officers, it also built trust, confidence, and cohesion throughout the various levels of command. The institutionalization of a uniform doctrine might have dampened creative thinking, but it allowed officers at all levels to understand the rationale behind the orders they would execute. A clear understanding of how divisions, corps, and armies would deploy and fight on the modern battlefield formed an essential part of the war planning process. In fact, standardization--the nemesis of the independent mind--provided staff officers with the requisite set of expectations that enabled them to perform their tasks properly.

Lackey's work, though strong, would have benefited from a more comparative analysis. While he often contrasts the Austrian and Prussian general staff systems, a few references to the British and French variants would have highlighted the strengths and weaknesses of the Beck System more clearly. In addition, readers will want to keep István Deák's first-rate *Beyond Nationalism: A Social & Political History of the Habsburg Officer Corps 1848-1918* close at hand. Lackey does not develop sufficiently the political and socio-cultural milieu in which the Habsburg officer corps operated. Such milieus would have made certain courses of action obvious to Austro-Hungarian officers while completely obscuring others.

Daniel Hughes' *Moltke on the Art of War* offers a useful translation of the great chief of staff's thoughts concerning the nature of war, the role of battle, the purpose of strategy, and the influence of politics. Incorporating portions of an earlier translation by Harry Bell, Hughes has brought together into one book several of the more significant essays from volumes II and IV of Moltke's *Militärische Werke*, published by the GGS after his death. These essays include: "War and Peace" (c. 1880); "On Strategy" (1871); "Defense and Attack" (1882-86); "Railroads" (1861); "Telegraphs" (1871-81); "The Battle" (c. 1866-70); and his "Instructions for Large Unit Commanders of 24 June 1869." While the selection is a good one, it does not allow the reader to appreciate the evolution of Moltke's thought or the physical events that helped shape it. Historians like Eberhard Kessel, Azar Gat, and Stig Förster have recently depicted a multidimensional Moltke whose thought evolved over time, responding inductively to the events of the 19th century as they unfolded. The picture that Hughes presents does not reflect a human Moltke, but the legacy that he left behind. *Moltke on the Art of War* needs an appendix that includes one or two of Moltke's addresses to the German Reichstag, a few letters to his wife and family, and other personal notes that would reveal his political and social orientations. His background and experiences, too, had a bearing on his approach to war.

In addition, readers who have worked with the German language will find Hughes' translation, although fundamentally correct, a bit too rigid in places. In the footnotes on pages 172-73, for example, he attempts to justify his translation of the word *Entschluß* as decision rather than resolution--the solution to a problem. However, in the passage in question, Moltke alludes to the difficulty of *solving* a tactical problem, rather than *making* a decision; hence, resolution is more appropriate. Again, in the footnotes on pages 46-47, 124-25, and 174-75, he argues that the German word *Wissenschaft* should be translated as a "disciplined body of knowledge" rather than "science," since today the latter term is too laden with "technical, mathematical, and empirical connotations." Although correct for most scholarly discourse, this interpretation overlooks the entire debate, begun in earnest in the 18th century, over whether the conduct of war was an *art* or a *science* (not a disciplined body of knowledge). Moltke's passage contributes to that debate. Clausewitz's discussion of the same topic in *On War*, Book II, chapter 3, addresses some of the same issues. Within the context of

this debate, the word *Wissenschaft* still included a host of "technical, mathematical, and empirical" connotations; they were merely different from today's. Despite such minor deficiencies, Hughes' contribution remains a valuable one.

It is important to point out that neither Bucholz nor Lackey apologizes for the military failures that occurred between 1914 and 1918, and there were plenty. Rather, each describes how military establishments, and general staffs in particular, reorganized themselves to fight more effectively. Although neither deals directly with *fin de siècle* Europe's crisis in warfighting, each demonstrates that throughout the 19th century Prussian and Austrian war planners remained responsive, albeit imperfectly so, to Europe's profound and rapid social, political, and technological transformations. To be sure, in most cases these armies preferred to implement conservative rather than radical reform. But then, so did most businesses and political parties at the turn of the century. Military establishments adjusted to modernity in ways not unlike those followed by their civilian counterparts.

We should not underplay how difficult it was to anticipate the future while contending with a fluid present. Additional research into the interrelated fields of training and training development, the material links between theory and practice, will tell us more about how such changing visions manifested themselves in the actual preparation of soldiers for war. Furthermore, we must not forget that the fog and friction of war contributed as much, if not more, to the endless stalemate and bloodletting that have come to characterize World War I as did inaccurate or incomplete visions of war. Our analyses of military failure (or success) must distinguish between faults in planning and errors in execution. The latter do not necessarily proceed from the former.

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Review Essay

Logistics in Peace Operations and Humanitarian Assistance

CHARLES R. SHRADER

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The United States entered the global arena in 1898, and since that time US military forces have been deployed abroad innumerable times. Since 1958 alone, there have been at least ten major deployments, most of which have not involved active combat operations. The deployment of US forces on operations in which active combat is not expected, and which have as their principal mission peace support or humanitarian assistance, has become the norm rather than the exception. Deployment and redeployment aside, one of the chief characteristics of such operations is that their logistical component is often at the center of the assigned mission.

The Available Literature

The historical and professional literature is almost devoid of comprehensive studies on the logistical aspects of noncombat deployments. There are no books on the subject that I am aware of, and few studies delve into the subject in any depth. The student seeking to understand this aspect of military affairs must therefore rely on passing mention of logistics in more general studies of noncombat operations, on the very few specific studies that have been done, on articles in military and other periodicals, and on official after-action reports and handbooks.

Longer Studies

The few monographs that directly address logistics in noncombat operations tend to be sketchy, incomplete, and short on analysis. One of the best is Lieutenant Colonel Gary Wade's *Rapid Deployment Logistics: Lebanon, 1958*, which clearly depicts the confusion of the logistical effort in support of that intervention. Wade covers various logistical aspects of the planning, deployment, and employment phases of the operation, and attempts to draw some general

conclusions. His principal finding is that all participating units, especially the support units, must know what is expected of them.

The US intervention in the Dominican Republic in 1965 also has been the subject of a number of good political or operational studies, none of which deals specifically with logistics. This was a transitional episode; deployed US forces did see limited combat, but by and large the operation was political in its objectives and devolved into a humanitarian relief effort. As a multinational operation, it shared many of the characteristics of more recent noncombat operations. I am unfamiliar with any comprehensive study of the logistical aspects of US operations in the Dominican Republic, but at least two general studies contain some good information on the subject. An article by Lawrence A. Yates entitled "Mounting an Intervention: The Dominican Republic, 1965" addresses some logistical aspects of the operation. A more comprehensive study is Major Lawrence M. Greenberg's *United States Army Unilateral and Coalition Operations in the 1965 Dominican Republic Intervention*. Greenberg's monograph includes an excellent bibliography, but none of the works cited pertains specifically to logistics.

Two other studies that ought to be consulted for information on logistics in peace operations and humanitarian assistance are *Logistical Considerations in Low Intensity Conflict* by William F. Furr, and *An Assessment of Logistical Support in International Peacekeeping Forces* by E. E. Price.

Articles

Most of the available published material on logistics in these operations is to be found in brief articles in military professional periodicals such as *Joint Forces Quarterly*, *Military Review*, *Parameters*, and *Army Logistician*. Of these, *Army Logistician* is a particularly rich source of short articles on recent noncombat operations. Individual issues often contain several related articles addressing the various logistical aspects of a given operation. For example, the May-June 1995 issue examines logistical aspects of Operation Support Hope in Rwanda, and the January-February 1996 issue looks at Operation Uphold Democracy in Haiti. The March-April 1996 issue highlights logistics in Operation Joint Endeavor in Bosnia.

While the articles in *Army Logistician* tend to be short on details and analysis, Lieutenant Colonel Christopher R. Paparone's "Logistics--Sometimes the Main Effort in MOOTW," is a welcome exception. Paparone argues that a mismatch--between the assigned mission and the commander's concept of the operation--frequently results from the failure of combat-oriented planners to recognize that "the operational main effort" in peace operations or humanitarian assistance may be logistical rather than operational. This failure to understand the centrality of logistics in these operations can impair mission accomplishment. The author notes, "We must recognize that command logistics may sometimes override the traditional combat orientation of commanders and staffs."

Longer and more detailed articles may be found in the other professional military journals listed above or even in civilian academic journals such as *The Journal of Military History* or *Diplomatic History*. One example is Gilbert S. Harper's 1990 *Parameters* article on Operation Urgent Fury, entitled "Logistics in Grenada: Supporting No-Plan Wars," which stresses the lack of time for detailed planning and coordination in most contingency operations. My own 1989 *Military Review* article ("BOBCAT--Rapid Deployment in 1942") also deals with the logistical problems of deploying forces on short notice and with minimal planning time. Operation Bobcat was the first US deployment in World War II--to Bora Bora for the purpose of constructing a naval fuel depot--and demonstrates what can happen when planning and preparation time is insufficient.

Official Reports

The official after-action reports of peace and humanitarian operations often contain a wealth of interesting and important information regarding the logistical aspects of such operations. However, the focus is not usually on logistics, and logistical information must be patiently mined and refined from the crude ore. One of the best examples of such a report which, if carefully read, provides a good deal of interesting information on logistics is the *After Action Review: Operation SUPPORT HOPE*, published by Headquarters, US European Command. Indeed, this official document is a model of what a good, historically based after-action report ought to be: a 36-page executive summary and three appendices containing a set of detailed "lessons-learned," reproductions of key documents, and statistical tables.

Operation Support Hope, the US military component of the humanitarian relief effort in Rwanda and Zaire from July to October 1995, involved a small task force which never exceeded 3600 military personnel in the area of operations. The US joint task force had the mission of providing humanitarian assistance. Its commander, Lieutenant General Daniel R. Schroeder, points out that the operation was important in that it demonstrated the value of military forces as enablers, not as replacements, for nongovernmental organizations (NGOs) and relief agencies of the US government and the United Nations.

The report covers all logistical aspects of the operation, with special attention to the tailoring and phased deployment of the task force. The principles followed to mobilize, stage, deploy, employ, and redeploy the task force were all "standard," but the composition of the force, the engagement criteria, and the desired end state were much different from traditional combat operations. The short notice and consequent compressed planning and preparation time made deliberate planning almost impossible, adversely affecting the ability of the task force to build the necessary connections with UN agencies and NGOs. The executive summary notes that the participants "met on the dance floor," even though the need to integrate US, UN, and NGO activities had been determined to be second in priority only to the security of the task force itself. The challenge posed to command and control by the great distances involved is also discussed, as is the ad hoc structure of the joint task force. Of particular interest are the comments on the tailoring of the force to meet the particular conditions in Rwanda: "The requirement for tailored capabilities that seems to be increasingly a feature of today's deployments" required "deep tailoring" which in turn depended on the ability to control the Time-Phased Force Deployment Data in ways which the Joint Operations Planning and Execution System could not do satisfactorily. The authors go on to state that any rapid deployment, regardless of the mission, "calls for reconnaissance and command well forward in the deployment flow, responsive command and control, and for a method that permits the commander to influence the type and sequence of capabilities arriving in the operational area."

Another interesting example of a good after-action report is the account of the 354th Civil Affairs Brigade's participation in Operation Provide Comfort in Kurdistan in 1991. Operation Provide Comfort, which began in April 1991, involved the administration and support of more than 760,000 Kurdish refugees in eight camps in northern Iraq. It was the largest civil-military relief operation since the Berlin Airlift of 1948-49. The distances involved, the remote and rugged terrain of the Kurdish mountain camps, and the consequent difficulties of logistical support were overcome by outstanding cooperation among US and other military forces, the Turkish government, the UN, and hundreds of volunteers from some 47 different civilian relief organizations. The after-action report of the 354th Civil Affairs Brigade provides a wealth of detail on the logistical aspects of the operation, but again the logistical lessons must be carefully extracted from the political and operational details.

Official Handbooks

A final important genre of material on logistics in peace and humanitarian assistance operations consists of the handbooks and other guidance documents provided to commanders and staffs; they attempt to synthesize past experience, current doctrine, and practical advice. Typical of this genre is the *Joint Task Force Commander's Handbook for Peace Operations (Preprinting Version)*. Chapter IV of this handbook covers "Logistics Support." *The Handbook for Logistic Support to United Nations Peacekeeping Operations (DRAFT)* is more narrowly focused and notes that logistical support to UN forces has not been good due to the lack of suitable infrastructure in the area of operations, the lack of a common logistics system, and poor planning and coordination.

Refining the Raw Material

What can one learn from the tedious process of analyzing the diverse materials available? First, one may find some general observations about the nature of peace operations and humanitarian assistance encompassing such topics as planning and preparation time, the nature of the possible missions, command and control, the tailoring of forces, and security. Second, if one reads carefully, there is much to be learned about the nature of logistics in such operations. Finally, the observant reader may develop insights into the role that long-standing military traditions and institutional biases play in operations of all types.

The Nature of Peace Operations and Humanitarian Assistance

These activities differ from combat-oriented military deployments in several significant ways. They normally involve rapid deployment of forces, most often from the United States, on short notice with minimal time for planning, coordinating, and preparing for the moves and for operations after arrival. Almost always, the mission will have a high political and logistical component and a correspondingly low combat component. Most such operations have been brief, with little if any combat. Experience has shown, however, that the mission can be highly ambiguous, and that incremental changes to the mission can have significant consequences.

These operations are also unlikely to be undertaken unilaterally by the US Army, but often will be conducted in cooperation with other services, the armed forces of other nations, the UN, and--particularly in humanitarian assistance situations--a multitude of NGOs. Accordingly, command and control can be much more complicated than that expected in a wartime situation. The forces deployed in noncombat operations are likely to be organized on a task force basis and tailored specifically to the expected mission and theater of operations. Finally, the physical security of the deployed force is almost always the major consideration. On the other hand, the expected emphasis on the security of plans and communications may be less critical than in a combat operation since the mission, size, and composition of the forces, locations, and other potentially sensitive data may be announced publicly even before the operation begins.

The Nature of Logistics in These Operations

The *Joint Task Force Commander's Handbook for Peace Operations* points out that operations and logistics are inseparable. While that is true in any type of operation, it is also true that in many, if not most, noncombat operations the central mission focus may be essentially logistical in nature: to provide relief supplies, medical care, and other services, for example, rather than to conduct combat operations. Our sources tell us that unless commanders and staff at every level understand this important distinction, there will be problems. In his *Army Logistician* article, Lieutenant Colonel Papparone puts the matter succinctly: In these operations, "understanding the capabilities of reverse osmosis water purification units . . . and mortuary affairs thus may be more important than directing the operations of a light infantry battalion."

Logistical arrangements in these operations tend to be somewhat ad hoc, and established doctrine and procedures must often be adapted to the unique conditions found in the mission area. Local conditions cannot always be foreseen, and the normal training provided military personnel will be unlikely to have covered many of the tasks that the deployed force is required to perform. Under those conditions, the normal "tooth-to-tail"--combat to support personnel--ratios may not apply, particularly if the mission is focused on providing relief to the local population or support for allies. Additionally, political considerations may limit the type and number of units and personnel deployed.

In Greenberg's monograph on the 1965 Dominican Republic intervention, the author points out that the deployed contingents from other members of the Organization of American States "remained totally dependent on the United States for logistics." It is generally true that US military forces, by virtue of their considerably greater capacity, can expect to provide substantial logistical support to other participating nations, UN agencies, and NGOs in the area of operations.

Most operations will also involve significant reliance on local infrastructure and resources. US planners assume that whatever facilities are needed during combat will accompany the deploying forces or be constructed from scratch in the theater of operations. However, the brief duration and limited force deployment in most noncombat operations usually dictate a much higher degree of reliance on host-nation support for fixed infrastructure and consumable supplies such as food, water, and fuel.

Despite the fact that each noncombat operation is unique, the tried and true principles of effective logistics will apply, but they may need to be supplemented. *The Handbook for Logistic Support to United Nations Peacekeeping Operations* includes a set of "Principles of Cooperative Logistics" worth repeating, although space does not permit a detailed discussion here. They are: simplicity, cooperation, foresight, sufficiency, flexibility, accountability, economy, visibility, security, and responsibility.

The Heavy Hand of Tradition

Few American military officers give much thought to how traditional attitudes and biases have been outmoded by rapid changes in the nature of warfare. Even a cursory examination of the logistical aspects of peace operations and humanitarian assistance highlights the profound effects of outdated attitudes on the conduct of military operations.

To be sure, the training and indoctrination of a lifetime are hard to overcome. American military officers focus on command in combat--be it on land, at sea, or in the air--rather than on staff work, the preparation for war, or the support of war-fighting forces. This long-standing combat-command bias is also found among logisticians, which is understandable given 20th-century warfighting techniques. However, in a reversion of sorts to our 19th-century experience, noncombat activities may have become at least as important as combat.

When combat-command bias exists, it can be reflected in the attitudes of commanders and operational planners toward logistics and logisticians, who tend to be tolerated as necessary evils, sometimes ignored altogether. Consequently, despite plentiful evidence to the contrary, logistical constraints and the advice of professional logisticians are often overlooked or overruled in the rush to deployment or combat.

Few would deny that every unit involved in an operation must be well informed about the mission, the commander's intent, and relevant plans and objectives; they must also be kept apprised of all changes to those matters. It is not uncommon, however, to find that operational planners tend to focus almost exclusively on the combat arms units involved in a deployment. Whenever this attitude prevails, it can make success difficult, if not impossible to attain, as Lieutenant Colonel Wade notes in his study of the Lebanon intervention of 1958:

The most important planning lesson from the Lebanese experience is that planners must use a classification commensurate with security requirements and not create a smug in-the-know elite. If security restrictions prevent units from learning their assigned roles in a mission, it is self-defeating.

Stringent operational security and compartmentalization of planning can be dysfunctional in any operation, particularly those whose purpose is not combat.

The institutional focus on combat command also becomes manifest when one examines common aspects of peace operations and humanitarian assistance such as support of the civilian population, the comfort of our own troops, and the noncombat needs of a deployed force. We plan carefully to ensure that our troops have rations, shelter, and clothing, but planning for the unusual requirements will often remain well down the priority list of tasks. Given the central importance of nontraditional support in such operations, failure to attend properly to matters such as support of a civilian population can contribute to mission failure.

The comfort and convenience of our troops also can become a secondary consideration. Naturally, sacrifice is expected in a combat situation. But when sacrifice is not required, there often remains a profound bent toward "living rough" just for the sake of it. We normally assume, for example, that in any theater of operations it will be necessary, even desirable, to live "in the field" rather than use available structures for work areas or for sheltering and feeding the force. How many times have we been told on exercises to pitch a tent rather than, as the Bundeswehr often does, take over the nearest *Gasthaus* as a command post? The traditional attitude may have been appropriate for the commander of a force mounting an amphibious assault of a remote Pacific island, but present realities argue against such a bias.

Conclusion

If the military forces of the United States are to succeed in carrying out the many noncombat missions that seem to be part of our future, we must change our thinking as well as our doctrine and force structure related to logistics. Residual effects of Cold-War debates over tooth-to-tail ratios have to be identified and either revalidated or modified. Printed material available on logistics in situations that do not involve combat indicates that what was tooth may be tail--and tail, tooth--in this new operating environment. A shift in command and staff emphasis in planning and conducting these new operations should follow recognition of that proposition.

Success will hinge on the degree to which institutional biases are overcome. Study of past operations is the single most effective means of gaining the knowledge needed to overcome them. In doing so we will develop an appreciation of the nature of peace operations and humanitarian assistance so that we can improve our responses to such activities in

the future. We can also identify the problems encountered since 1958, sometimes repeatedly, and learn either how they were overcome or that they remain to be overcome.

It is unfortunate that we still do not have an adequate historical study of the logistical aspects of even one of the many peace operations and humanitarian assistance activities we have conducted. Perhaps next year . . .

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